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Arab Republic of Egypt Public Sector Investment Review

Volume I Main Report

October 28, 1993

Country Department II
Country Operations Division
Middle East and North Africa Region

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MICROGRAPHICS

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CURRENCY EQUIVALENT

Average Exchange Rates

1990/91: US\$1.00 = 2.956 Egyptian Pounds (LE)
1991/92: US\$1.00 = 3.323 Egyptian Pounds (LE)
1992/93: US\$1.00 = 3.332 Egyptian Pounds (LE)
Sept. 1993: US\$1.00 = 3.360 Egyptian Pounds (LE)

FISCAL YEAR

July 1 - June 30

LIST OF ABBREVIATIONS

AADT	Annual average daily traffic
AfDB	African Development Bank
AfDF	African Development Fund
AGOSD	Alexandria General Organization for Sanitary Drainage
APA	Alexandria Port Authority
APA	Atomic Power Authority
ARENTO	Arab Republic of Egypt National Telecommunications Organization
ATA	Alexandria Transport Authority
AWA	Alexandria Water Authority
BESD	Bank Economic and Social Database
CAA	Civil Aviation Authority
CAPMAS	Central Agency for Public Mobilization and Statistics
CATI	Civil Aviation Training Institute
CCOs	Curative care organizations
CIA	Cairo International Airport
CIDA	Canadian International Development Agency
CPI	Consumer price index
CTA	Cairo Transport Authority
DDSR	Debt and Debt Service Reduction Agreement
DPA	Damietta Port Authority
ECAA	Egyptian Civil Aviation Academy
EDA	Electricity Distribution Authority
EDCs	Electricity distribution companies
EEA	Egyptian Electricity Authority
EGPC	Egyptian General Petroleum Corporation
EMIS	Education management information system
ENR	Egyptian National Railways
EOGCSP	Executive Organization for Greater Cairo Sewerage Projects
EPADP	Egyptian Public Authority for Drainage Projects
ERSAP	Economic Reform and Structural Adjustment Program
FAO	Food and Agricultural Organization
FDI	Foreign direct investment
FRR	Financial rate of return
GAEB	General Authority for Educational Buildings
GAFI	General Authority for Investment and Free Zones
GARPAD	General Authority for Rehabilitation Projects and Agricultural Development
GASC	General Authority for Supply Commodities
GCWEA	Greater Cairo Wastewater Executing Authority
GFI	Gross fixed investment
GNFS	Goods and non-factor services
GOCHC	General Organization for Construction and Housing Cooperatives
GOFI	General Organization for Industrialization
GOGCSD	General Organization for Greater Cairo Sanitary Drainage
GOGCWS	General Organization for Greater Cairo Water Supply
GOPP	General Organization for Physical Planning
HCS	Holding companies
HDB	Housing and Development Bank
HMOs	Health maintenance organizations
HPPEA	Hydropower Plants Executive Authority
IBRD	International Bank for Reconstruction and Development
ICOR	Incremental capital-output ratio
IDA	International Development Association
IDSC	Information and Decisions Support Center
IFAD	International Fund for Agricultural Development

IFC	International Finance Corporation
ILO	International Labour Organization
IMF	International Monetary Fund
KfW	Kreditanstalt fuer Wiederaufbauen
LDUs	Land development units
LMP	Land master plan
LRMC	Long-run marginal cost
MALR	Ministry of Agriculture and Land Reclamation
MCA	Ministry of Civil Aviation
MDHPU	Ministry of Development, New Communities, Housing and Public Utilities
MDNC	Ministry of Development and New Communities
MEP	Ministry of Electricity and Power
MFI	Misr Flying Institute
MHPU	Ministry of Housing and Public Utilities
MMP	Ministry of Military Production
MMT	Ministry of Maritime Transport
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MOHE	Ministry of Higher Education
MOP	Ministry of Planning
MOT	Ministry of Transport
NPR	Ministry of Petroleum and Mineral Resources
MPMWR	Ministry of Public Works and Water Resources
MSA	Meteorological Services Authority
MYCMT	Ministry of Transport, Communications and Maritime Transport
NAMT	National Association for Metro and Tunnels
NCATO	National Civil Aviation Training Organization
NCOA	New Communities Development Agency
NIA	National income accounts
NIB	National Investment Bank
NMA	Nuclear Material Authority
NOPWASD	National Organization for Potable Water and Sanitary Drainage
NPO	National Postal Organization
NPPA	Nuclear Power Plants Authority
NTBs	Non-tariff barriers
NTI	National Transport Institute
O&M	Operation and maintenance
OCNEE	Organization for Construction and Manufacture of Electrical Equipment
ODA	Overseas Development Administration (United Kingdom)
OEP	Organization for Energy Planning
PBDAC	Principal Bank for Development and Agricultural Credit
PECs	Public excavation companies
PEs	Public enterprises
PLA	Ports and Lighthouses Authority
PSIR	Public sector investment review
PSPA	Port Said Port Authority
RBA	Roads and Bridges Authority
REA	Rural Electrification Authority
REDA	Renewable Energy Development Authority
RO/RO	Roll-on/roll-off
RSPA	Red Sea Ports Authority
RTA	River Transport Authority
SAL	Structural adjustment loan
SAMP	Structural adjustment monitoring program
SAR	Staff Appraisal Report
SCA	Suez Canal Authority
SDR	Special drawing right
SEC	Supreme Energy Council
SFD	Social Fund for Development
TBs	Treasury bills
TFP	Total factor productivity
TPA	Transport Planning Authority
UNTACDA	United Nations Transport and Communications Decade in Africa
UPU	Universal Postal Union
USAID	United States Agency for International Development
VLCCs	Very large crude carriers

PREFACE AND ACKNOWLEDGEMENTS

This report presents the key findings and recommendations of a World Bank mission that visited Egypt from February 18 to March 6, 1992. The mission was invited by the Government to review its medium-term investment program in the context of Egypt's Third Five-Year Plan (FY93-97). At the request of senior officials of the Ministry of Planning and the National Investment Bank, the Bank mission informed the Government of its preliminary findings and recommendations. The Third Five-Year Development Plan of Egypt, which was approved by the People's Assembly in May 1992, reflects a number of key recommendations made by the Bank mission to the Government.

The Bank team wishes to convey its appreciation to the Egyptian authorities who kindly provided valuable information and support to the Bank staff during the mission's visit to Cairo and later during preparation of this report. The mission held discussions with senior officials of the Ministry of Planning, the National Investment Bank, nearly all of the sector ministries, and a number of service and economic authorities. In particular, the team wishes to thank H.E. Dr. Kamal El-Ganzouri, Deputy Prime Minister and Minister of Planning. The mission also had valuable discussions with H.E. Dr. Salah el din Hamed, Deputy Prime Minister and Governor of the Central Bank of Egypt; H.E. Dr. Maurice Makramallah, the Minister of International Cooperation; H.E. Dr. Atef Mohamed Ebeid, the Minister of Cabinet Affairs; H.E. Dr. Youssef Boutros Ghali, the Minister of State; and Dr. Saad El-Faragy, Economic Adviser to President Mubarak.

The mission held extensive, and very helpful, discussions with the senior staff of the Ministry of Planning and the National Investment Bank, particularly Dr. Zafer El-Bishri, Chairman, National Investment Bank; Dr. Said El-Dohaia, First Undersecretary, Ministry of Planning; and Dr. Ismail Bedawi, Senior Advisor, National Investment Bank. The mission greatly benefited from the support it received from Dr. Ahmed El-Dersh, First Undersecretary, Ministry of International Cooperation, and his staff during the mission. The mission members contributing to the report were as follows:

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The mission was also assisted by Jorge Martinez (Consultant, Human Resources), Shigeru Kubota (Energy) and Mohua Mukherjee (Human Resources), who were participating in other Bank missions in Egypt during the same period. Otto Maiss assisted the mission in updating and finalizing the chapter on human resources. Lyn Squire, Chief Economist for the North Africa and Middle East region, joined the mission from February 28 to March 6. Although the mission did not review the proposed projects by the Ministry of Industry, the Ministry of Military Production, or by the public enterprises, Emile Sawaya, Principal Operations Officer, prepared the chapter on industry in Washington based on the information contained in the documents of the Third Five-Year Plan. Volume I, the Main Report, presents the Introduction and Executive Summary, the Macroeconomic Framework of the Plan, the Roles of the Public and Private Sectors in Egypt, and Sectoral Analysis of the Plan (Agriculture, Energy, Urban, Telecommunications and Post, Transport, Human Resources, and Industry); Volume II presents the Statistical Annex tables and a listing of all new/expansion-type projects requiring foreign financing.

The team was assisted by John Wetter, who provided valuable technical and economics editorial support for preparation of Volume I, for the production of the project listing in Volume II and for preparation of the Grey Cover Report. Fernando Batista and Neda Pirnia prepared the statistical tables in Volume II.

ARAB REPUBLIC OF EGYPT
PUBLIC SECTOR INVESTMENT REVIEW

PART I: MAIN REPORT

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CHAPTER I

INTRODUCTION AND EXECUTIVE SUMMARY

A. Introductory Remarks

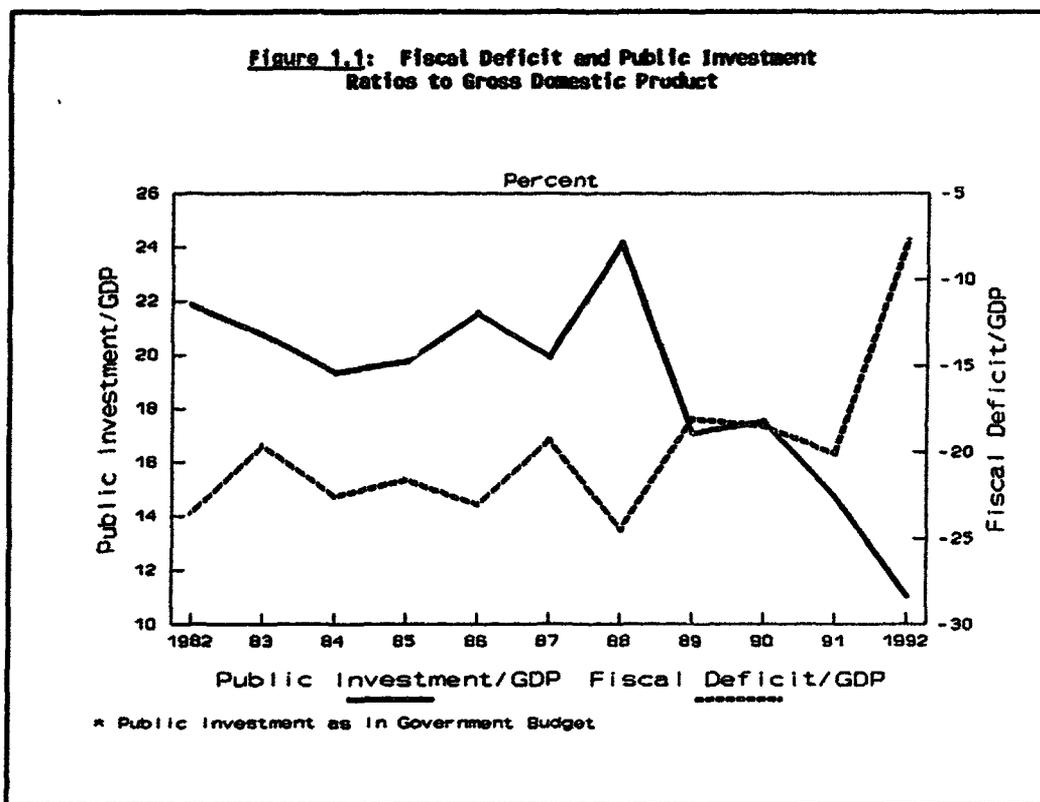
1.1 The World Bank has not conducted a public investment review for Egypt since 1988.¹ That review had a limited scope (agriculture, manufacturing and power) and did not evolve beyond a preliminary draft. The key recommendations of the review were, however, shared with the Government of Egypt.

1.2 Until recently, state-owned enterprises and economic entities played a dominant role in the economy of Egypt and accounted for one of the largest shares of gross output and employment among the developing countries. The fiscal deficit averaged about 20 percent of GDP (Figure 1.1). In the 1980s, public spending averaged around 50 percent of GDP, while public sector investment on average accounted for between 30 to 40 percent of total annual expenditures by the central government (Figure 1.2). Moreover, during the last two plan periods (FY83-FY92), a relatively large portion (20 to 25 percent) of total public sector investment allocations were directed to the industrial sector, while the private sector was crowded out directly through a system of extensive investment licensing, and indirectly through financial markets. Also, existing regulations prevented private investments in "strategic sectors," such as telecommunications, transport and utilities.

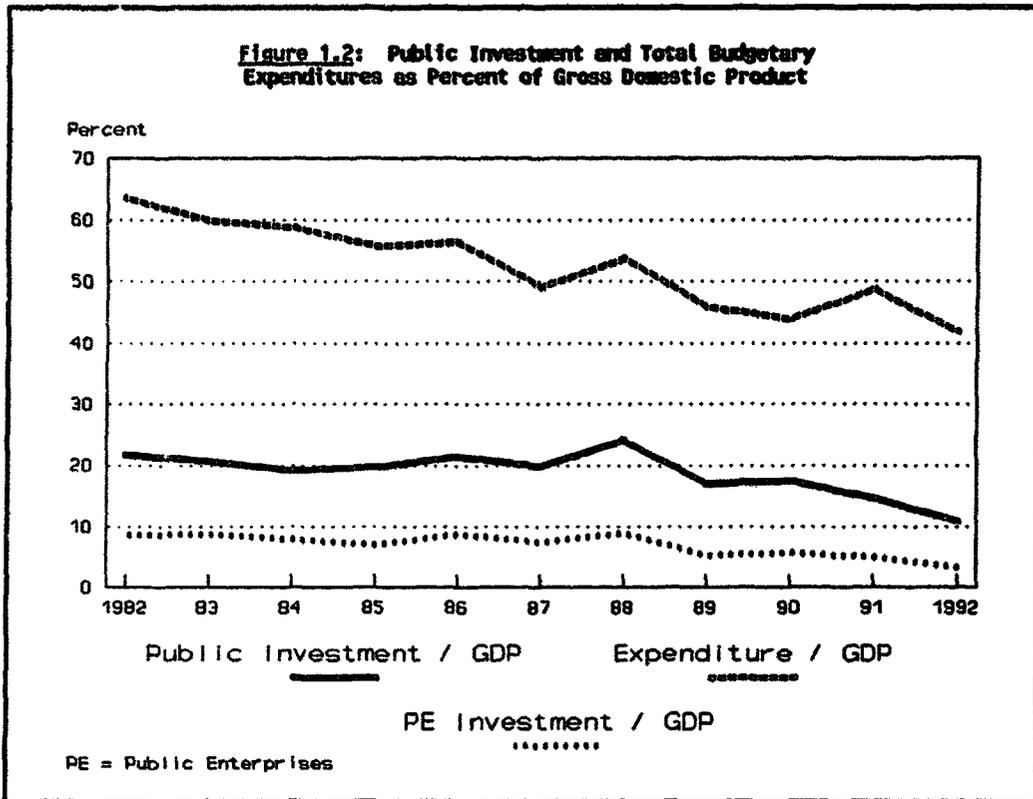
1.3 In 1991 the Government of Egypt embarked upon a comprehensive economic reform and structural adjustment program that is expected to fundamentally alter the role of the public sector in the economy. The size of the fiscal deficit was sharply reduced to 5.0 percent of GDP in FY92 and 4.1 percent of GDP in FY93. The "negative list" for private investment has been reduced and by the end of 1993 all restrictions on private investment are to be removed, except in those areas considered national security. The level of public sector investment has been reduced from an average of more than 17 percent of GDP in the period 1989-90 to 11.4 percent of GDP in FY92 and investments of the public enterprises are no longer part of the budget of the central government.

¹ During the 1980s, the Bank prepared two public investment reviews for Egypt. The first review was conducted in the middle of the First Five-Year Plan, FY83/FY87, and was discussed with the Government in 1985 (The World Bank, Arab Republic of Egypt: Public Sector Investment Review, 1985, Green Cover, Report No. 5269-EGT). The second review was prepared before the start of the Second Five-Year Plan, FY88/FY92, and selected sections of the White Cover draft were discussed with the Government in March 1988. According to 1992 mission interviews with senior officials of the Ministry of Planning and the National Investment Bank (the financial arm of the Ministry of Planning), the Government had found the key recommendations of those earlier reports, which had critically evaluated the Government's policies and investment allocations, helpful, and, to the extent possible, had made use of their main findings.

1.4 The main challenge that the Government faces, and which will have to be addressed under the Third Five-Year Plan, is how to make the necessary adjustments to the public investment program so as to maximize Egypt's growth prospects while minimizing the adverse impact of the adjustment process on the country's vulnerable groups. The challenge is doubly difficult because of the large number of unemployed university and secondary school graduates and the rapid growth of both the population and the labor force; a secular decline in productivity and income growth; and massive environmental problems, which, to a large extent, have been brought about by the public industrial sector.



1.5 It is the World Bank's view that the Government's overall strategy, which is embedded in the first and second phase of its comprehensive Economic Reform and Structural Adjustment Program (ERSAP), will successfully meet the challenge, provided that the reforms are deepened and implemented in a timely manner. Specifically, given the budgetary and external debt constraints that the Government will continue to face over the next few years, the strategy recognizes that the only way for Egypt to achieve a significant, sustained and non-inflationary growth of per capita income over the medium term is by enhancing the role of private sector in the economy and substantially raising the efficiency of public sector investment.



1.6 Therefore, the size, sectoral distribution and efficiency of public sector investment during the Third Five-Year Plan (FY93/FY97) will be of fundamental importance to the economic performance of Egypt over the medium and long term. This is the main reason the World Bank welcomed the opportunity to participate in a policy dialogue with the Government that focused on the public investment program.

B. Long-Term Challenges

1.7 Population. The single most important factor contributing to the very high rate of growth of the labor force in Egypt, and, thus, high unemployment, urban problems, environmental degradation and aggravation of poverty, is the rapid population growth of the last several decades. A continuous decrease in mortality and a much slower decline in birth rates have caused the Egyptian population to more than double between 1960 and 1992, from 26 million to 55 million. Egypt's population is expected to reach 64 million by the year 2000. Rural population growth is far outstripping rural job creation, resulting in large-scale rural-to-urban migration. The urban growth rate is estimated to average 3.3 percent p.a., compared to 1.6 percent p.a. in rural areas. People are crowded into the Nile Delta and Valley (less than 3 percent of the total area) making the area one of the most densely populated in the developing regions. The population has also

become increasingly young as a result of reduced infant mortality and the emigration of adult workers to other Arab countries. However, because of family planning programs and persistent publicity, annual growth rates have started to come down during the past decade (from 2.6 percent p.a. in 1981 to 2.1 percent p.a. in FY93 and to a targeted 2 percent p.a. in FY94). However, the population is still growing by about one million a year, which will continue to strain the country's resources for many years.

1.8 Secular Decline in Productivity. Neither the industrial nor the agricultural sector has performed up to its respective potential in the past. Over the last three decades, the two sectors together have accounted for around 25 percent of GDP growth, compared to an average of 50 percent for developing countries as a group. Economy-wide total factor productivity (TFP), which is an indicator of the overall productive efficiency of an economy, has declined over the last 10 years. It is estimated that the rate of growth of TFP declined from about 1.4 percent p.a. in the 1970s to about -1 percent p.a. in the latter half of the 1980s. This trend is confirmed by the sharp drop in the rate of growth of GDP. The economy experienced a secular, precipitous decline in GDP growth, from about 10.5 percent a year during the economic boom of 1974-80, to 6 percent a year in 1980-85, and to around 3 percent a year since 1985. A major reason for this decline has been an inefficient public sector investment program, which until recently accounted for nearly two thirds of total capital formation, and a relatively low level of private sector investment. According to World Bank estimates, per capita GNP, which had doubled between 1974 and 1985, began to decline from an average of US\$750 p.a. in FY85/FY86 to US\$610 p.a. in FY91.

1.9 Poverty Alleviation. As a result of several years of rapid economic growth in the latter half of the 1970s and the early 1980s, poverty declined markedly. Nevertheless, as of the mid-1980s (before the start of the slowing down of economic growth), poor households still represented between 22 and 30 percent of the total number of households.²

1.10 The social welfare system in place for the last 40 years has helped to reduce the level of poverty in Egypt, resulting in gains in basic social indicators and a reduction in the incidence of poverty. However, there are major deficiencies in the provision of basic infrastructure and social services in nearly every part of the country, especially in the rural areas, and the quality of those services has declined in the face of shrinking budgetary resources. The social programs and transfer mechanisms (e.g., pension schemes for widows, the elderly and the disabled) do not constitute an adequate safety net to protect the most vulnerable from the effects of adjustment, nor are there any employment adjustment services, unemployment benefits or retraining programs to assist either the unemployed or those to be

² World Bank, Egypt: Alleviating Poverty during Structural Adjustment, 1991.

redeployed under the public enterprise (PE) reform and privatization program. As a part of the second phase of its reform program (1993-95), the Government is planning to strengthen the existing social safety net and more effectively target the existing consumer subsidies.

1.11 Unemployment. The rate of open unemployment increased from an average of about 7.5 percent in 1976 to around 12 percent in 1986.³ Given the economic slowdown of the past few years, the unemployment rate is likely to have risen (unofficial estimates put it around 15 percent).⁴ The structure of unemployment is distinctive: 75 percent of the unemployed are new entrants to the labor force, predominantly female, with intermediate or higher educational degrees. The balance of the unemployed already in the labor force are less educated, less skilled and predominantly male.

1.12 In the 1990s, with external migration subsiding, labor force growth is expected to approximate the rate of population growth, adding between 5 to 6 million new entrants into the domestic labor market over the next ten years. In spite of the reforms being introduced, the labor mismatch between the skills of new entrants and the demands of the productive sectors of the economy is likely to persist. Labor market imbalances will remain for the next several years until macroeconomic policy and structural reforms that the Government has been implementing start encouraging the adoption of labor intensive techniques and a more rapid economic growth.

1.13 Environment. The Nile is the country's basic life-sustaining system, providing more than 95 percent of its water requirements. Nile water is getting increasingly polluted by heavy metals from industrial sources with serious consequences for the health and productivity of Egypt's population. Public sector industries have become heavy polluters because of poor maintenance of equipment and careless operating procedures, which reduce efficiency and increase water and air pollution. The air in urban areas, where about half of Egypt's population lives, has become severely polluted. Studies show that 29 percent of children in urban areas such as Helwan suffer from lung diseases, compared with 9 percent in rural areas. Similarly, the level of lead in blood, which has been linked to mental retardation in children, is three times higher in urban areas than in rural areas. Water and air pollution are also beginning to adversely affect Egypt's valuable natural resources and antiquities, which support the important tourism sector.⁵ The Government is increasingly concerned with meeting its environmental responsibilities. Institutions responsible for monitoring emissions and setting quality standards are being

³ According to estimates based on the 1976 and 1986 Census.

⁴ According to the documents of the Third-Five Year Plan, the estimated unemployment rate for FY92 is about 9 percent. It is possible that the estimate does not take into account discouraged workers.

⁵ Government of Arab Republic of Egypt, Environmental Action Plan, May 1992.

established; some of the heaviest industrial polluters in the public sector are being closed down.

C. Economic Reform and Structural Adjustment Program (ERSAP)

1.14 The first phase of the Government's reform program (ERSAP), implemented in the 1991-93 period, focused on: (i.) stabilization to restore macroeconomic balance, supported by an IMF Stand-By Arrangement; (ii.) structural adjustment to improve efficiency while switching towards a private-sector- and export-led growth strategy, assisted by a World Bank Structural Adjustment Loan; and (iii.) social policies to minimize the effect of economic reforms on the poor, supported by the Social Fund for Development (SFD) project financed by IDA and other donors.

1.15 The first phase of the Government's ERSAP aimed at: (i.) curtailing inflation and the current account and budget deficits, and restoring creditworthiness; (ii.) strengthening the solvency, supervision and prudential regulation of banks, and liberalizing the foreign exchange market and the interest rates; (iii.) privatizing and restructuring the PEs, while reforming the regulatory framework to enable PEs to operate as private enterprises; (iv.) liberalizing most prices in the agricultural and manufacturing sectors, while raising prices in transport and energy toward their respective opportunity costs; (v.) phasing out most non-tariff barriers (NTBs) to imports and exports, and reducing import tariff dispersion; (vi.) encouraging private enterprise development by abolishing most investment and production controls and dismantling government monopolies; and (vii.) limiting the scope of the public sector investment program to areas in which public sector has a strong comparative advantage, while raising its productivity through a more optimal sectoral allocation.

1.16 Progress under the First Phase of ERSAP. Over the past two years, the Government of Egypt has succeeded in initiating a major transformation of the economy. In particular, the Government has successfully stabilized the macroeconomic environment through sharp reductions in the budget and current account deficits and in inflation rates. Except for a few items, all prices in the agriculture and industrial sectors have been liberalized. Subsidies, including for energy, have been reduced. A treasury bills (TBs) market has been established; interest rates have been liberalized; and commercial banks' solvency requirements and prudential regulation have been strengthened. The foreign exchange market has been decontrolled, and the exchange rate, unified. A sales tax has been introduced, and there have been some improvements in tax administration. Several major barriers to trade and private sector investment have been removed. The implementation of PE reform has begun. Privatization of PEs, though slower than originally anticipated, has begun to gain momentum.

1.17 Recent Economic Developments. Although the overall rate of economic growth and private investment have remained weak over the last

two years, real output did not decline as had been expected earlier and the agriculture and construction sectors are beginning to show signs of strength. The inflation rate, measured by the CPI, has been reduced from about 21 percent p.a. in FY90 to 11.2 percent p.a. in FY93. The fiscal deficit (excluding investments by PEs) has declined from 16.5 percent of GDP in FY91 to 4.1 percent in FY93. The primary fiscal deficit has swung from a deficit of 13 percent of GDP in FY91 to a surplus of about 6 percent of GDP in FY93.

1.18 The deficit in the current account of the balance of payments (BoP), excluding official transfers, was reduced from US\$3.7 billion in FY90 to US\$0.4 billion in FY93. The overall balance of payments registered surpluses of US\$5.9 billion and US\$3.9 billion in FY92 and FY93, respectively. Aided by large inflows of short-term private capital, the level of international reserves rose to about US\$15 billion (more than 15 months of imports) by end-May 1993. As a result of the generous debt relief granted to Egypt following the Gulf war and under the first stage of the Paris Club debt/debt service reduction (DDSR) agreement (see Chapter II), total external debt declined from US\$51 billion in 1990 to about US\$38.5 billion in mid-1993; the scheduled debt service-to-exports ratio also fell, from 46 percent to 16.6 percent.

1.19 The Second Phase of ERSAP. The objective of the second phase of the Government's reform program is to complete, over the next three years (1993-95), the transition to a decentralized, market-based outward-oriented economy. This phase of the reform program, which is being supported by the IMF with a three-year Extended Arrangement⁶ and by the World Bank with the Structural Adjustment Monitoring Program (SAMP) has the following components: (i.) the consolidation of the macroeconomic program, which entails further reductions in the fiscal deficit and a monetary policy aimed at reducing inflation; (ii.) the reform of the tax system, including corporate and personal income taxes, and the introduction of a value-added tax; (iii.) the removal of restrictions on the foreign exchange system and the discontinuation of the policy of renewing tax holidays; (iv.) the completion of the price liberalization program in the agricultural, energy and industrial sectors and the initiation of a rent decontrol program in the housing sector; (v.) the removal of most non-tariff barriers (NTBs) to trade and a reduction of the maximum tariff rate from 80 percent to 50 percent (and possibly lower) by the end of the program; (vi.) the reform of the public investment program: the redirection of investments toward social sectors (primary education and preventative health care) and infrastructure, complementing private sector investment while maintaining an aggregate level of investment consistent with the overall macroeconomic framework of the reform program; (vii.) the reform of PEs, by implementing restructuring and exit programs, and the acceleration of the privatization program; (viii.) the reform of the regulatory

⁶ The Arrangement, which was approved by the IMF Executive Board on September 20, 1993, is in the amount equivalent to SDR 400 million, or 59 percent of the quota. In view of the country's strong balance of payments position, the Government of Egypt considers the Arrangement precautionary and may not need to draw upon it.

framework; (ix.) the reform of the financial sector, including banking, insurance, the securities market, social insurance and pensions systems, and initiating the privatization of public sector banks and insurance companies; and (x.) the strengthening of the social safety net. The Government also intends to implement a civil service reform program.

D. Public Sector Investment Review

1.20 The main objectives of this report are to: (i.) assess the public investment program within the context of the Third Five-Year Plan, examine its consistency within the overall macroeconomic framework of the ERSAP and analyze budgetary and financing implications of the program;⁷ (ii.) identify and analyze the investment program's priorities and sectoral allocations; and (iii.) assemble a list of new and expansion projects with foreign financing requirements. The Bank's final recommendations have been based on sectoral priorities and (to the extent possible) on the estimated economic and financial rates of return for major projects and programs in the plan. In pursuing these objectives, two sets of issues relating to data and to the planning process constrained the mission's fieldwork.

1.21 Data Issues. The historical time series for Egypt's National Income Accounts (NIA) statistics is being revised. According to the Ministry of Planning (MOP), the revisions are being undertaken because private sector activity in the economy was seriously underestimated in the old series. The preliminary estimates of the revised series, which have been used by MOP as the basis for the Third Plan's macroeconomic projections, indicate that in several sectors the level of private investment has nearly doubled in comparison to the previous time series, while the overall level of economic activity as measured by GDP in current prices has been revised upward by about 15 percent.⁸ The Government, with technical assistance from the World Bank, intends to further improve the quality of the NIA statistics.

1.22 The Planning Process. The allocation of funds for public sector investments in Egypt involves a complex, iterative process. Before being included in the five-year plan, a detailed listing of proposed projects and programs, including cost estimates and possible sources of funding, is presented to MOP. These projects/programs are then consolidated by MOP and pooled to fit within overall investment budget constraints.

⁷ In its field work, the mission conducted a review of all of the major sectors of the Egyptian economy, with the exception of the industrial sector, which, because of the ongoing reforms, is experiencing a major transformation. The mission did not conduct a review of the investment proposals of those public sector enterprises that fall under Law 203 since their investments will be excluded from the budget of the central government starting in FY93. Nevertheless, some of the key issues confronting the industrial sector, as well as the public enterprises, are discussed in Chapters III and XI, below.

⁸ Although the Bank has recently received the preliminary estimates of the revised series for FY87-FY92, it has not yet been provided with the technical background study that led to these revisions.

1.23 Given the crucial importance of raising the productivity of public investment over the medium term, the merits of each public sector investment project and its priority within the context of limited resources, must be demonstrated. In the context of the Third Five-Year Plan, for large projects with significant foreign financing requirements such as those in the agriculture, power and oil and gas sectors, planning units in the respective ministries or agencies have prepared detailed studies (some conducted by donors), in many cases including estimates for economic and/or financial rates of return. However, many sector ministries, particularly for projects in the health, education, transport and urban sectors, appear to be relying on "feasibility studies" that are mainly descriptive in nature. The institutional capacity for conducting feasibility analysis, particularly in these project areas, needs to be strengthened considerably.

E. Public Investment in the Third Five-Year Plan

1.24 In the past, planned investments by the public sector in Egypt exceeded available finance and implementation capacity. Typically, resources were thinly spread over a large number of projects. On average, about 40 percent of total investment expenditures by the public sector during the First and the Second Five-Year Plans were devoted to the completion of carry-over projects from the preceding plan period. The sectoral ministries' initial investment requests ("wish lists") for the Third Five-Year Plan amounted to some 4,000 projects, with an estimated financing need of about LE 180 billion (in constant 1991/92 prices). However, given the budgetary constraints, MOP, in its preliminary round of evaluations, substantially cut back the total amount of investments requested to about LE 71 billion (including about LE 9.8 billion for Law 203 public sector enterprises). In addition, a number of projects prepared by the ministries, totalling LE 10 billion, were set aside as "potentially private sector" investments, with a provision that if they were not taken up by the private sector they could be implemented by the public sector (see Chapter II).⁹

1.25 The Final Investment Allocations. The revised sum for public sector investments during the Third Five-Year Plan is about LE 80 billion, up from LE 71 billion in the preliminary allocations of the Third Plan prepared in February 1992. LE 9.1 billion is "targeted" for those public sector enterprises subject to Law 203.¹⁰ In addition, investment allocations for those projects falling under the category of

⁹ The total amount of planned investments, as well as sectoral allocations, were then changed, following discussions in the Cabinet (April 1992) and the People's Assembly (May 1992). Although the Bank mission did receive detailed lists of proposed projects/programs from most of the sector ministries and a number of economic and service authorities in February/March 1992, the detailed list of approved projects was not made available to the Bank until June 1992.

¹⁰ Starting in FY92, those public sector enterprises under Law 203/1991 are independent of the central government, and their investments are no longer financed through the budget. The 314 affiliated companies that fall under Law 203 have been given full autonomy to operate as businesses and are now under the authority of the 17 holding companies responsible for managing the state's portfolio of assets. Therefore, the Third Plan allocations for these enterprises are, according to MOP, only meant as "indicative targets," and may differ widely from actual investment plans.

"potentially private sector" have been revised to LE 4.1 billion, down from LE 10 billion in the preliminary plan.¹¹ For the latter category, according to the final plan document, the difference of about LE 6 billion (composed mainly of investment projects in the oil and gas and tourism sectors) is now "targeted" outright for private sector investment. Of the 3,166 investment projects carried out by central and local government, economic and service authorities and non-Law 203 PEs under the Third Plan, only 136 are projects each requiring investments of LE 100 million or higher; these represent 54.6 percent of total public sector investments in the Third Plan.¹²

1.26 Finally, some LE 70 billion is "targeted" for private sector investment, including the above-mentioned LE 6 billion.¹³ Therefore, total investments for the Third Five-Year Plan are projected at LE 154 billion (in constant 1991/92 prices), or about 18 percent of aggregate real GDP during the plan period. Out of the LE 70.8 billion allocated to investments by the central and local governments, service and economic authorities and non-Law 203 public enterprises, 31 percent is for the completion of ongoing projects, 14 percent for rehabilitation and renovation and about 55 percent for new projects or the expansion of existing capacity (see Table 1.1 and Annex Table 1.5 in Vol. II).

1.27 Financing of the Total Investment Program. The Third Five-Year Plan aims at financing 86 percent of its investments (i.e., including private investments) from domestic savings, with external sources of financing being limited to only 14 percent. The main categories for domestic and foreign sources are as follows: NIB, LE 37 billion (24 percent); self-financing (from retained earnings or savings), LE 59 billion (38.3 percent); foreign grants, LE 7.5 billion (4.9 percent); foreign loans and credits, LE 14.5 billion (9.4 percent); and other unspecified sources (primarily from private savings, including private assets abroad), LE 36 billion (23.4 percent).

1.28 Financing of Investments by Private and Public Enterprises. According to Third Plan documents, investments by central and local government, service authorities and non-Law 203 PEs (which together amount to LE 70.8 billion), would be financed by foreign grants (LE 7.5 billion), foreign loans and credits (LE 12.5 billion) and a combination self-financing and NIB loans, amounting to LE 50.8 billion. The remaining investments (i.e., private sector (LE 70 billion), Law 203 PEs

¹¹ According to MOP and NIB officials, these include a number of projects in the industrial and energy sectors that the Government is willing to make available to the private sector. Apparently, the feasibility studies have been conducted and found to be "highly profitable." The Bank has not received any information concerning these projects.

¹² 270 projects, representing 67.5 percent of total public sector Third Plan investment, are LE 50 million or larger.

¹³ According to MOP and NIB, their projections for investment and production by the private sector during the Third Five-Year Plan are based on the performance of the private sector during the Second Five-Year Plan as well as on data available from the General Authority for Investment and Free Zones (GAFI) for some 1189 joint-venture (Law 230) companies, and/or the General Organization for Industrialization (GOFI) and the Central Agency for Public Mobilization and Statistics (CAPMAS) for other categories of private investment.

**Table 1.1: Public Sector Investments Under the Third Five-Year Plan
by Type of Investment, Selected Ministries,¹ 1992-97**

	Type of Investment (Percentage Share in Total)			Cost of Completion of Ongoing Projects (LE millions) (1991/92 prices)
	Replacement/ Renovation	Project Completion	Expansion/ New	
Agriculture	2.8	42.7	54.5	1,071.0
Land Reclamation	0.7	37.0	62.2	954.6
Public Works and Water Resources	19.4	31.1	49.5	1,497.1
Petroleum and Mineral Resources	15.6	20.5	63.9	938.1
Electricity and Power	10.7	20.0	69.4	3,254.3
Transport	34.6	8.6	56.8	375.9
Maritime Transport	19.5	5.4	75.1	21.3
Suez Canal Authority	69.7	0.0	30.3	0.0
Civil Aviation	29.2	49.1	21.7	573.0
Communications	33.6	27.8	38.6	431.1
Health	14.7	60.4	24.9	1,071.0
Education (Basic)	11.4	2.6	85.9	104.0
Higher Education	14.4	37.2	48.3	1,168.0
Housing and Utilities	7.3	55.2	37.5	3,703.4
Development and New Communities ²	0.3	66.3	33.5	1,391.7
New Cities ³	0.0	61.1	38.9	1,447.8
Industry ⁴	8.3	87.3	4.4	1,041.1
Military Industry ⁵	29.1	47.7	23.1	646.5
Other Ministries	16.9	26.1	57.0	2,463.9
All Sectors⁶	14.2	31.3	54.5	22,153.9

Sources: Ministry of Planning and staff calculations.

Note: See Annex Table 1.5 (Vol. II) for detailed breakdowns in investments by ministries. The above figures are based on totals for central and local government, service authorities, and non-Law 203 enterprises. The above classification scheme, which corresponds to MOP project numbering, does not distinguish between expansion of existing projects and new projects. Many projects termed "expansion" for Plan purposes are, according to MOP officials, are, to some degree, project completion. This investment amount, however, is not included in the amount directed towards completion of ongoing projects. Hence, the total percentage for project completion reported above, 31.3 percent, may understate the amount of funds allocated towards project completion.

¹ Excluding Law 203 public enterprises.

² Ministry of Construction.

³ Under the Council of Ministers.

⁴ Excluding industrial public enterprises.

⁵ Including civilian production.

⁶ Based on MOP's planned total public sector investments (excluding Law 203 enterprises) of LE 70.8 billion over the period FY93/FY97.

(LE 9.1 billion), and the category "potential private sector" (LE 4.1 billion)) would, therefore, have to be financed by only LE 2 billion in foreign loans and credits and a staggering sum of LE 81 billion in self-finance and "unspecified sources." Presumably, the Egyptian planners are assuming that private sector would finance its entire investments over the next five years from retained earnings, assets abroad and funds

made available by foreign investors. At the present level of exchange rate (LE/US\$ 3.3, which is the assumed exchange rate during the Third Plan period), this would imply about US\$4.2 billion in private sector investment per year without resorting to borrowing. It should be noted that MOP assumes that of this amount, about US\$1 billion would be invested by foreign partners in the oil sector. Moreover, it is also assumed that US\$1 billion is invested by the private sector in the housing sector. This investment is assumed to be complemented by soft loans provided by the Government in the range of US\$0.3 billion p.a. The roughly US\$2.2 billion investments p.a. remaining, which is assumed to be invested by the private sector primarily in industry, tourism, transportation and agriculture, is an amount the Ministry of Planning believes realistic for being self-financed, given the resources available to the private sector through its bank savings, expatriates' remittances and retained earnings.

1.29 Law 203 PEs are assumed to finance their "target" investment of LE 1.8 billion p.a. mainly from retained earnings and a small amount of foreign borrowing. Some may view this to be an optimistic assumption, since many PEs are currently facing financial problems while undergoing a period of transition. These circumstances notwithstanding, MOP accounts show that PE self-finance exceeded the projected figure of LE 1.4 billion for FY93.

F. Fiscal and Public Investment Targets

1.30 During the preparation of the Bank's Structural Adjustment Loan (SAL-I) and the IMF Stand-By Arrangement for Egypt under the first phase of the Government's reform program, the persistent, massive fiscal deficit was clearly identified as a major area in which a substantial adjustment would be required. In accordance with the SAL-I Letter of Development Policy (May 1991), the Government had agreed to take steps to sharply reduce the budget deficit from over 20 percent of GDP in FY91 to no more than 10.5 percent in FY92 and to 6.5 percent in FY93. Continuous annual reductions of at least 1 percent of GDP are envisioned thereafter, until the deficit is completely eliminated. These deficit reductions would be achieved through a combination of increased revenues and reduced expenditures.

1.31 The 1991 Letter of Development Policy also emphasized that, on the expenditure side, continuing restraint would be needed in: (i.) wage increases; (ii.) subsidies to public authorities and consumers, through further increases in prices; and (iii.) public investments, through stricter prioritization and a shift to the private sector. With the aim of reducing the budget deficit and the role of the public sector in the economy, the ratio of public investments to GDP was targeted by the Government to decline from more than 12 percent in FY91 to less than 8.0 percent in the medium term.

1.32 Recent Budgetary Developments. The final budget outturn for FY92 indicates an overall deficit of 6.4 percent of GDP, compared to an

original target of 10.5 percent of GDP.¹⁴ In addition, the removal of the investment expenditures of Law 203 public enterprises (which amount to between 1.5 and 2 percent of GDP) from the budget (starting in FY92) resulted in an adjusted deficit target of about 3.5 percent of GDP for FY93, compared to the final outcome for FY93 of 4.1 percent. Assuming that the stabilization program remains on track, the new, adjusted path for fiscal deficit targets indicates that the overall budget deficit would be eliminated by FY97. Accordingly, the adjusted path for public investment targets (i.e., excluding public enterprises from the budget) indicates that the ratio of public investment to GDP should decline from around 11 percent in FY92 to an average of about 7.5 percent over the medium term. The Government's budgetary allocations for capital expenditures for FY94, as well as those planned for FY95, are consistent with this target.

G. Guidelines for Sectoral Allocations and Project Selection

1.33 Although the level of public investment affects the level of economic activity, it is the sectoral distribution of investment and the quality of projects within each sector, that influences the rate of growth of economic activity. In order to maximize the beneficial impact of the public investment program on medium-term economic growth, in the absence of detailed, rigorous feasibility studies for all projects within the Third Plan, the Bank mission made the following general recommendations to the Government concerning the sectoral distribution of public investment and the choice of projects within each sector: (i.) concentrate scarce resources (financial, managerial and material) on fewer projects, and only those with very high priority and high economic and social rates of return; and, in order to develop a more optimal public investment program over the medium term, (ii.) introduce a more discriminating screening criteria for project selection in which emphasis is given to the completion of high priority, ongoing projects rather than the launching of new investments.

1.34 In terms of project selection, the public sector should restrict itself to three areas: (i.) investments with large externalities and projects in which the private sector would normally underinvest, such as basic education, research and preventive health care; (ii.) catalytic investments that attract or "crowd-in" private investment, such as the provision of serviced land (for housing and industry), roads, basic telecommunications infrastructure, etc.; and (iii.) equity and long-term, broad development investments that are not normally under the aegis of the private sector, such as problems of regional imbalance, poverty and environmental degradation.

1.35 Regarding project design, public investment should recognize the tight budget constraint that characterizes the environment of the Third Five-Year Plan. This constraint makes it necessary to maximize

¹⁴ Adjustments to the earlier target of 10.5 percent of GDP for FY92 reflect a host of factors, such as the Paris Club debt and debt service relief granted to Egypt in May 1991 and shortfalls in programmed expenditures for the Social Fund and in restructuring expenditures for public enterprises.

the scope for private sector participation in the financing and implementation of projects in all sectors, to explore ways to enhance the project's financial sustainability, particularly by addressing the issue of cost recovery, and to avoid delays and consequent reductions in returns by considering the investing institution's capacity for project implementation within the proposed time frame. Allocations of public sector investment by broad sectors during the Third Five-Year Plan are presented in Tables 1.2 and 1.3. A summary of the World Bank's recommendations are presented below. (For a full discussion of allocations by sector, see Chapters V through XI, below.)

Table 1.2: Egypt: Sectoral Allocations of Public Investment in the Second and Third Five-Year Plans (LE billions)

Sector	Second Plan (FY88/FY92)		Third Plan (FY93/FY97)			
	Actual ¹	Percent	Bank ²	Percent	MOP	Percent
Education	2.5	3.81%	7.6	11.57%	7.0	9.89%
Health	1.6	2.44%	2.3	3.50%	1.8	2.54%
Agriculture	4.4	6.70%	9.7	14.76%	9.6	13.56%
Housing and Urban Development	9.3	14.16%	12.7	19.33%	13.2	18.64%
Transport and Communications	16.5	25.11%	9.8	14.92%	9.3	13.14%
Electricity and Energy	12.8	19.48%	15.7	23.90%	17.7	25.00%
Oil and Gas	1.4	2.10%	1.5	2.28%	2.8	3.95%
Total (Reviewed Sectors)	48.4	73.67%	59.1	89.95%	61.3	86.58%
Industry and Mining	13.2	20.09%	n.r.	1.83%	1.2	1.69%
Others	4.1	6.24%	n.r.	8.22%	8.3	11.72%
Grand Total³	65.7	100.00%	65.7	100.00%	70.8	100.00%
Memo item: Total as % of GDP	19.3		7.5 ^a		9.0	

Source: MOP and World Bank staff estimates.

n.r.: Not reviewed by Bank.

¹ In current prices.

² In constant 1991/92 prices.

³ Total for the Second Five-Year Plan includes Law 203 public enterprises, which are excluded from the Third Five-Year Plan total. The total for the Bank assumes LE 1.2 billion and LE 5.4 billion for Industry and Mining and "Others", respectively, which were not reviewed by the mission. These figures, which are based on MOP's preliminary proposals, are not to be interpreted as World Bank recommendations.

^a Includes only reviewed sectors (LE 59.1 billion).

H. SUMMARY OF RECOMMENDATIONS

Macroeconomic Framework

1.36 Macroeconomic Framework. Three major conclusions emerge from an analysis of the macroeconomic framework of the Third Plan: First, the targeted growth rate of GDP under the Third Plan (5.1 percent p.a. in the 1993-97 period) is fairly optimistic given the current slowdown in activity and the fact that the economy is likely to go through a transition phase for a few more years. Although optimistic, the targets are not, however, unrealistic. Accelerating and deepening

the reforms, as envisioned by the Government under the second phase of its reform program, should lead to a significant and sustained private sector response, which, in turn, should result in an acceleration of economic growth over the medium term. What is less clear is the fact that the Third Plan assumes that the GDP growth target can be achieved with a fairly low investment-to-GDP ratio (para. 1.38, below).

1.37 Second, establishing the credibility of the reform program is crucial for the emergence of a rapid and strong supply response. The Government must aim at increasing, as much as possible, the level of confidence of the private sector. The Third Five-Year Plan document goes a long way towards meeting this goal. However, it is possible that with respect to some areas, it could be sending wrong signals. For example, the Third Plan details the "projected" private investments by sector of activity and excludes the private sector participation from some key sectors (e.g., utilities and telecommunications); this could slow down the supply response.

1.38 Third, to attain the targeted growth rates for the Egyptian economy, the aggregate investment-to-GDP ratio should reach 20 percent or more rather than at the projected 17.5 percent of GDP. Given the restricted role of the public sector, this increase in the investment rate must come from the private sector. In particular, raising resources does not seem to be a major constraint on private investment if the fiscal retrenchment is pursued and the debt reduction agreement is fully implemented. Indeed, capital inflows, workers' remittances, foreign direct investment and bank credits are likely to be available as long as profitable investment opportunities exist. Thus, rather than financing, the real constraint in the medium term is likely to lie in the perceived profitability of investment in Egypt by the private sector. This points to the importance of a continuation of prudent monetary policy and tight fiscal policy.

Sectoral Investments

1.39 Sectoral Allocation of Public Investment. Productivity increases in the use of all factors of production are essential. Thus, the optimal allocation of scarce resources among sectors, so as to achieve the highest possible economic and social rates of return on public investment, must be pursued. As discussed earlier, this requires that high priority be given to those areas that present large externalities and where the private sector is likely to underinvest, such as basic education, preventive health care and research; and that basic infrastructure be provided so as to complement private sector investment. Public sector investment should be withdrawn from commercial and industrial activities.

1.40 Although the final MOP allocations for the Third Five-Year Plan exhibit a significant improvement in both inter- and intra-sectoral allocations of public investments compared to those in the Second Five-Year Plan, there is still room for further improvement. As indicated in the sectoral summaries below, final allocations within some of the broad

**Table 1.3: Egypt: Sectoral Allocation of Public Investment
During the Third Five-Year Plan
(LE billions; 1991/92 constant prices)**

	Preliminary Plan				Recommendation		Final Plan	
	Request	Percent	MOP	Percent	Bank	Percent	MOP	Percent
Education	7.1	3.94%	3.0	4.88%	4.5	6.85%	3.9	5.51%
Higher Education	6.9	3.83%	3.1	5.04%	3.1	4.72%	3.1	4.38%
<u>Subtotal</u>	14.0	7.78%	6.1	9.92%	7.6	11.57%	7.0	9.89%
Health	2.3	1.28%	1.5	2.44%	2.3	3.50%	1.8	2.54%
Agriculture	3.6	2.00%	1.9	3.09%	2.6	3.96%	2.2	3.11%
Land Reclamation	4.6	2.56%	2.8	4.55%	2.3	3.50%	2.6	3.67%
Public Works and Water Resources	5.1	2.83%	3.0	4.88%	4.0	6.09%	3.6	5.08%
North Sinai	5.0	2.78%	1.9	3.09%	0.8	1.22%	1.2	1.69%
<u>Subtotal</u>	18.3	10.17%	9.6	15.61%	9.7	14.76%	9.6	13.56%
Housing and Public Utilities	10.4	5.78%	6.1	9.92%	7.4	11.26%	7.1	10.03%
Development and New Communities	4.0	2.22%	2.1	3.41%	1.5	2.28%	2.1	2.97%
New Cities	4.2	2.33%	2.3	3.74%	0.9	1.37%	2.1	2.97%
Cairo Sewerage Authority	1.5	0.83%	0.6	0.98%	1.1	1.67%	0.7	0.99%
Alexandria Sewerage Authority	0.8	0.44%	0.3	0.49%	0.5	0.76%	0.3	0.42%
Cairo Water Authority	1.7	0.94%	0.6	0.98%	1.1	1.67%	0.6	0.85%
Alexandria Water Authority	0.5	0.28%	0.2	0.33%	0.2	0.30%	0.2	0.28%
<u>Subtotal</u>	23.1	12.83%	12.2	19.84%	12.7	19.33%	13.2	18.64%
Land Transportation	5.8	3.22%	3.3	5.37%	3.5	5.33%	4.2	5.93%
Maritime Transport	1.5	0.83%	0.8	1.30%	0.8	1.22%	0.8	1.13%
Civil Aviation	3.8	2.11%	1.2	1.95%	1.1	1.67%	1.2	1.69%
Suez Canal	4.2	2.33%	0.5	0.81%	0.5	0.76%	0.5	0.71%
Alexandria and Cairo Transportation Auths.	0.8	0.44%	0.8	1.30%	0.5	0.76%	0.8	1.13%
Alexandria and Cairo Road Authorities	1.1	0.61%	0.3	0.49%	0.9	1.37%	0.3	0.42%
Communications	4.8	2.67%	1.5	2.44%	2.5	3.81%	1.5	2.12%
<u>Subtotal</u>	22.0	12.22%	8.4	13.66%	9.8	14.92%	9.3	13.14%
Electricity and Energy ¹	35.5	19.72%	16.0	26.02%	15.7	23.90%	17.7	25.00%
Oil and Gas	10.8	6.00%	1.1	1.79%	1.5	2.28%	2.8	3.95%
<u>Subtotal</u>	46.3	25.72%	17.1	27.80%	17.2	26.18%	20.5	28.95%
Total (Reviewed Sectors)	126.0	70.00%	54.9	89.27%	59.1	89.95%	61.3	86.58%
Industry and Mining	24.7	13.72%	1.2	1.95%	n.r.	--	1.2	1.69%
Others	29.2	16.22%	5.4	8.78%	n.r.	--	8.3	11.72%
Grand Total²	180.0	100.00%	61.5	100.00%	65.7	100.00%	70.8	100.00%

Source: Sector ministries, economic and service authorities, MOP, NIB and World Bank staff estimates. For a complete listing of investments by ministries, see Annex Table 1.5 (Vol. II).

n.r.: Not reviewed by the Bank.

¹ Excluding contingencies, the requested amount (the first column) is LE 21.4 billion.

² The Third Five-Year Plan grand totals for MOP and the Bank exclude proposed investments by Law 203 public enterprises. The Bank mission did not review the proposed investments for the Ministry of Industry or the public enterprises.

sectors still indicate deviation from what could be considered an optimal allocation. Furthermore, intersectoral adjustments are also recommended, primarily transferring resources away from certain projects in the energy sector and those listed under "Others"¹⁵ in Table 1.2 to telecommunications and urban development (water and sewerage) infrastructure, as well as to the social sectors. Table 1.3 presents a detailed breakdown of sectoral and intrasectoral allocations as proposed by individual ministries and as presented in the final Third Plan document, as well as Bank recommended levels.

1.41 The Bank has recently been provided with anticipated revisions to the planned annual investment levels by ministry and by economic sector for the first three years of the Plan. These revisions stem from the attempt by the Government to make its investment program more consistent with the financing outlook as well as with the macroeconomic framework of the second phase of its reform program. Sectoral reductions (Tables 1.4) appear to be broadly consistent with World Bank recommendations regarding sectoral allotments (see below). These changes, which appear to be fairly minor, are discussed on a sector-by-sector basis in Chapters V to XI.

1.42 Environment. As mentioned earlier, the health and productivity of Egypt's children are threatened by the severe pollution of urban air and Nile water. Recognizing this, the Government has developed the "Egyptian Environmental Action Plan." The plan, completed in 1992, gives the highest priority to reducing industrial pollution through improved operation and maintenance of public sector enterprises, the main polluters of the Egyptian environment. Following improvements in institutional structure and the incentive framework, these industries will require investments for modernization of industrial processes that increase industrial efficiency while reducing pollution. The planning process for new investments must integrate environmental impact assessment into the evaluation of options and investments. Investments in municipal infrastructure for the safe disposal of solid waste and the treatment of wastewater are needed and are addressed in the chapter on Urban Development. Other specific policies and investments are also dealt with in the chapters on Agriculture and Transport.

1.43 Strengthening the Institutional Process. In line with the changing structure of ownership in the economy, the responsibilities and nature of sector ministries will have to undergo a substantial change. Specifically, to insure the success of the reform program over the longer term, the sectoral ministries should devote most of their resources to the preparation of sectoral strategies and policy planning rather than be directly involved in production activities, which should, to an increasing extent, be relinquished to the private sector. Furthermore, the sector ministries should substantially improve the level and quality of coordination among themselves, as well as with MOP, and bring an end to the massive fragmentation in both decision-making and resource allocations that has afflicted the day-to-day operations of

¹⁵ This is a category that includes a large number of ministries, including Military Production.

Table 1.4: Revised Sectoral Allocations of Public Investment, 1993-95
(billion LE)

	1992/93		1993/94		1994/95	
	Final Plan	Post-Reduction	Final Plan	Post-Reduction	Final Plan	Post-Reduction
Productive Sectors						
Agriculture	0.9	0.8	1.2	1.0	1.3	1.1
Agriculture	0.2	0.2	0.3	0.3	0.3	0.3
Land Reclamation	0.2	0.2	0.4	0.3	0.4	0.3
Public Works	0.5	0.5	0.5	0.4	0.6	0.5
Manufacturing and Mining	0.2	0.2	0.2	0.2	0.2	0.2
Petroleum	0.1	0.1	0.2	0.2	0.1	0.1
Electricity	2.1	2.0	2.5	2.3	2.5	2.3
Contracting	0.0	0.0	0.0	0.0	0.0	0.0
<u>Subtotal</u>	3.3	3.1	4.1	3.7	4.1	3.7
Productive Services						
Transport, Communication, Storage	2.1	2.1	2.3	2.1	2.4	2.2
Internal Transport	1.2	1.2	1.3	1.2	1.4	1.3
Maritime & Air Transport	0.2	0.2	0.3	0.3	0.3	0.3
Communications	0.3	0.3	0.3	0.3	0.3	0.3
Other	0.4	0.4	0.4	0.4	0.4	0.4
Suez Canal	0.1	0.1	0.1	0.1	0.1	0.1
Trade, Finance, Tourism	0.0	0.0	0.0	0.0	0.0	0.0
<u>Subtotal</u>	2.2	2.2	2.4	2.2	2.5	2.3
Social Services						
Housing	0.1	0.1	0.1	0.1	0.1	0.1
Public Utilities	1.8	1.7	2.1	2.0	2.2	2.1
Health Services	0.5	0.5	0.5	0.5	0.6	0.6
Preventive	0.2	0.2	0.2	0.2	0.3	0.3
Non-Preventive	0.3	0.3	0.3	0.3	0.3	0.3
Educational Services	1.2	1.2	1.1	1.1	1.3	1.2
Basic Education	0.3	0.3	0.3	0.3	0.4	0.4
Secondary Education	0.5	0.5	0.4	0.4	0.5	0.5
University Education	0.4	0.4	0.4	0.4	0.4	0.4
Other Services	0.9	0.9	1.0	0.9	0.9	0.8
<u>Subtotal</u>	4.5	4.4	4.8	4.6	5.1	4.8
Grand Total	10.0	9.6	11.3	10.5	11.7	10.8

Source: Ministry of Planning and National Investment Bank, May/June 1993.

Note: For detailed ministerial allocations and reductions, see Table II-5 in Vol. II.

the Government. MOP itself needs to undergo a radical change in its procedures. Specifically, the quality of policy planning, research and statistical collection and analysis will have to improve substantially to keep up with the requirements of the new economic environment. Finally, it is essential that the sector ministries take the necessary steps to improve their capacity to plan, prepare and execute projects/programs. Specific recommendations for institutional reforms and for enhancing the project implementation capacity of each of the key ministries are provided in Chapters V through XI. Recommendations concerning the sectoral allocation of public investment are as follows:

Agriculture, Land Reclamation, Irrigation and Drainage

1.44 The overall effect of the changes proposed in public investment in the agriculture sector would increase the allocations for

the sector as a whole only marginally (from LE 9,599 million to LE 9,759). These changes include: reallocating from horizontal to vertical expansion; deferring the second and third phases of the North Sinai Project; deferring new land reclamation projects; increasing the allocations for canal system maintenance and drainage; increasing the allocations for the Agricultural Research Center; and introducing water charges in irrigation improvement areas (Chapter V).

1.45 An important set of recommendations relates to cost recovery of land reclamation and drainage. The ultimate objective should be the full recovery of investment costs of land reclamation. An on-going study on the costs of the irrigation and drainage system should provide the basis for introducing irrigation/drainage service fees. While the recovery of operations and maintenance costs is vital, the service fee should ultimately include investment costs.

1.46 Until recently almost all project administration and implementation has been carried out by public sector agencies, either ministries or departments of ministries, or by public sector companies of various kinds. Thus, there were no effective incentives or rewards for good performance; nor were there penalties for bad performance. This is a problem common to all the agencies in the sector. In order to avoid poorly planned projects, cost overruns, implementation delays and the selection of uneconomic projects, the capacity for project planning needs to be strengthened and the planning process improved.

1.47 There is another dimension to this problem, particularly important in the agricultural sector: the relationship between the recurrent and plan budgets. Some activities, such as agricultural extension, are almost entirely financed out of the recurrent budget. The critical importance of improving extension in meeting agricultural production targets is, thus, not reflected in the plan. The plan budget is also frequently used to make up shortages in the recurrent budget, either on an ad hoc basis (by transferring plan funds to, say, the maintenance costs of a pumping station) or on a more deliberate basis by "projectizing", for instance, maintenance costs to make up for past neglect, itself an expensive way of proceeding. In addition, the plan budget is often used to supplement recurrent salary costs by the inclusion in plan project costs of incentive payments to staff, a short-term remedy not sustainable after the project is completed.

1.48 By amalgamating the finance and planning functions of each ministry, total expenditure needs of the sector can be looked at as a whole. This would, however, require fundamental changes in the way the Government finances the ministries, with some resources coming from the Ministry of Finance on an annual basis, and some coming from MOP on a longer-term basis.

Petroleum, Electricity and Power

1.49 The changes proposed by the World Bank in public sector investment in the energy sector would: defer the proposed construction

of the 600-mw El-Dabba nuclear power plant and the Naga Hammadi hydropower plant beyond the Third Five-Year Plan; delay the Egyptian Electricity Authority (EEA) thermal power plants at Ayoun Mousa and El-Arish (North Sinai); reduce the research budget of the Hydropower Plants Executive Authority; increase the efficiency of energy production; and consider the use of combined-cycle technology in the next power plant to be constructed. Apart from gas distribution, all other investments in the gas and oil subsectors (i.e., petrochemicals, LPG, etc.) should be undertaken by the private sector (Chapter VI).

1.50 The strategic goals encompassed in the Third Five-Year Plan include energy conservation, through the adoption of economic pricing, and improved efficiency, which would be accomplished by using natural gas and other indigenous energy sources. This is a sound objective and is in line with Egypt's need to improve the efficiency of energy use. There are, however, several areas in which the Third Five-Year Plan could be improved in terms of rationalizing the planned investment expenditures, enhancing the role of the private sector and adopting/ implementing policies that would enable the country to use investment resources more efficiently in the medium to long term.

1.51 Total public investment expenditures (LE 20.5 billion as proposed by MOP) could be reduced to about LE 17.2 billion by eliminating or postponing several projects in the power subsector that are not essential to meet demand in the mid- to late-1990s. Furthermore, the substantial resources required in this highly capital-intensive industry could be mobilized through private sector participation in the generation and distribution of electricity, as well as in the petrochemical and oil exploration and refining industries. The Government should amend the electricity laws that regulate the sector to permit private investors to undertake electricity generation and distribution projects; grant autonomy for pricing and investment decisions to sector authorities; accelerate the rate at which electricity prices are raised to economic levels; improve financial and cost accounting systems and provide information on costs to potential investors; and ease the bureaucratic requirements for projects established by private investors.

1.52 The Government should then consider implementing the following policies/actions to improve sector efficiency and reduce investment requirements in the medium to long term: (i.) reduce line losses and rehabilitate electrical networks, thus enabling a given level of demand to be met with lower energy generation; (ii.) raise domestic energy prices to discourage excessive levels of energy consumption; (iii.) increase the efficiency of energy production by using combined-cycle technology in future power plants if adequate natural gas resources can be made available; (iv.) remove electricity subsidies to energy-intensive industries, such as fertilizer and aluminum to encourage conservation measures; (v.) encourage private sector projects for the modernization of refineries so as to achieve a substantial shift from fuel oil to middle distillates and upgrade individual product specifications for exports as natural gas is increasingly substituted for other fuels in the domestic market; and, (vi.) pay increasing

attention to environmental issues by carefully designing power plants and locating them away from densely populated areas and by increasing the use of environmentally clean fuels such as natural gas.

Urban Development

1.53 The changes proposed in public sector investment in the urban development sector would: concentrate investments in areas near existing population centers and on the completion of works already started; evaluate the success of the new cities program and cease investments in the "third generation" of new cities; reduce public investment in housing for upper- and middle-income groups; improve the environment for private sector participation; and emphasize maintenance and management in the water and sewerage subsectors (Chapter VII).

1.54 It is essential to concentrate investment funds in the most viable regional areas: Cairo, the Red Sea and the Sinai, as well as to complete several small, ongoing New Communities Development Agency (NCDA) projects. Investments in remote development areas are not top priority: the potential for these areas to contribute to development and absorb large numbers of people is minimal due to constraints, especially shortages of water. Moreover, the per capita cost for such development is high compared to the cost in more densely populated regions.

1.55 New Communities. The Cairo ring road, NCDA's priority project in the greater Cairo area, should be completed as it will play a key role in diverting transit traffic from the Nile corniche road and parts of congested downtown Cairo. Nevertheless, it is essential to have a complete study of the ring road and the projected traffic flow and counts. The study should evaluate the traffic patterns, the cost, expected rate of returns, as well as the environmental impact of the road.¹⁶ In order to protect surrounding areas from haphazard encroachment, the study should also assess the impact of the road on the adjacent agricultural land, which would inevitably be lost to urban development after the road was completed, even though less than 10 percent of the road's total length passes through agricultural land. It is provisionally recommended that the main projects in the Sinai and Red Sea regions be completed. It is, again, important that NCDA conduct economic and financial feasibility, as well as environmental impact studies, before embarking on its main projects in the area. It is not sufficient to depend on engineering studies alone.

1.56 New Cities. As the New Cities programs started over 10 years ago, it is essential to review and evaluate the achievements of the program before committing large new investment funds to new programs. The effects of the new cities on population decentralization, housing and industry must be carefully evaluated. A full evaluation of

¹⁶ The Ministry of Planning expects that the road will have some positive impact on the environment, as it helps control air and sound pollution; it can also encourage urban expansion towards the desert, particularly the area behind Mokattam hill.

the first generation of cities should be performed from an economic, financial and social point of view. It is important to evaluate the performance of the newly created industrial parks and the cost effectiveness of their associated subsidies. The policies towards housing construction and loan subsidization in new cities must also be critically assessed. New programs should be curtailed until the existing cities are evaluated and existing infrastructure fully utilized. Additional new cities should be constructed only where an economic base exists and where the cities have a comparative economic advantage, demonstrated by private sector willingness to invest in housing, services and industry.

1.57 The Third Five-Year Plan allocation for New Cities programs should not be exceeded. It is recommended that priority be given to complete ongoing projects within the first generation of new cities where large sums (LE 2.5 billion) have already been expended. The completion of these ongoing works (for a total of about LE 0.85 billion) would minimize the losses of leaving infrastructure systems only partially operational in the six cities whose development began during the First Five-Year Plan and would ensure that the development of these cities proceeded with less contribution from the Government. The completion of projects started in the new cities started during the Second Five-Year Plan should proceed only after conducting feasibility studies and only in economically and financially viable cities. Investments should be targeted to the cities with the capacity to create the most jobs in manufacturing, construction and services at the least cost. It is also important to limit government investments to areas where the private sector is unwilling to invest. Investments in a new, third generation of new cities (cities whose development has recently started) should slow down and possibly stop completely. Investments would have a bigger return if they were concentrated on completing those cities under construction, where large sums have already been expended.

1.58 Housing. The scarcity of serviced land available for development is a major factor in the high cost of housing development. The Government and Ministry of Development, New Communities, Housing and Public Utilities (MDHPU) should concentrate their efforts on the provision of infrastructure to service more land and on the development of small plots within and near the population centers. The construction of most dwellings should be left to the private sector. The private sector is better able to provide housing so long as the investment climate is favorable and the obstacles to its participation are removed. Housing loans and interest rate subsidies constitute a financial burden on government finances and contribute to distortions in the housing market.¹⁷ All loans for average and above-average housing should be subject to the prevailing market interest rates.

¹⁷ According to MOP and NIB, the level of soft loans are being reduced gradually, from LE 1.1 billion in FY92, to about LE 875 million in FY93 and LE 750 million in FY94. According to NIB, approximately 90 percent of soft loans are granted to low-cost housing, while 10 percent are for average housing.

1.59 In summary, it is essential to (i.) provide the necessary incentives to increase the private sector's involvement in the construction of houses by increasing the supply of affordable, serviced land and small plots to individual buyers; (ii.) increase the availability of construction materials; (iii.) relax rent control legislation by immediately removing controls on vacant units and new construction and gradual removing controls affecting other categories of rental units; (iv.) encourage private sector investment in housing by mobilizing savings and establishing financial institutions and mechanisms to provide the private sector with long-term loans for housing construction; (v.) remove unnecessary standards and regulations; and (vi.) reduce the Government's involvement in the construction of housing and limit interest rate subsidies and investments to the poorest segments of the population.¹⁸ With the liberalization and reform of the housing market, many of the estimated 1.8 million unoccupied units would be available for occupancy, thus helping to relieve the shortage and reducing the need for additional government investment.

1.60 Water and Wastewater. The total investments allocated by MOP to water and wastewater projects are not sufficient to enable the implementation of the proposed MDHPU programs; nevertheless, increasing the amount to be invested is constrained by the implementation capacity of the responsible organizations and their limited operation and maintenance capabilities. It is, therefore, essential to improve the operation, maintenance and administration of existing facilities; to strengthen the staffing; to increase self-financing and cost recovery; and to involve the private sector in providing some services. It is also necessary to improve the operation of the institutions involved in the sector and to allow them to operate and be constituted as commercial enterprises. These reforms are essential to ensuring the proper and efficient utilization of the large amount of investment funds allocated.¹⁹ If the Government continues implementing the suggested reforms in the sector, it is recommended that the amount allocated to National Organization for Potable Water and Sanitary Drainage (NOPWASD) be increased by LE 1.0 billion, and the amounts allocated to the Cairo and Alexandria water authorities and wastewater authorities be increased by a total of LE 1.0 billion. The increase would make it possible for NOPWASD and the four organizations to implement a larger portion of their requested program and, hence, better serve the population in need of water and wastewater services.

Telecommunications

1.61 The changes proposed in public sector investment in the communications sector would: increase the allocation for the Arab

¹⁸ Concerning this issue, according to MOP, legislation amending Law 25 of 1992 (new building codes) will be issued shortly in order to help overcome some of the problems associated with present law.

¹⁹ MOP and NIB have informed the World Bank that companies are to be established in each of the Governorates to implement and maintain water and wastewater projects, with necessary funds to be provided through increased tariffs. Evaluation is currently underway for three newly established companies in Damietta, Beheira and Kafr El-Sheikh.

Republic of Egypt National Telecommunications Organization (ARENTO), relative to the level proposed by MOP; raise revenues through better cost recovery to provide a larger amount of self-financing for investment; elicit private sector participation to alleviate the existing high level of congestion, and continue the progress made during the Second Five-Year Plan (Chapter VIII).

1.62 The telecommunication sector requires substantially larger investments than the allocation that MOP is able to make given the tight budgetary conditions. The aggregate investment program could be reduced from LE 4.8 billion (ARENTO proposal) but should not fall significantly below the range of LE 3 billion to LE 3.5 billion (i.e., about 2.5 to 3 percent of GDP) during the next five years. Moreover, according to ARENTO financial projections (which are reasonable), the entire proposed investment program could be financed by retained earnings. The Government could pursue a three-pronged strategy: the proposed level of investment could be reduced and tranced by deferring the less urgent parts of the program; revenue could be raised through better cost recovery; and greater involvement by the private sector in financing of new installations could be elicited through buy, lease and transfer arrangements for large institutions or licensing agreements for terminal and special facilities. Therefore, of the total share of LE 3 billion to LE 3.5 billion, between LE 0.5 billion and LE 1 billion could be provided by the private sector if the current restrictions on its participation were to be eased.

1.63 Considering the size and complexity of the ARENTO operations and development requirements and the need to update and strengthen the organization and its capabilities in order to cope with growing sectoral requirements, a restructuring study should be undertaken by the Government to determine the most suitable institutional and organizational setup within the sector, as well as to where and how competition should be introduced. The study should determine how private sector participation could be increased in the immediate- and medium-term, with a view to financing further development and to increasing competition in the sector as a whole. Parallel to the above restructuring study, it is recommended that ARENTO make a thorough assessment of its planning, implementation and operational capabilities.

Transportation

1.64 The changes proposed in public sector investment in the transportation sector would: emphasize the maintenance of the intercity and urban road systems; shift the allocation for urban transport from the subsidization of urban bus services to an expansion of urban road capacity; defer the implementation of the next phase of the Egyptian segment of the North African International Road; and defer a proposed project to widen and deepen the Suez Canal (Chapter IX).

1.65 Four provisions are needed to ensure that the Egyptian transport sector operates satisfactorily: (i.) adequate funds for road maintenance; (ii.) an end to the subsidization of freight and passenger

transport services, except for the Cairo transport system; (iii.) improved utilization of urban road networks; and (iv.) more effective transport planning. Generally, insufficient funds have been available for road maintenance, particularly for urban and local roads. Subsidized railway services are costing the Government large and unnecessary sums, and subsidized public passenger transport services are inhibiting the initiation of bus and air transport services by the private sector. Effective road capacity for traffic in urban areas is far less than physical capacity, and transport investment proposals are made, and often implemented, without regard to economic optimization.

1.66 Some transport investment projects have, nevertheless, been adequately evaluated, and the transport "core" new project investment should include: (i.) the construction of an economically and environmentally desirable new road between Cairo and Assiut; (ii.) the rehabilitation of a large number of railway mainline locomotives; (iii.) the development of the Damietta Branch of the Nile for navigation; and (iv.) the completion of the first phase of development of the new port of El-Dikheila (only the equipping of the container terminal remains to be done). The largest of the proposed Third Five-Year Plan transport investments is the construction of the first phase of the second line of the Cairo metro; only the large environmental benefits of this project, which are difficult to quantify in monetary terms, might make this costly project more than marginally desirable. Opportunities exist for substantially increasing the role of the private sector in the provision of transport services specifically in: (i.) the trucking industry; (ii.) the waterway transport services (barge and ferry services); (iii.) bus services; and (iv.) domestic air transport passenger services.

1.67 To the extent possible, considering the limited supporting information available on transport sector investment proposals, the mission attempted to identify, from an economic, financial and environmental perspective, those transport investments that would be worth implementing during the Third Five-Year Plan. The proposed program would provide Egypt with a better intercity and international transport system by the end of the Third Five-Year Plan period.

1.68 Public Transport. The recommended transport program allows for greater private sector involvement in the provision of both intercity and urban transport services. For this to occur, however, it is imperative that the subsidization of public sector transport services be greatly reduced, the sole exception being the Cairo metro services. Private sector investment is expected to provide all incremental road and waterway transport services. It is also expected that the private sector will entirely supplant the public sector in the provision of trucking services, and perhaps in the provision of all waterway transport services as well. It is recommended, moreover, that the private sector be invited to provide domestic air transport services, with the expectation that, through their use of more cost-effective aircraft, they will eventually supplant EgyptAir entirely in the provision of domestic air transport services.

1.69 Railways. The limit recommended for Egyptian National Railways (ENR) rolling stock acquisition during the Third Five-Year Plan period presumes that the equipment for single users will be acquired by these respective users, rather than by ENR. No changeover to the private sector has been presumed for cargo handling and storage in ports solely because of existing leasing arrangements. It is recommended that, as these leasing arrangements expire, new leasing arrangements be established by resorting to competitive bidding, in which case gradual private sector involvement in port activities would be likely to occur.

1.70 Ports. One possibility for private sector involvement in port cargo handling in the near term is the El-Dikheila container terminal, where a private sector lessee or joint-venture partner might be desirable both from the standpoint of providing investment funds and from the standpoint of management expertise (the facility would accommodate vessels not heretofore accommodated in Egyptian ports).

1.71 Cost Recovery. The economy of Egypt can be expected to recover the full costs of all proposed investment. Whether or not individual modes and facilities will recover full financial costs varies. The intercity road network has considerable potential for directly recovering costs through the imposition of tolls, provided that Roads and Bridges Authority (RBA) is given the requisite legal authority. Supplementing toll collection by earmarked taxes on fuel, if set at the original (1981) level as a percentage of the fuel price, would enable RBA to cover all road maintenance and rehabilitation costs and even some upgrading programs (bridge strengthening, shoulder paving, roadway furniture, etc.) directly from its own resources. Railway investment might be fully recovered, but only if there is an accelerated effort to bring tariff levels in line with costs and if these services that have little potential for becoming profitable are discontinued. Waterway improvement investment would require the institution of new charges if the River Transport Authority (RTA) is to recover costs directly. Investment in ports should achieve full cost recovery, provided that investments are made in an optimal, phased manner. Airport investment could be largely covered from airport revenues, provided that attention is given to maximizing these revenues.

Education and Health

1.72 The proposed changes in public sector investment in the education and health sector would: eliminate fees and other financial contributions by the needy in basic education; increase resources for basic education, including vocational and technical training; reduce public investment in curative health care and encourage private investment; increase investments in preventive and primary health care; and introduce cost-recovery measures in higher education and curative health care (Chapter X).

1.73 Education. Overall, government spending on education remains inadequate. The amount of the government budget allocated to the sector relative to GDP needs to be increased to reflect the economic

and social value of education. This would imply both an inter- and an intra-sectoral reallocation of government resources towards basic education (including vocational and technical training). This is consistent with the positive externalities associated with basic education. From an equity standpoint, the targeting of fees and contributions in basic education is highly desirable if lower-income families are to have equal access to the education system. Special attention should be paid to certain target groups/areas, such as females and rural communities. The Government ought to consider a plan that rationalizes the use of contributions and the prevalence of private tutoring practices and increases the transparency of the educational finance system at all levels.

1.74 Nongovernment resources in the sector should be mobilized through cost-recovery measures and policies that increase the role of the private sector. The Government should consider a plan that openly institutionalizes cost recovery, especially at the higher-education level, and cost control by merit standards, i.e., by introducing more restrictive procedures for access to post-secondary education. The issue of vocational and technical training needs to be revisited and analyzed. The Government should strive to put together an educational system that is responsive to market needs and to the likely substantial increase in the role of the private sector. Public educational institutions should teach general skills and produce students capable of being retrained as market circumstances change, while instruction in firm-specific skills should be provided by employers. The role of the private sector in education should be more explicitly defined, and the regulatory environment governing the provision and operation of private education needs to be examined.

1.75 There are inefficiencies in the management of sector resources manifested by the imbalances in the distribution of these resources among the various expenditure categories; for example, budget allocations to recurrent expenditures do not take into account the implications of investment projects for operations and maintenance (O&M). Investment decisions are made by MOP, while O&M decisions are made by the Ministry of Finance (MOF). This has resulted in a shortage of recurrent funding for O&M, since salaries are not a negotiable item, and has led to the deterioration of the capital stock of educational facilities and, subsequently, to higher capital allocations. If these imbalances are to be effectively addressed, the managerial/institutional capacity of the Ministry of Education (MOE) should be strengthened, which, in turn, would improve MOE linkages to MOP and MOF. Investment decisions should emanate from a policy framework that more clearly identifies the role of the education sector in the economy.

1.76 Health. A case can be made for increasing planned investment expenditures for health, which are low from an international standpoint. With or without such an increase, the Government should move to restructure expenditures away from curative services and toward preventive and primary care. This shift would not only provide a more efficient use of available resources, but it would also increase equity in providing health services. At the same time, the role of the

Government in curative care (i.e., in secondary and tertiary care hospitals) should be reduced. Public sector curative health facilities should promote cost-recovery measures, such as differential user fees, in conjunction with an extension of medical insurance coverage. These cost-recovery measures will not only provide new resources for primary and preventive care but will help ration demand for curative care and give planners a better idea about the need for future capacity expansion.

1.77 The Government should also take a much more active role in targeting interventions to protect the most vulnerable groups: children, women of child-bearing age and the elderly. These groups appear to receive insufficient care and are most threatened by dwindling resources. The quality of care at the primary and secondary facilities should be raised. A stricter referral system may still be needed to control patient access to tertiary health facilities. The more frequent use of cost-recovery measures at the tertiary level would also help to control access to tertiary care facilities. Greater use could be made of primary and preventive care by providing better services (equipment, adequately compensated trained personnel) and stimulating public awareness of the merits of adopting certain health measures.

1.78 The planning and management capabilities of the Ministry of Health (MOH) should be improved. One important area that needs to be addressed is the adequacy of MOH staffing. The ratio of doctors to auxiliary health personnel is too high as a result of the differential in salaries of doctors compared to nurses, for example. MOH appears to be overstaffed with administrative personnel. Another area needing attention is the level of maintenance practices in hospitals and other facilities. The budgeting process must be modified to allow for the simultaneous consideration of investment and maintenance decisions. The spending on maintenance for existing facilities needs to be increased.

Industry

1.79 Investment projects under the Ministry of Industry (MOI), Ministry of Military Production (MMP) or the industrial Holding Companies (Law 203 enterprises) have not been reviewed by the Bank. Nevertheless, in line with the goals of the Government's economic reform program, the changes that would need to be introduced in public investment program of the industry sector are as follows: emphasize rehabilitation and the completion of those projects with proven high economic rate of return; speed up the privatization effort; and avoid starting new projects (Chapter XI).

CHAPTER II: MACROECONOMIC FRAMEWORK

Summary

The average real growth rate of GDP envisioned in Egypt's Third Five-Year Plan is 5.1 percent per year. Domestic absorption is projected to grow at a lower rate of 4.2 percent, resulting in an improvement of the deficit in the balance of goods and non-factor services. This improvement is to be attained through a decline in the shares of private consumption and gross investment in GDP, which are projected to grow by 3.9 percent and 4.6 percent a year, respectively, during the Third Five-Year Plan. Per capita private consumption is projected to increase by 1.5 percent a year during the Third Plan period. To attain the targeted growth rates for GDP, the investment effort by the private sector should be somewhat higher than projected. Capital inflows could play an important role, but the real constraint on this front is likely to lie on the perceived profitability of private investment. Establishing the credibility of the reform program is crucial for the emergence of a rapid and strong supply response by the private sector. This points to the importance of continuing a prudent monetary policy and a tight fiscal policy, including a reduction in the losses of public enterprises brought about by financial and real reorganizations. Finally, the Third Five-Year Plan is predicated on a sharp improvement in the efficiency of investment. To achieve this aim, the Government should accelerate the reform of the regulatory framework, as envisioned under the second phase of the reform program (1993-95), and build upon the substantial gains that were made in stabilizing the macroeconomy during the initial phase of the program.

A. Initial Conditions of the Economy

2.1 From the mid-1970s to the mid-1980s, Egypt experienced rapid economic growth stimulated by high oil prices, increased worker remittances and tourism revenues, and substantial foreign borrowing. During this period, public investment in infrastructure and import substitution industries grew very fast. The sharp decline in oil prices after 1985 - which was initially smoothed by increased foreign borrowing - exposed major macroeconomic disequilibria that had persisted until recently, despite the gradual implementation of some corrective policies since 1987. As a result, real per capita GDP during 1988-91 stagnated (see Table 2.1, below) and unemployment increased, especially among educated youths. These internal and external macroeconomic disequilibria were related to: (i.) a persistent excess of public expenditures over public revenues, which required large transfers of

foreign and domestic private savings to the public sector; (ii.) a persistent excess of imports over exports of goods and non-services; and (iii.) a bias against the production of tradable goods.

2.2 Internal Disequilibrium. The necessity to reduce public sector deficits posed some serious dilemmas for Egyptian policymakers. Initially, the reductions were mostly in expenditures because the capacity to raise revenues was severely constrained by an inability to broaden the tax base and institutional weaknesses in revenue collection. From FY88 to FY92, the budget deficit (including investments by public enterprises) as a percentage of GDP was reduced from 24.5 to 6.4 percent, mostly through reductions in consumption subsidies and investment.

2.3 Investment fell from a high level of about 29 percent of GDP (market prices) in FY83 at the peak of the expansion to 18 percent of GDP by FY92 (Table 2.1, below). This reflected sharp drops in public investment. Unemployment was first contained by massive public hiring, but as the fiscal crisis deepened, open unemployment increased rapidly, rising from 7.5 percent of the labor force in 1976 to around 12 percent in 1986 and, possibly, to around 15 percent recently.¹ The Ministry of Planning's estimate is 9 percent.

2.4 The remaining fiscal deficit was financed with foreign grants and loans, domestic financial repression (i.e., government borrowing at less than market interest rates together with capital control) and the inflation tax (the product of inflation and high-powered money). As the external debt grew (reaching 150 percent of GDP in FY89), the budget deficit had to be financed increasingly from the latter sources, leading to distorted prices and increased inflation and capital flight. The interest rate ceilings imposed both on deposits and loans brought about, in general, negative ex-post real interest rates. The latter caused excess demand for credit, which the authorities handled by imposing bank specific credit ceilings. By FY91, the "financial repression tax revenue" was estimated at over 7 percent of GDP and the inflation tax at over 4 percent of GDP.² As a result, measured national savings fell from 23 percent of GDP in FY82 to 14.5 percent in FY90. Private savings were particularly hard hit by the

¹ The 1976 and 1986 figures are based on Egypt's Population Census, as reported in Heba Handoussa and Gillian Potter, eds., Employment and Structural Adjustment: Egypt in the 1990s, Cairo, American University in Cairo Press. The more recent estimates are based on the work by researchers using Labor Market Surveys, which are computed quarterly and correct for discouraged workers who have dropped out of the labor force. Data from Information and Decisions Support Center (IDSC) in Cairo indicate an unemployment rate of 14.1 percent in FY92.

² For a discussion, see World Bank, Arab Republic of Egypt: Financial Policy for Adjustment and Growth, October 1993. The financial repression tax is defined as the difference between the actual debt service payments on government domestic borrowing as compared to payments calculated at the international interest rate. Inflation tax is defined as the rate of inflation multiplied by the level of base money at the beginning of a given period. Financial repression encourages capital flight. While no precise estimates are available, several pieces of evidence suggest that substantial capital flight accumulated abroad during the 1980s.

Government's attempts at keeping borrowing costs down, and plummeted to 19 percent of GDP in FY90, down from 28 percent in the early 1980s.

2.5 External Disequilibrium. The large use of foreign savings led to an unsustainable debt burden in the second half of the 1980s. At a structural level, the availability of foreign savings permitted the exchange rate to remain overvalued for more than a decade, thus taxing the production of tradable goods. In addition, it permitted the adoption of capital-intensive techniques that do not represent Egypt's comparative advantages and have aggravated the disequilibrium in the labor market.

Table 2.1: Egypt: Key Macroeconomic Indicators, 1983-92

(percent change, unless otherwise indicated)

	FY83	FY88	FY90	FY91	FY92
Real GDP Growth	7.4	3.9	2.5	2.3	0.3
Real GDP Per Capita Growth	4.8	1.5	0.2	0.0	-1.9
Private Consumption Per Capita Growth	1.6	0.4	0.5	-0.1	-2.8
Total Investment/GDP ¹	28.7	24.2	21.9	20.4	18.0
Government Investment/GDP ²	20.8	23.1	17.5	14.7	11.4
Budget Balance/GDP	-19.6	-24.5	-16.5	-20.0	-6.4
Current Account Balance ³ (US\$ bil.)	-1.5	-1.2	-3.7	-2.4	1.3
Debt Outstanding (US\$ bil.)	29.0	46.9	51.1	39.1	38.2
Debt Service/Exports	17.3	17.2	46.6	39.5	17.9
Gross Reserves (US\$ bil.)	1.3	2.2	2.3	8.3	13.1
Inflation Rate ⁴	8.5	16.0	17.3	22.3	19.4
<u>Memo Items</u>					
Real GDP Growth ⁵	n.a.	5.1	4.7	3.7	1.9
Real GDP per Capita Growth ⁵	n.a.	2.7	2.4	1.4	-0.3

Source: World Bank.

¹ Based on national income accounts.

² Based on fiscal accounts; including public enterprises.

³ Excluding official transfers.

⁴ As measured by GDP deflator.

⁵ Preliminary estimates. The Ministry of Planning and the National Investment Bank are in the process of revising the National Income Accounts of Egypt. The revised figures take into account parts of private sector activity that were not previously measured.

2.6 Once foreign savings fell, the economy, which was based on a central planning system and lacked the necessary flexibility, came under substantial pressure. The incentive system had become highly distorted with a multitude of price, foreign exchange and trade controls. Foreign exchange controls were imposed (foreign exchange allocations for imports were administratively decided, and export proceeds were compulsorily liquidated into the central bank at the official rates); international capital mobility was restricted (except for foreign currency deposits derived from workers' remittances); and the informal ("black") market was closely monitored. Finally, a dual system of fixed exchange rates was employed. Moreover, the authorities relied strongly on price

controls and the use of restrictive trade policy instruments - mainly quantity restrictions on imports - to contain pressures on the goods market and on the trade balance. This added to the inefficiencies in resource allocation, attributable to an inappropriate system of incentives and controls inherited from the 1960s and 1970s, and reduced productivity and potential growth further.

B. The Reform Program and Recent Economic Trends

2.7 The Policy Agenda. Since 1990, the Government has embarked on a comprehensive adjustment program to tackle the macroeconomic disequilibria and lay the foundations of renewed economic growth. The Government's strategy has been to create an enabling environment for private-sector, export-led growth. The main components of the first phase of the Government's program were:

(i.) Stabilize the economy and achieve internal and external equilibrium quickly (by reducing subsidies, increasing taxes, and freezing public sector investment) and to liberalize the financial and foreign exchange markets;

(ii.) Restructure the economy and increase the efficiency of resource use through liberalization of trade and price, decontrol of investment and rationalization of the regulatory framework and of private enterprise reform and privatization; and,

(iii.) Improve social policies to minimize the negative effects of the reforms on the poorer segments of the population.

The first phase of the Government's program was supported by an IMF Stand-by and a World Bank SAL. In addition, long-term economic prospects have been substantially enhanced by debt relief from Egypt's official creditors (the Paris Club agreement of May 1991) that is conditional on continuing macroeconomic reforms.³ An outline of the second phase of the Government's reform program is presented in Chapter I.

³ Paris Club creditors agreed in May 1991 to provide Egypt with an immediate debt service relief equivalent to 15 percent of the net present value of debt service falling due, and a permanent debt service relief over three years totaling 50 percent of the net present value of Egypt's eligible debt with Paris Club creditors (including the immediate relief of 15 percent); a second phase, also of 15 percent, which is scheduled to take place following the successful conclusion of the IMF Stand-By and agreement on a successor arrangement; and a final phase, which will entail a further reduction of 20 percent, is contingent upon Egypt's carrying out the agreement and is scheduled to be effective by July 1994. This debt relief is contingent upon several conditions including that an arrangement with the International Monetary Fund must remain in force through July 1994.

2.8 More specifically, the Government's structural adjustment policy agenda envisions:

- (i.) Marked reduction in public absorption to ensure price stability and allow for increased private investment;
- (ii.) Liberalization of the foreign exchange market to improve the efficiency of allocation of this scarce resource;
- (iii.) Financial sector reform, including banking, insurance and the securities markets, to strengthen the process of liberalization, prudential supervision, privatization and to improve the allocation of investment, increase domestic savings and reduce the anti-labor bias;
- (iv.) Liberalization of the goods market to increase efficiency by removing price distortions and promote competition;
- (v.) Trade liberalization to promote efficiency and lay the ground for export-led growth;
- (vi.) Public enterprise reform and privatization to promote competition and increase efficiency; and,
- (vii.) Comprehensive tax reform to lower tax rates, increase the tax base, and improve tax collection.

Recent Economic Developments

2.9 The implementation of the policy agenda has proceeded at a brisk pace. The capital and exchange markets have been liberalized, and a new treasury bill market has been established to allow for a market-based monetary policy. A sales tax has replaced a complex system of product-specific consumption taxes, and subsidies have been reduced. At the same time, performance, in terms of prices, and the balance of payments have been favorable. The inflation rate (CPI), which reached 21.2 percent p.a. in FY92, fell to 11.2 percent p.a. in FY93.

2.10 The overall balance of payments position moved into a surplus of US\$5.9 billion in FY92 and US\$3.9 in FY93, as opposed to an average deficit of US\$2 billion a year in the recent past. This surplus can be traced to the debt reduction; exceptional grants received during FY91 and FY92; strong revenues from the Suez Canal, increase tourism and workers' remittances; private capital reflows (about US\$2.0 billion per year); and weak imports.

2.11 However, a number of less favorable developments have also taken place. The stagnation in imports, while reflecting to some extent a decumulation of import inventories, also reflects a slowdown in the

economy. GDP growth has slowed from about 2.5 percent in FY91 to an average of less than 1 percent in the period 1992-93.⁴ Real consumption and exports have been weak, and the public sector has effectively frozen its investment program, while the private sector has not yet responded to the reforms. Government finances, which remained weak in FY91, registering an overall deficit of 20 percent, have shown a substantial improvement over the past two years. The deficit was reduced in FY92 to about 6.5 percent of GDP (about 6 percentage points of the reduction in the fiscal deficit was due to the fact that the FY91 deficit figure included a one time capitalization of public sector banks).⁵ Excluding the investments (and self-financing) of the public enterprises, which were taken off the budget starting in FY92, the deficit amounted to only 5 percent of GDP and was subsequently reduced to 4.1 percent of GDP in FY93.

2.12 There are various reasons why private investment has not yet responded to the new environment. Constraints on private sector production, investment and trade have been widespread until recently and are only being removed during the second phase of the reforms (1993-95). Moreover, their financial position has weakened with the sharp increase in key prices as well as in real interest rates. Private investors may have also remained wary of the possibility of policy reversals, at least initially. A further important factor, at least at the beginning of the reform program, may have been the sharp reduction in inventories that followed interest rate liberalization.⁶

2.13 The recent capital inflows are exceptional and, to a large extent, linked to portfolio adjustment operations on the part of individual investors.⁷ It is estimated that in the period 1991-93 there were about US\$5 billion of private short-term capital inflows. A widely reported recent phenomenon is the repatriation of foreign assets by private firms to pay off more expensive domestic liabilities. This undoes past portfolio choices, which were predominantly composed of foreign currency assets and domestic currency liabilities. Indeed, since June 1991, the date of the Paris Club Debt and Debt Service Reduction Agreement (DDSR), which coincided with the financial liberalization, the private sector has been drawing on its foreign exchange accounts while reducing its domestic currency denominated net

⁴ MOP's preliminary estimates of GDP growth (based on the revised National Income Accounts time series) also confirm the slowdown; these preliminary estimates indicate that the pace of growth decreased from 3.7 percent p.a. in FY91 to 1.9 percent in FY92 (see Table 2.1).

⁵ The Third Five-Year Plan's estimate of the budget deficit in FY92 is 5.6 percent of GDP, but this figure excludes investments by the economic and service authorities.

⁶ Inventories are reported to have fallen from over a year of sales to a few months of sales; however, no precise estimates are available.

⁷ Here, "portfolio" means international portfolio choice; that is, selling or acquiring foreign assets or debt instruments by domestic investors.

credit from the banking system. These portfolio shifts may also have been exacerbated by the decline in dollar interest rates.

2.14 In addition, the permanent supply of capital may also have increased. Workers' remittances have increased by about one third, to an average of about US\$5 billion p.a. While this increase reflects mostly a portfolio shift, it probably also indicates the increased desire of migrants to diversify their future savings between domestic and foreign assets. More generally, and as a result of the Gulf war, Egypt is emerging as a more attractive place for the region's residents to maintain part of their savings.

2.15 Because of massive capital inflows, large interventions in the exchange rate and money markets have also taken place in order to prevent nominal appreciation of the Egyptian pound against the US dollar. The central bank has been to a large extent (two thirds) sterilizing the effect of capital inflows that have taken place since February 1991 on the money supply. The sterilization policy, together with the use of treasury bills (TBs) in financing the budget deficit, has resulted in a sharp increase in the outstanding stock of TBs. Since the introduction of the TB market in January 1991, outstanding TBs reached about LE 8.5 billion by end-December 1991, about LE 28 billion by end-December 1992 and LE 32 billion by end-March 1993. The interest payment on domestic debt increased from 4.2 percent of GDP in FY91 to 7 percent of GDP in FY93. This policy has contributed to an almost flat nominal exchange rate (at about LE 3.3 per US dollar), though the Egyptian pound has appreciated in real effective terms by about 25 percent. However, domestic interest rates, such as the three-month TB rate, which were for a relatively long period unchanged at around 19 percent, have declined to less than 15 percent in recent months, in line with the decline in the inflation rate. Nevertheless, real interest rates (on an ex post basis), which were negative for nearly two decades, have risen sharply, averaging between 5 and 7 percent. In sum, interventions by the Central Bank of Egypt to prevent a nominal appreciation of the pound against the US dollar resulted in a rapid accumulation of official reserves, which, as of end-May 1993, reached US\$15 billion (equivalent to 15 to 16 months of imports).

2.16 The Budget. Under the new system of free capital markets, it has become more difficult to effectively monetize fiscal deficits. The link between money and prices (or monetary growth and inflation) has become tighter now than under the previous regime. Loose monetary growth is bound to reduce nominal domestic interest rates and, hence, make domestic currency deposits less appealing relative to foreign currency deposits. This would induce capital flight, which would put pressure on the exchange rate. As a result, the Egyptian authorities are increasing their reliance on TB auctions to finance the fiscal

budget.⁸ But clearly, the Government cannot continue to increase its domestic indebtedness at the same pace. Besides crowding out the private sector, which is contrary to the growth strategy, domestic indebtedness also increases the risk of government insolvency in the medium run.⁹ The market is likely to be especially sensitive to fiscal news, given the exacerbating effect of the conditional debt reduction. The Government's macroeconomic policy during the second phase of its reforms (1993-95) calls for a further reduction in the fiscal deficit. This policy is expected to lead to an easing of financial pressures, further lowering interest rates, which should lead to a slowdown in the pace of short-term capital inflows.

2.17 Real Effects of High Interest Rates. Movements in exchange and interest rates may have real side implications due to their effects on the net worth of firms and financial institutions. The existence of bad assets may encourage financial intermediaries to roll over the debts of financially weak enterprises and to refrain from charging them a proper risk-adjusted cost of capital.¹⁰ The recent liberalization of prices (both goods and financial) have had major implications for the private sector. As part of its reform program, the Government intends to liquidate those public sector enterprises (PEs) that are not covering their operating costs and to restructure the viable public enterprises (see Chapter XI).

2.18 Effect of Liberalization Policies on PEs. The Egyptian productive system is largely dominated by the public sector. The public sector (including public enterprises and economic and service authorities) produces over 40 percent of the country's GDP and accounts for about 55 percent of annual gross investment. Before the current stabilization and reform program began, PEs enjoyed, among other advantages, negative (ex-post) real interest rates, preferential access to credit, automatic government loan guarantees, subsidized exchange rates and major trade protection. This has resulted in capital-intensive modes of production and balance sheets dominated by debts. As part of the current process of financial liberalization, many of those benefits are disappearing, and the PEs would have to compete with private sector borrowers for credit, without the benefit of automatic government guarantees. Already subsidized exchange rates are no longer

⁸ During FY91, TBs represented 17 percent of the Government's domestic borrowing requirement. They have increased their share to 36 percent in FY92. With the slow growth of GDP in the recent past, the share of interest payments (foreign and domestic) on total government debt in current expenditures has increased to 26 percent in FY92, up from 16 percent in FY90. The net debt is smaller since it is offset in part by the holding of international reserves arising from the effective sterilization of nearly two thirds of capital inflows.

⁹ GDP has to increase by 5 percent a year for the ratio of public debt to GDP to remain constant.

¹⁰ This, in turn, may keep deposit rates below what they would be under normal conditions. Banks may also charge higher interest rates to financially sound enterprises in order to make up for the losses from non-performing loans.

available, trade barriers have been reduced and most of the price controls have been lifted.

2.19 Despite some improvement in profitability of PEs (excluding authorities) after the price reforms of 1986, the financial viability of many PEs is now in question. Since January 1992, Egyptian firms have faced, for the first time in recent history, a positive cost of capital. In all likelihood, PEs must have suffered a net loss of several percentage points of GDP as a result of the financial liberalization. The distribution of net liabilities (and average maturities) across companies is bound to have involved both net creditors and net debtors. In that sense, the changes in nominal interest and exchange rates, although moderate overall, are likely to affect the performance of a substantial number of PEs quite severely. Thus, it is crucial that the PEs adhere strictly to a hard budget constraint, otherwise they are likely to pass through their increased financial costs, either directly, such as through arrears to suppliers, or indirectly through the fiscal budget and arrears to the banking system.

C. The Challenge Ahead:

Establishing the Credibility of the Reform Program

2.20 While the social costs inherent in the program are likely to be low due to Egypt's relatively gradual structural adjustment over the last few years, the high rate of unemployment, especially among educated youth, is a major problem that can only be resolved by the resumption of high, sustainable growth. Egypt's reform strategy is predicated on a strong supply response by its private sector, which is expected to react to the stabilization of the macroeconomic environment and the liberalization of prices and markets by committing its funds and energy to new investment opportunities.

2.21 Often, ambitious reform programs have had to be scaled down in the face of public opposition because of underfunding. Underfunding reduces what can be spent on the social safety net while maintaining fiscal austerity. The scarcity of capital also leads to high real interest rates, reducing the profitability of private investment, and a low level of international reserves that can lead to an excessive depreciation of the exchange rate. In addition, the presence of a large debt overhang has generally depressed private investors fearing future tax increases. Such were the experiences of Egypt and Mexico in 1987, for example. Reform programs succeed best when a government has moderate debts, access to external funds to smooth transition costs and can maintain low inflation and interest rates. In this respect, the present situation, created by the generous debt relief granted by Egypt's official creditors and the large grants provided to Egypt during the Gulf crisis (1990-91) presented Egypt with an unprecedented opportunity for a change in the policy regime. The Government has moved quickly to reduce, and eventually eliminate, the macroeconomic imbalances and intends to deepen the structural reforms over the next three years.

2.22 At this particular juncture of program implementation, ensuring that the structural adjustment program proceeds quickly is not only important in terms of guiding long-term resource allocation more efficiently, but also as a way to reduce the risk of macroeconomic and financial instability. In particular, instability in financial markets could seriously undermine credibility in the sustainability of the program. Thus, further reductions in the fiscal deficit and the continuation of a prudent monetary policy are crucial to the credibility and sustainability of the entire reform program.

2.23 The international experience suggests however that even in the countries that have pursued consistent policies of stabilization and structural reform, it took several years before credibility was restored and private investment responded to the new incentive structure. (See Chapter IV). A major challenge in Egypt may now well be how to find social accommodations that would allow for an acceleration and deepening of the reform program in line with the Government's agenda for the second phase of its program in the period 1993-95.

D. Evaluating the Macroeconomic Framework of the Third Five-Year Plan

2.24 The Third Five-Year Plan (FY93-97), which was presented to the People's Assembly in May 1992, should be viewed in light of these exceptional circumstances. Given the importance of private investment to the success of the reform program, the plan is likely to be perceived by the private sector as a key indicator of the Government's commitment to change. Potential investors will look first for consistency in the Government's planned expenditures and revenues, monetary stability and, more generally, for a savings/investment balance that leaves ample room for the private sector. They will look for supportive projects in infrastructure targeted to bottlenecks in the productive structure and for expenditures in social areas that are needed for social stability and long-term growth. Finally, they will also look for a change in the philosophy of planning itself, which must be adjusted to reflect a changed policy environment. It is, thus, macroeconomic consistency, support for the private sector (rather than repression and unfair competition), and well-targeted social programs that should be the keystones of any new development plan under the new economic environment.

2.25 Main Macroeconomic Features of the Third Five-Year Plan. The average real growth rate of GDP (at market prices) envisioned in the Third Five-Year Plan is 5.1 percent per year, which is moderate by historical standards but relatively high for an economy in the midst of a major transition. Consistent with past five-year plans, the manufacturing sector is expected to grow fastest (at an average yearly rate of 7 percent). Agriculture and petroleum are expected to grow at a slower pace (3.5 and 1.0 percent, respectively), thus reducing their shares in total value added, while services are expected to maintain their relative position. Domestic expenditures (total final consumption plus gross investment) are projected to grow at 4.2 percent, slower than

GDP growth. This results over time in an improvement in the real resource balance, which is projected to decrease from a deficit of 7.8 percent of GDP in FY92 to a deficit of 2.3 percent of GDP in FY97.

Table 2.2: Egypt: National Accounts¹, 1983-1997

	Real Growth Rate			Share of Real GDP			
	(percent change per year)			History		Third Plan	
	First Plan	Second Plan ²	Third Plan	FY82	FY87	FY92	FY97
	FY83-87 (actual)	FY88-91 (actual)	FY93-97 (projected)	----- (percent) -----			
GDP at market prices	4.45	2.60	5.14	100.00	100.00	100.00	100.00
GDP at factor cost	4.45	2.50	5.09	92.89	92.89	92.14	91.89
Exports of GNFS	4.23	5.52	6.03	17.31	17.69	29.46	30.73
Imports of GNFS	-3.38	2.06	2.99	42.29	29.14	37.23	33.02
Resource Balance	..	..	..	-24.98	-11.44	-7.77	-2.29
Total Expenditures	2.12	1.94	4.17	124.98	111.44	107.77	102.86
Total Final Consumption	3.53	2.44	4.12	98.95	93.43	89.70	85.43
Private Consumption	3.70	2.43	3.91	84.30	79.44	80.79	76.16
Government Consumption	2.61	2.50	6.00	14.65	13.99	8.91	9.27
Gross Domestic Investment	-3.92	-0.68	4.38	26.03	18.01	18.08	17.43
Memo Items:							
Per Capita Private Consumption Growth	1.00	0.00	1.50				
GDP at market prices ³	n.a.	4.30	5.14				
GDP at factor costs ³	n.a.	4.60	5.09				

Sources: World Bank; MOP.

¹ Up to FY91, constant Prices of 1986/87; after FY91, constant prices of 1991/92.

² Final year of the Second Five-Year Plan (FY92) not included.

³ Preliminary estimates. The Ministry of Planning and the National Investment Bank are in the process of revising the National Income Accounts of Egypt. The revised figures take into account parts of private sector activity that were not previously measured.

2.26 The improvement in the real resource balance is predicated on relative declines in the shares of total consumption and gross investment in GDP. Consumption is projected to grow by 4.1 percent a year (with private consumption growing at 3.9 percent a year) on average during the Third Five-Year Plan, with its share of GDP falling from 89.7 percent of GDP in FY92 to 85.4 percent of GDP in FY97. Since population is expected to increase at a rate of 2.4 per year,¹¹ per capita private consumption is projected to increase by 1.5 percent a year during the Third Plan period.¹² Gross investment is projected to

¹¹ Ministry of Planning estimate; the World Bank estimate is about 2.1 percent.

¹² The share of government consumption in total consumption is expected to increase slightly between 1992 and 1997. According to the text of the Third Five-Year Plan, the rise in government consumption reflects mainly the intended expenditures on maintenance of existing public assets so as to raise their productivity.

grow by 4.6 percent a year during the Third Plan, reducing slightly its share of GDP from 18.1 in FY92 to 17.4 percent in FY97. Overall, aggregate investment during the five years of the Third Plan is projected to amount to LE 154 billion (in 1991/92 prices). Finally, the fiscal deficit (based on MOP's definition) is projected to decrease from 5.6 percent of GDP in FY92 to 2.2 percent of GDP in FY97.

2.27 The baseline macroeconomic scenario underlying the World Bank Structural Adjustment Loan foresees a smaller GDP growth of about 3.0 percent per year during the reform years (1993-95), followed by growth of 4.5 to 5 percent a year starting in 1995/96. This is to be achieved with a gross domestic investment to GDP ratio of about 19 percent during 1993-95, and about 22 percent afterwards. Therefore, the Plan is relatively more optimistic on the return to investment as it foresees smaller investment and higher growth of output earlier on.

2.28 The Budget. Between FY91 and FY92, the reduction in the budget deficit amounted to an extraordinary 13.6 percent of GDP. While the budget is scheduled to undergo some changes during the Third Five-Year Plan, the emphasis is on maintaining and marginally improving recent gains. The deficit is projected to shrink from 5.6 to 2.2 percent of GDP between FY92 and FY97 (Table 2.3).¹³ This goal (though achieved partly by excluding the PEs and the economic authorities from the budget) falls somewhat short of the targets under the Government's reform program, which envisions the elimination of the deficit by FY97. In the Third Plan document, the reduction in the deficit is to be achieved by a further reduction in public expenditures, especially of subsidies (to be reduced from 3.3 to 1.4 percent of GDP), and capital expenditures, as well as by an almost flat real wage bill. However, interest payments on public debt are expected to increase. The interest falling due on domestic debt is expected to become larger than that on the external debt (the interest expense is projected to amount to LE 9.5 billion and LE 7.5 billion on domestic and foreign debt, respectively, in FY97.) The Third Plan indicates that this is predicated on an increase in domestic debt, and a high expected domestic interest rate.¹⁴

2.29 Total interest payments on public debt are projected to increase slightly in relative terms from 8.9 percent of GDP in FY92 to about 9.7 percent of GDP in FY97. The likelihood of such a moderate increase is dependant on both the level of the deficit and the

¹³ This reflects, in part, the removal of the investments of the PEs and the economic authorities from the budget as of FY92. This change, however, is only implemented in the Third Five-Year Plan document and is not reflected in the FY92 or FY93 budgets that were approved by the Peoples' Assembly. According to the Government's reform program, which is supported by a SAL and a Stand-by Arrangement, PE investment expenditures (about 2 percent of GDP) are excluded from the FY92 budget of the central government. However, the removal of the economic authorities' investments from the budget has not yet been officially communicated to the Bank.

¹⁴ However, the Third Plan does not provide indications about the expected size of public debt in the future, and thus, the net contribution of each of these effects (i.e., interest rate and stock of debt) on the size of interest payments cannot be separated.

perceptions of the market about the risk of lending to the Government. If real interest rates remain high, the interest expense on domestic debt will increase much quicker than projected in the Third Five-Year Plan, thus complicating the stabilization process. However, this outcome is less likely to take place with the projected decline in the fiscal deficit during the second phase of the Government's reform program. Nevertheless, the Plan's projections assume a fixed nominal exchange rate between the Egyptian pound and the US dollar. A depreciation of the exchange rate will increase the domestic cost of servicing the foreign debt.

Table 2.3: Egypt: Government Budget, 1982-1997
(percentage shares of GDP, market prices)

	Current Prices				Constant Prices	
	FY82	FY87	FY91	FY92	Third Plan ¹ FY92	FY97 (Projected)
Total Public Revenues	40.05	29.83	30.70	36.70	31.85	30.16
Current Receipts	25.85	18.99	18.51	24.70	28.92	26.90
of which tax revenue	21.77	15.11	15.74	20.55	17.91	18.31
Capital Receipts	14.20	10.84	12.19	12.00	2.93	3.27
of which grants	..	..	..	..	1.69	0.82
Current Balance	-12.99	-10.27	-11.24	-5.92	1.19	3.00
Total Public Expenditure	63.55	49.14	50.74	43.12	37.42	32.37
Current Expenditure	38.85	29.27	29.74	30.62	27.73	23.89
of which wages	9.55	8.16	7.18	6.79	6.10	6.01
of which interest payments	2.49	4.07	7.03	8.05	8.91	9.64
of which subsidies	14.00	3.65	6.28	6.44	3.32	1.42
Capital Expenditure	24.70	19.88	21.00	12.50	9.69	8.47
of which total investments	21.85	19.94	14.73	11.37	..	..
of which government ²	5.68	5.66	4.12	..	2.81	3.29
Overall Deficit	-23.50	-19.31	-20.04	-6.42		
excluding PEs	..	-16.50	-17.20	-5.00	-5.56 ^a	-2.21 ^a
Financing	23.50	19.31	20.05	6.42	5.56	2.21
Foreign	3.94	4.05	14.61	2.50	0.73	0.51
Domestic Financing	18.36	14.25	7.06	3.98	4.84	1.69
Bank - Monetization	12.36	7.91	1.99	-2.92	2.99 ^b	0.09 ^b
Nonbank - Soc. Sec.	6.01	6.34	5.06	6.90	1.84	1.79
Unidentified & Other						
Discrepancy	1.20	1.01	-1.62	-0.06		

Sources: World Bank, for FY82-92 data; MOP and NIB, for Third Plan (FY92-97) data.

¹ Third Five-Year Plan projections are in constant 1991/92 prices. Historical data for FY82, FY87, FY91 and FY92 are from World Bank and in current Egyptian Pounds. The Third Plan figures exclude investments (and self-financing) of public enterprises and economic authorities.

² Investments by central and local government and service authorities (i.e., excluding investments by economic authorities and public enterprises).

^a Also excludes investment and self-financing of public economic authorities.

^b Bank staff estimates.

2.30 On the revenue side, total revenues are expected to remain about constant relative to GDP, falling slightly from 31.8 to

30.1 percent of GDP in real terms, with smaller current revenues and larger capital revenues presumably a result of sales of assets. The share of tax revenues is expected to rise slightly (from 17.9 to 18.3 percent of GDP), while grants are projected to decrease (from 1.7 to 0.8 percent of GDP).

2.31 The projected financing of the public deficit relies principally on the revenues from social security and pension funds. External debt flows are projected to be negative, with repayments remaining about constant (LE 3.9 billion in FY92 rising only marginally to LE 4 billion in FY97), and new disbursements falling slightly (from LE 1 billion in FY92 to LE 0.9 billion in FY97). Given the liberalization of the capital markets, reducing the budget deficit and the costs of borrowing is not only important in terms of guiding long-term resource allocation efficiently, but it is also a way of reducing the uncertainties in the financial markets.

2.32 Balance of Payments. The resource balance and the balance of goods and non-factor services are projected to improve between FY92 and FY97. The resource balance deficit is projected to shrink to 2.8 percent of GDP (Table 2.4). This improvement is predicated on a 6 percent annual growth in the volume of goods exported, with the export volume of manufacturing and agricultural goods growing fastest, at 16 and 9.5 percent, respectively, and exports of petroleum and petroleum derivatives declining. The text of the Third Five-Year Plan stresses that the Government will seek to encourage export industries by liberalizing the trade sector and encouraging private initiatives and foreign direct investment (FDI).

2.33 Imports of goods are expected to grow at the relatively low rate of 3.0 percent, with consumer and capital goods imports growing slowly (1.7 percent and 1.3 percent annual growth respectively); imports of intermediate goods are expected to grow faster at 4.5 percent a year (all in volume terms). As a result, the merchandise export to GDP ratio is expected to rise slightly, while the share of imports declines from 37.3 to 33.3 percent of GDP. While the expected export performance is ambitious, especially in products with a high value-added content, it is unclear whether the low projected import growth can support the target increase for GDP, particularly for capital goods - the implicit elasticity of imports of goods and non-factor services with respect to GDP growth is only about 0.6 during the Third Plan. In addition, the low projected growth for consumer goods imports raises questions about the extent of the planned liberalization of imports. Revenues from tourism are expected to grow very rapidly at an average rate of 11.1 percent a year.

2.34 The current account, including grants, has moved from a deficit of about 7.5 percent of GDP in FY90 to a surplus of 7.3 percent of GDP in FY92. This improvement is expected to be stabilized during the next five years as the current account balance is projected to generate a surplus of 1.9 percent of GDP by FY97 (or 0.8 percent of GDP when official grants are excluded). These

Table 2.4: Egypt: Balance of Payments Summary, 1982-97¹

Share of GDP (Percentage)	FY82	FY87	FY91	FY92	Third Plan	
					FY92 (projected) ^{2,3}	FY97 (projected) ^{2,3}
Exports of GNFS	24.8	15.9	28.5	26.6	29.5	30.5
Agricultural	1.8	1.3	0.7	0.7	1.2	1.4
Petroleum	10.7	2.5	6.0	4.6	6.9	5.2
Industry	2.6	2.5	5.2	4.9	4.2	6.9
Non-factor Services	9.7	9.6	16.6	16.6	17.2	17.0
Imports of GNFS	40.4	28.4	42.5	38.3	37.3	33.3
Consumer Goods ⁴	13.3	10.6	12.2	10.4	8.3	6.9
Intermediate Goods	11.0	6.4	13.0	10.3	14.0	13.5
Capital Goods	9.4	5.3	9.7	7.5	7.3	6.0
Non-factor Services	6.7	6.0	7.6	6.8	7.7	6.9
Resource Balance	-15.6	-12.5	-14.0	-11.6	-7.8	-2.8
Factor Services Balance	-2.6	-1.3	-5.0	-0.3	-3.3	-4.0
Receipts	1.8	2.3	4.3	3.5	1.8	1.7
Payments	4.5	3.6	9.3	3.9	5.1	5.6
of which Interest Due	4.1	3.9	9.2	3.8	3.6	4.3
Transfer Balance	8.3	8.5	11.6	15.4	12.8	8.7
Receipts	8.3	8.5	11.6	15.4	12.8	8.7
Workers Remittances	8.1	8.5	11.5	15.3	9.3	7.6
Other Current Transfers (incl. Interest Income)	0.2	0.1	0.1	0.1	0.0	0.0
Current Account Balance						
Before Official Transfers	-9.9	-5.2	-7.5	3.5	-1.8	0.8
Official Transfers	2.1	2.7	14.8	3.8	3.5	1.1
After Official Transfers	-7.8	-2.5	7.4	7.3	1.7	1.9

Volume Growth Rates (percent change per year)	First Plan	Second Plan	Third Plan
	FY83-87 (actual)	FY88-92 (actual)	FY93-97 ² (projected)
Exports GNFS	-1.0	4.6	6.0
Agricultural	4.7	-9.2	9.5
Petroleum	-5.8	0.9	-0.5
Industry	3.7	6.1	16.0
Non-factor Services	-1.6	7.3	5.1
Imports GNFS	-3.5	1.6	3.0
Consumer Goods	1.6	-5.2	1.7
Intermediate Goods ⁴	-7.2	5.6	4.6
Capital Goods	-9.5	3.1	1.3
Non-factor Services	-1.1	12.6	3.0

Sources: Ministry of Planning for Third Plan projections; World Bank estimates for historical.

¹ FY82, FY87, FY91 and FY92 data are actual based on World Bank and IMF estimates.

² Projections are based on the Ministry of Planning, Third Five-Year Plan documents, April 1992.

³ The Plan's assumed exchange rate for FY92 and FY97 Plan projections is LE 3.3 per US Dollar.

⁴ Includes imports of petroleum.

Note: Estimates for exports and imports by Ministry of Planning differ from those by the Central Bank of Egypt; the former's data on exports and imports include both monetary and in kind transactions by joint-venture foreign oil companies engaged in exploration and production in Egypt, while the latter's data exclude such transactions.

projections are predicated on a rising interest bill on foreign debt, with interest payments increasing from 3.6 to 4.3 percent of GDP between FY92 and FY97. In FY97, the interest on external debt is projected at LE 7.5 billion (or about \$2.3 billion at today's exchange rate), up from LE 4.9 billion in FY92 (\$1.5 billion). This implies an average increase of 8.8 percent a year, which can be due to either an increase in the average interest on external loans, or an increase in the external debt ratios.¹⁵

2.35 On the other hand, the growth in workers' remittances is projected quite conservatively, at 1.2 percent a year. This is surprising given the recent experience with private reflows in the wake of liberalizations of the financial and foreign exchange markets, but the text of the Third Five-Year Plan argues that this source of revenues is volatile and should not, therefore, be counted on. Foreign grants are expected to shrink over time, from LE 4.7 billion in FY92 (or \$1.4 billion) to LE 1.9 billion in FY97 (or \$0.6 billion), reducing their share of total revenues from 6.4 percent to 1.4 percent.¹⁶

2.36 Private Sector Development. Recently, data for aggregate investments and GDP have been revised upwards by MOP so as to include new estimates of the size of the informal sector. According to those figures, which are in current prices, the share of the private sector in aggregate investment expenditures averaged 39 percent during the First Five-Year Plan (FY83-87), which increased to an average of 42.8 percent during the Second Five-Year Plan (FY88-92). Applying the revised investment shares of FY92 to aggregate investment figures from World Bank and IMF sources, it appears that during the period of the Second Five-Year Plan public investment stagnated in real terms as a result of shrinking revenues and the attempts by the Government to restrict its budget deficit. Private investment, on the other hand, grew at an average 11.5 percent a year in current prices, fueled to a large extent by a construction boom. At the same time, the revised GDP figures indicate that the share of the private sector in total value added (both in current prices) increased in the past decade, from 51 percent in FY82, to 63 percent in FY87, and to 60 percent in FY92 (Table 2.5).

2.37 It is difficult to gauge the expected change in the relative sizes of the private and public sectors over time using the information provided by the Third Five-Year Plan. Value-added projections, which are disaggregated into private and public sources, are provided for only the first and last year of the plan. Similarly, aggregate investment figures are provided only for the first and last year of the plan.

¹⁵ Since the budget accounts imply a reduction in the debt ratios (net flows are projected to remain at about minus LE 3 billion per year), one must assume that it is the interest charged on new loans that is projected to increase. But since the capital account projections are not presented in the Third Five-Year Plan, it is not possible to separate these two factors.

¹⁶ These projections are, however, larger than in the projected budget, implying that some of the grants are expected to be dedicated to the economic authorities (which are excluded from the Plan's budget projections) rather than to the central and local governments.

Disaggregated investment figures (by investor type) are only provided for the five-year totals. In addition, they include an unusual category of investments, which accounts for LE 4.1 billion, that is difficult to classify - "potential private sector investments." The Third Plan documents explain that these projects will be undertaken by the PEs unless the private sector accepts to take them over. However, it is not clear whether this choice will have to be made in the context of the privatization program or for stand-alone projects. In the remainder of this chapter, these investments will be considered part of the PE sector.

Table 2.5: Egypt: Investment by Sector: 1982-1997

	Investment to GDP Ratios (percentages)				
	Current Prices		Constant 1991/92 Prices		
	First Plan	Second Plan	Third Plan		
	1983-87	1988-92	1992 est.	1997 Plan	
Total Investment	31.26	24.79	18.06	17.43	
Public Investment	18.92	14.19	9.67		
Business Investment	12.34	10.60	8.39 ^a		
		<u>1982-87</u>	<u>1987-92</u>	<u>1993-97</u>	
Incremental Capital to Output Ratios:		4.70 ^b	6.00 ^b	4.84	
ICOR, Public				14.39 ^c	
ICOR, Private				2.71	
		<u>FY82</u>	<u>FY87</u>	<u>FY92</u>	<u>FY97</u>
Memo Items:					
Private GDP/Total GDP ¹	51.0	63.0	59.8	64.6	
Capital Goods Imports/Investment	36.2	29.9	45.6	40.7	

Sources: World Bank staff calculations based on Ministry of Planning and National Investment Bank data for the Third Five-Year Plan.

¹ Does not include the PEs, or the "Potentially Private Sector" category (during the Third Plan).

^a Including public enterprises.

^b World Bank staff estimate.

^c The size of the public sector ICOR may be exaggerated since public sector investment is likely to contribute to private sector output, as well as public sector output; also reflecting a higher share of investments going to social sectors than before.

2.38 Between FY92 and FY97, the share of the private sector is projected to increase from 60 to 64.6 percent of total value added. This represent an average annual increase of 6.7 percent for the private sector, against a smaller growth of 2.4 percent for the public sector. If, on the other hand, the process of privatization is accelerated (and extended to utilities), it is possible that the share of the private sector in total value added could approach 70 percent by the end of the Third Five-Year Plan period. Of the total, cumulative five-year

investment, the private sector's projected share (excluding the Law 203 PEs and the economic and service authorities) is 45.5 percent and that of the public sector is 54.5 percent (including the economic and service authorities, as well as the PEs and the "potentially private investment" category). Of this latter share, the non-private business sector companies (all the PEs, i.e., including those not subject to Law 203 and "potentially private investments") constitute 12.7 percent of the total investment planned for the period FY93-97.

**Table 2.6: Egypt: Projected Total Investments, FY93-FY97
(1991/92 prices)**

	Level (LE billions)	Share (Percent)
Total	154.0	100
Total Public Sector	64.6	42
Central and Local Government	19.1	12
Service Authorities	14.0	9
Economic Authorities	31.5	20
Total Public Enterprises	19.4	13
PEs (Law 203)	9.1	6
PEs (non-Law 203)	6.2	4
"Potentially Private"	4.1	3
Total Public Sector and PEs	84.0	55
Private	70.0	45

Source: MOP and NIB.

2.39 Productivity Gains. Clearly, the strategy of the Third Five-Year Plan is to emphasize productivity increases rather than investment as the key factor in the growth process. The Third Plan provides general indications of how this is expected to be achieved, first by increasing the usage of existing idle factors of production (such as the unemployed or spare productive capacity), by increasing the productivity of capital and labor, by improving technology and by efficiency gains that would result from the reform program. Implicit productivity measures, such as the incremental capital to output ratio (ICOR) do, however, throw some light on the realism of the underlying assumptions. Estimated at constant 1991/92 prices, the ICOR that is implicitly assumed in the Third Five-Year Plan amounts to 4.8, which can be further disaggregated into an private sector ICOR of 2.7, and a public sector ICOR of over 14.¹⁷ World Bank staff estimates of the

¹⁷ The size of public sector ICOR is partly explainable by the fact that it applies mostly to central government operations where value added is mainly wages. In addition the "social" public sector ICOR may be exaggerated because the way it is estimated does not take into account the beneficial effects of public investment on private output.

ICOR during the First and Second Five-Year Plans are respectively 4.7 and 6. This points out the difficulty of achieving the ICOR under which the Third Plan is operating over the short run, though it is quite feasible over the medium term. The ICOR can be expected to increase in the initial phase of the reform as economic entities adjust to a new set of relative prices. However, to achieve the ambitious ICORs implicitly assumed under the Third Five-Year Plan, the reform program has to be accelerated, especially in the areas of trade liberalization, fiscal simplification, the regulatory framework for investment, the privatization effort and capital market development as envisioned under the second phase of the Government's reform program. In addition, public investment must be carefully allocated to its most productive use.

2.40 Consistency of the Third Five-Year Plan. It seems rather difficult for the overall investment target of LE 154 billion to be met with the level of gross fixed investment that is assumed under the macroeconomic framework of the Third Plan.¹⁸ Thus, for the total target to be attained investment would have to be higher during the Third Five-Year Plan than at the end of the plan period. This does not appear to be very likely, especially given the fact that private investment is likely to stagnate initially until the reform program is well advanced and its credibility established.

2.41 To give an idea of the orders of magnitude involved, three different scenarios are considered. Although these scenarios are not explicitly dealt with in the Third Five-Year Plan document, they are implicit in the aggregate projection for investment, since the precise time paths for public and private investment are not delineated on a year by year basis. In the first scenario, total investment is assumed to grow at a constant rate during the Third Five-Year Plan. In the second scenario, the supply response from the private sector is assumed to remain weak during the first two years of the Third Plan period, but becomes strong in the later years. In the third scenario, it is assumed that the private sector does not respond at all to the new incentives. In all cases, cumulative investment is constrained to the projected LE 154 billion. The implied total, public, and private investments for FY97 are computed. Two aspects of these scenarios are of interest: the implied share of total investment in GDP and the relative shares of public and private investment at the end of the plan period, which measures the extent of success of the ongoing policies intended to favor the private sector.

2.42 The key conclusions that arise are that the projected investment ratio assumed under the Third Plan may be too low to generate the projected growth, that the lagged response (by the private sector)

¹⁸ Under the Third Plan, projected total gross domestic capital formation is LE 24.6 billion in FY92 and LE 30.5 billion in FY97, while the total investments projected during FY93-97 amount to LE 154 billion. Even if total investment were to reach LE 30.5 billion each year during the Third Five-Year Plan, the total would amount to LE 152.5 billion, a bit short of the total target.

scenario represents the most likely way to hit the aggregate investment target, and, for this scenario to be feasible, that the government should refrain from increasing public investment in case private investment is slow responding to the new incentives. The basic recommendations that emerge are: (i.) accelerate the regulatory reforms to ensure a faster private sector response; and (ii.) increase the quality, but not the quantity, of public investments.

2.43 Scenario 1: Constant Growth in Investment. Starting from a base of LE 24.6 billion in FY92, total investment would have to grow at 7.6 percent a year (instead of 4.6 percent a year assumed in the Third Five-Year Plan) in order for the cumulative investments during FY93 to FY97 to add up to the cumulative target of LE 154 billion. This implies that total investment would have to increase to 20.3 percent of GDP rather than the 17.4 percent of GDP level projected under the Third Plan.¹⁹

Table 2.7: Scenario 1: Constant Growth in Investment Model

	Level in FY97 LE billion (1991/92 prices)	Share in Total (percentage)	Share in GDP (percentage)	FY93-FY97 Growth (% per year)
Total investment	35.45	100.00	20.26	7.58
Public investment ¹	19.54	55.10	11.16	8.20
Private investment	15.91	44.89	9.09	6.85
Consumption ²	143.00	..	..	3.21

Source: World Bank staff estimates.

¹ Includes economic and social authorities, PEs and "potentially private investment."

² Consumption is computed as a residual, under the assumption that the resource balance is as projected in the Third Five-Year Plan (see Table 2.2).

2.44 Scenario 2: Lagged Supply Response. In the constant growth model developed above, public investment remains larger than private investment through FY97. The Egyptian planners believe, however, that although the private sector is likely to respond slowly to the liberalization policies that are being implemented, the overall targets

¹⁹ Under this scenario, to maintain equilibrium either the growth rate of total consumption will have to be smaller than assumed or the current account deficit will have to be larger. With a current account deficit as assumed, consumption growth must average a 3.2 percent increase per year (compared to a planned 4.2 percent increase), leading to stagnating consumption per capita during the period covered by the Third Plan. The constant growth model is also used to compute the growth rates of private and public investment with the goal of achieving the cumulative targets for each category. Using the FY92 shares as a base and assuming constant growth rates, it is possible to estimate the growth rate for each category of investment that would allow the target for the five-year aggregate to be met by the end of the Third Five-Year Plan (Table 2.7). Public sector investment (including the economic and service authorities and the PEs) would have to grow at about 8.2 percent per annum, increasing its share of GDP from 9.6 to 11.2 percent between FY92 and FY97. Private sector investment would have to grow at a rate of 6.85 percent a year on average, increasing its investment to GDP ratio slightly from 8.45 percent in FY92 to 9.1 percent in FY97.

of the Third Five-Year Plan are consistent with a situation where private investment would exceed public investment by FY97. To illustrate this possibility, it is assumed that in the first two years of the Third Plan, private investment grows slowly (at 0 and 2 percent during FY93 and FY94, respectively) while public investment grows faster (primarily to restructure enterprises that would be later privatized). Under such assumptions, reaching the overall investment targets requires private investment to surge from FY95 onward, growing at an annual rate of 11.6 percent, while public investment grows at only 2.2 percent a year.²⁰ By FY97, private investment would stand at over half of total investment, constituting 10.3 percent of GDP (Table 2.8).

Table 2.8: Scenario 2: Lagged Supply Response Model

	Level in FY97 LE billion (1991/92 prices)	Share in Total (percentage)	Share in GDP (percentage)	FY93-FY97 Growth (% per year)
Total investment	35.72	100.00	20.40	
Public investment ¹	17.76	49.73	10.14	2.16
Private investment	17.96	50.27	10.26	11.60

Source: Staff estimates.

¹ Includes economic and social authorities, PEs and "potentially private investment."

2.45 Scenario 3: No Supply Response. While the second scenario seems to represent what the Egyptian planners expect to happen over the next few years, it is also helpful to consider a more pessimistic scenario, under which the private sector's response is disappointing. If significant reforms on the real side are not achieved, for example, then the targets of the Third Five-Year Plan would end up being far too ambitious, especially with regard to private investment. The danger under this situation would be for the government to attempt to make up for this lack of supply response. Assuming that private investment grows at a rate of only 2 percent a year and that the public sector picks up the slack so as to achieve the overall targets, and using the ICORs assumed by the Third Five-Year Plan, output growth will be only 3.9 percent on account of the smaller projected productivity in the public sector. In this case, consumption would only grow by 1.7 percent, implying a slightly decreasing path of consumption per capita (Table 2.9).

2.46 Financing of Investment. The Third Five-Year Plan indicates that, in aggregate, total investment is expected to be financed mostly from domestic sources, with NIB and other domestic sources leading with 48 percent of total financing, followed by self-financing with 38 percent of the total. Foreign loans and grants account for less than 15

²⁰ The behavior of consumption is as in scenario 1.

percent of the total (Table 2.10). There are, however, major differences among the investor types (the structure of finance is broadly similar among the PEs and the "potential private sector").

Table 2.9: Scenario 3: No Supply Response Model

	Level in FY97 LE billion (1991/92 prices)	Share in Total (percentage)	Share in GDP (percentage)	FY93-FY97 Growth (% per year)
Total investment	35.9	100.0	21.5	
Public investment ¹	23.2	65.6	14.1	12.1
Private investment	12.7	34.4	7.7	2.0
GDP ²	165.0			3.9
Consumption ³	133.0			1.7

Source: Staff estimates.

¹ Includes economic and social authorities, PEs and "potentially private investment."

² Assumes a private sector ICOR of 2.7 and a public sector ICOR of 14.4.

³ Computed as a residual assuming that the resource balance is as projected in the Third Five-Year Plan (Table 2.2, above).

2.47 Private firms are expected to draw mostly from their own funds (self-finance accounts for 67 percent of investment outlays). This implies a large reduction in the debt to equity ratio of the private sector, which is consistent with the initial effects of financial liberalization. However, for this to happen, private investors would have to invest overall about \$14 billion of their own funds, i.e., about \$2.8 billion a year. In FY92, the private sector produced about 60 percent of GDP, amounting to about \$24.7 billion. Thus, in the absence of capital inflows from abroad, the expected "retained earnings" would have to represent about 9 percent of the value of the private's sector production, which is large by international standards.²¹ On the other hand, private short-term capital inflows in FY92 amounted to about \$2.3 billion, and it is believed (but there is no firm estimate) that private Egyptian capital invested abroad is perhaps as much as 20 times this amount. It is clear that the authorities are counting on major capital reflows by the private sector during the Third Plan. This raises two issues. First, the capital flows observed to date may represent only a one-shot portfolio adjustment. For this movement to continue over time, the private sector's confidence in the program and in the fiscal adjustment must be increased dramatically. Second, flows of this magnitude do not seem consistent with the balance

²¹ Indeed, the perfect competition model, for example, would lead to zero profits and thus no possibility for such retained earnings. But even if profits were at about 20 percent of the value of production, the projections of the Third Five-Year Plan projections would imply that half of these profits would be reinvested in the absence of capital flows from abroad.

of payments projections.²² In all likelihood, if the private sector does repatriate such a large amount of its savings from abroad, imports would also have to increase more than projected, both to satisfy the demand for capital goods and to accommodate a deficit in the balance of payments.

2.48 The Government (including the central and local governments and the service authorities) is expected to draw funds mostly from NIB. In the medium term, this does not seem consistent with the hard budget constraints being imposed on the service authorities. In addition, and according to the Plan documents, under the Third Five-Year Plan, NIB will, over time, become a traditional investment bank, financing the private and public sectors alike; financing of investments will be based on the soundness of projects rather than on whether they are with private or public sector firms. Clearly, there is an urgent need for detailed analysis concerning the future role of the NIB to determine how it should compliment, rather than compete with, commercial banks and other financial intermediaries in financing investment projects in Egypt. To the extent that NIB continues to finance loss-making enterprises, the size of the quasi-deficit will increase, reducing the confidence of the financial market in the solvency of the public sector. For hard budget constraints to be binding, the source of finance for the public enterprises must be moved to the marketplace. However, a clear need remains for a development bank to finance public infrastructure and social projects under the supervision of the financial authorities.²³

**Table 2.10: Egypt: Financing of Investment
During the Third Five-Year Plan
(percentage shares)**

	Self- Financing	Domestic	Foreign Grants	Foreign Loans	Total
Total	38.2	47.6	4.3	9.9	100.0
Private sector	67.3	30.8	0.5	1.4	100.0
Public sector					
Government	12.0	67.4	12.3	8.3	100.0
Economic authorities	27.9	38.0	6.8	27.3	100.0
Public Enterprises	55.1	30.6	1.0	13.3	100.0
Joint ventures	54.7	31.6	7.4	6.3	100.0

Source: MOP and staff estimates.

2.49 Finally, the economic authorities and the PEs are expected to draw a large share of their financing from foreign loans and grants

²² Unless government debt were retired massively, which is not consistent with the projected budget.

²³ For a detailed analysis see World Bank, Egypt: Financial Policy for Adjustment and Growth, op. cit.

(34 percent and 21 percent, respectively). This indicates a bias in the distribution of foreign savings among economic units.

2.50 Savings Mobilization. Using the national accounts, the balance of payments, and the budget tables, it is possible to compute the projected saving rate for the consolidated business sector, including the private sector, the PEs, and the economic and service authorities.²⁴ The private sector's surplus is expected to decline mainly through a reduction in both the investment and savings levels of the business sector. It reflects, to some extent, the inclusion of loss-making enterprises in this group, and the expected 3 percent of GDP reduction in workers' remittances (see Table 2.11). Overall, the business sector is expected to reduce its (national) saving from 22.2 percent of GDP in FY92, to about 13.6 percent of GDP by FY97. However, a recent World Bank report estimates that national savings can be as high as 25 percent of GDP in the long run (i.e., 6 percentage points more than envisioned under the Third Plan), in the context of a scenario with fiscal adjustment and a significant rise in private savings resulting from broad based financial reforms.²⁵ Indeed, with a liberalized financial market and increased private risks, one would

Table 2.11: Egypt: Flow of Funds, 1982-1997
(percentage shares of GDP)

	Actual				Projections	
	FY82	FY87	FY90	FY92	--Third Plan-- FY92	FY97
Public Surplus ¹	-23.50	-19.31	-16.46	-6.42	-5.55	-2.20
Investment ²	21.85	19.94	12.83	11.37	6.50	7.93
Saving ³	-1.65	0.63	-3.63	4.95	0.95	5.73
Business Sector Surplus ⁴	15.70	18.07	9.06	13.74	7.23	4.08
Investment ²	9.05	4.76	9.06	8.50	11.58	9.50
Saving	24.75	22.83	18.12	22.24	18.81	13.58
Current Account Balance (incl. official transfers)	-7.80	-2.50	-7.40	7.32	1.68	1.88

Source: World Bank staff estimates; MOP and NIB.

- ¹ PEs and economic and service authorities are included in the Public Sector before FY92, but moved to the Business Sector for the third plan period.
² Public and Private Investment are computed on the basis of shares of private and public investment in total investment as estimated by MOP.
³ Computed as a residual.
⁴ Computed as a residual between Current Account and Public Surplus.

²⁴ The information provided in the national accounts, balance of payments, and the budget (first and last years only) cannot be used to derive the flow of funds between the private and the consolidated public sectors because the budget accounts exclude the economic and service authorities and the PEs.

²⁵ See World Bank, Egypt: Financial Policy for Adjustment and Growth, op. cit.

expect an increase, rather than a decline, in private savings. The financial and foreign exchange reforms under way, and the gradual erosion of the image of an all encompassing welfare state, are likely to lead to larger than projected increases in private domestic savings and in workers' remittances. An acceleration of the reforms on the real side should allow for further repatriation of flight capital. Finally, it is not clear why the Third Five-Year Plan assumes that the private sector would not be borrowing abroad (without any government guarantees) and would rely instead on drawing down its savings.

2.51 The Nature of the Planning Process. Planning in Egypt is undergoing changes due to the ongoing liberalization. The concept of the plan itself should evolve and adapt to the new situation. It is not possible to "plan" the private sector response, and past liberalization experiences have shown that growth has often come from unexpected sources. Attempting to direct private investment, as was done in the past, for example through investment licensing schemes, defeats the purpose of the reform program. The course of action should thus be to put supportive policies in place to elicit, rather than to command, a response. In addition to its usual role of setting the level and composition of government investments, the Third Five-Year Plan should aim at publicizing the Government's intentions with respect to future policies and to the changing regulatory framework. It also should carefully avoid sending the wrong signals. In this the Third Plan document does a relatively good job, going to great length to explain the difference between planning projects and planning policies, and using regulatory and fiscal instruments to direct private investment into socially productive areas.

2.52 Summary. Three major conclusions emerge from the analysis of the macroeconomic framework of the Third Five-Year Plan.

2.52.1 (i.) First, the targeted growth rate of GDP under the Third Plan is on the optimistic side given the current slow-down in activity and the fact that the economy is likely to go through a transition phase for one to two more years. Although optimistic, however, the targets are not unrealistic. If the pace of reforms were to accelerate, as the Government intends to do in the second phase of its reform program, there could be a significant and sustained private sector response which would result in significant acceleration of economic growth over the medium term. What is at issue is the fact that the planners are hoping to achieve such a growth target with a fairly low investment to GDP ratio.

2.52.2 (ii.) Second, establishing the credibility of the reform program is crucial for the emergence of a rapid and strong supply response, and the Government must aim at increasing, as much as possible, the level of confidence of the private sector. Although the document of the Third Five-Year Plan goes a long way towards meeting this goal, it also sends

some weak (or even wrong) signals, for example, when it defines projects that can be "potentially" left to the private sector. "Planning" for private investment on a sector by sector basis, while excluding private investment from some key sectors (e.g., telecommunications and utilities), could slow down the supply response. In addition, it would be extremely helpful to potential investors if the Government were to inform the private sector of the details of its comprehensive reform program over the next three years.

- 2.52.3 (iii.) Third, to attain the targeted economic growth rates, the investment ratios must increase to about 20 percent of GDP rather than at the projected 17.5 percent of GDP. Raising resources does not seem to be the major constraint on private investment if the fiscal retrenchment is pursued and the debt reduction agreement is fully implemented. Indeed, capital reflows, workers' remittances, foreign direct investment and bank credits are likely to be available as long as profitable investment opportunities exist. Thus, rather than financing, the real constraint in the medium term is likely to lie in the perceived profitability of investment by the private sector. This points to the importance of tight monetary and fiscal policy, including a reduction in the losses of public enterprises brought about by financial and real reorganizations.
- 2.52.4 (iv.) Fourth, increasing the efficiency of investment must remain the principal objective of economic policy. To achieve this aim, the Government should accelerate the reform of the regulatory framework. In addition, the sectoral allocation of public investment must be carefully determined so as to maximize its effect. (This topic forms the core of the sectoral reviews in Chapters V through XI.)

**CHAPTER III: PUBLIC SECTOR INVESTMENT:
PAST AND FUTURE**

Summary

There is a clear need for substantial retrenchment in the role of the public sector in the Egyptian economy. This is one of the main goals of the Government's reform program. The public sector has been suffering from fragmentation and misallocation of resources. The record of the past decade's performance shows that public sector operations were responsible for significant budgetary losses as well as suboptimal rates of productivity growth, which led to a loss of creditworthiness and low rates of GDP growth. The state can no longer afford to maintain its overwhelming role in the productive sectors, nor can it afford to pursue the role of major provider of jobs in the economy. In the 1990s, the share of public sector investment in the economy would stabilize at lower levels than in the 1980s due to a redefinition of the public sector's role within the economy and the shrinking resources available to it. Conversely, it is expected that the private sector will expand substantially its role in the economy over the medium- to long-term, provided that macroeconomic stability is maintained and the Government's regulatory reforms and privatization program proceed as planned. The size and allocation of public investment over the Third Five-Year Plan seem to be in line with a reduction in the role of the state in the competitive and tradeable sectors of the economy. There still is, however, substantial room for crowding-in private sector investment in the nontradeables and infrastructure sectors, such as land reclamation, urban development and social services, as well as in utilities, including electricity and telecommunications. The expected change in the role of the state in the economy is likely to have a substantial positive impact on the allocation of resources, the efficiency with which they are utilized and the long-term growth performance of the economy.

A. Introduction

3.1 Starting in the early 1960s and continuing until the early 1980s the Egyptian economy was dominated by the public sector. The share of public investment in GDP in the early 1980s was about 20 percent, as compared to a share of 7.5 percent for the private sector. However, since FY87 the share of public investment in GDP has declined as a result of shrinking revenues and attempts by the Government to restrict its budget deficit. With the adoption of the

Economic Reform and Structural Adjustment Program (ERSAP), the share of public sector investment (excluding public enterprises) in GDP is expected to stabilize around 7.5 percent in the medium term. As discussed in Chapter II, a substantial downward adjustment in the size of public sector investment relative to GDP has already taken place over the last few years, from about 23 percent of GDP in FY88 to 11.4 percent of GDP in FY92. But despite the decline in its level, public investment expenditures continued to favor productive/commercial sectors at the expense of human resources and social services sectors; in FY91, capital expenditures on health, education and public works together amounted to only 16 percent of the total investment budget, nearly the same share as that of the manufacturing sector alone. However, the Government's sectoral investment allocation, in the context of the Third Plan, is changing, as investments are shifted to areas in which the Government maintains a comparative advantage and to high priority projects.

3.2 The main challenge facing the Government over the medium term will, therefore, be the sectoral allocation of its investments, as well as the quality of the projects within each sector; it will be necessary to maximize the rate of return of the entire investment portfolio while staying within the budget constraint required by the macroeconomic framework of the reform program. Specifically, to reach a sustained non-inflationary growth of GDP of 4-5 percent per year over the medium term, the scope of public investment must be narrowed to those areas in which the public sector has a clear comparative advantage, the efficiency of public sector investment needs to be raised and the role of private investment must be substantially enhanced. Sections B and C below discuss the past performance of the public sector and the rationale of the Government's reform program, respectively. The Third Five-Year Plan is discussed in Section D, while Section E analyzes the "new role" of the state.

B. Performance of Public Sector Investment

3.3 Size and Structure of Egypt's Public Sector. In spite of significant progress toward liberalization since the mid-1970s, the Egyptian economy continues to be dominated by its oversized public sector, which - broadly defined - includes central and local government, service and economic authorities, and financial and nonfinancial public enterprises (see Box 3.1). In FY92, the public sector still accounted for about 40 percent of aggregate employment, more than half of the aggregate employment wage bill (FY90) and about 40 percent of GDP (see Tables 3.1 and 3.2).

3.4 Employment. The Government's policy of guaranteed employment for graduates of secondary schools and universities has meant doubling the workforce in central and local government from 1.589 million in 1977 to 3.077 million in 1987. Rather than promote the role of government as provider of expanded and improved social services in education and health, these additional jobs have mostly found their way into the government administration, causing tremendous problems of

Box 3.1: The Structure of Egypt's Public Sector.

There are four major groups of public sector activity in Egypt: central and local government administration, which includes the social services; service authorities; economic authorities; and public enterprises. Employment in administration and social services (excluding the armed forces) is second only to agriculture, with close to 3.3 million workers in 1992. (Agricultural employment was 4.6 million in 1992.) Surplus labor is a key feature of the public services sector, a costly legacy of the Government's guaranteed employment policy, which was started in the 1960s. Thus, for every occupation in the legislative, administrative, taxation, education, health and policy functions of government, there are two positions in the clerical and other service occupations.

The second group of state-owned entities are the 59 service authorities, with 411,000 employees. These authorities are attached to central government and their finances are part of the state budget. They include the institutions of higher education (primary and secondary schools are attached to local government), science and technology, the antiquities department, university hospitals, the High Dam Authority and the sanitary sewerage department.

The third group includes the 50 economic authorities, which are semi-autonomous corporations operating in the area of public utilities, the two rent-earning monopolies (the Suez Canal and Petroleum), social and health insurance, as well as the General Authority for Supply Commodities (GASC), which imports and distributes basic necessities at subsidized prices. In 1992, total employment in this group was 455,000, the largest employers being the railways, telephone, bus transport, electricity, post office and social insurance. Although these corporations do not suffer from excessive overemployment, a major problem facing the utilities has been the very low tariffs set by the Government for their services, causing huge losses for many of them. Since 1980, the accounts of the 50 economic authorities have been separated from the state budget so that only the net results of their operations, along with those of public enterprises (the fourth group), appear as transfers in the budget.

(Continued on page 58.)

The fourth group comprises the 399 financial and non-financial public enterprises which were formed during the socialist era either through the merger of nationalized firms or through the establishment of new state-owned industries. This group, which employs about 1.3 million workers, operates in all of the tradeables and competitive sectors of activity, with a major concentration in manufacturing (more than half of group assets and employment), followed by construction, trade and transport. According to Law 203 (old Law 97) of 1991, the 314 "affiliated companies" have been given full autonomy to operate as businesses and have shifted away from the authority of line ministries. These companies now operate under 17 "holding companies," each with diversified portfolios. These holding companies are responsible for managing the state's portfolio of assets in the majority of public enterprises. Those public enterprises which are not subject to Law 203 are affiliated with finance and insurance, military production, the Suez Canal and petroleum corporations. As a result of the public enterprise reform and privatization program, the size of the public enterprise sector is expected to shrink significantly over the next three years.

Using the term "public sector" to denote all four groups of public institutions (administration, service and economic authorities and public enterprises), it can be noted that together they provide employment for more than half (52 percent) of the labor force outside of agriculture. According to the 1986 census and in comparison with 1976, the share of the public sector in total employment declined to 17 percent in construction (from 23 percent in 1976), 40 percent in transport (from 52 percent in 1976), and 46 percent in finance and insurance (down from 72 percent in 1976). On the other hand, the share of the public sector continued at its high level of 48 percent in manufacturing and 84 percent in "other services" (which include public and social services). The public sector accounts for only a small share of employment (1.3 percent) in agriculture, tourism and retail trade.

overstaffing and reducing real incomes for all government employees. Starting in the late 1980s, the Government has substantially reduced its annual recruitment, but, nevertheless, public sector (broadly defined) employment grew by 21 percent in the period 1981-1987 and 16 percent in the period 1987-92; the burden of disguised unemployment is still very high in the central government.

3.5 The estimate of a significant surplus employment in central and local government administration is arrived at by an examination of the size and occupational structure of employment and economic activity as given in the 1986 census (see Annex Table 3.1, Vol. II). Although the census data only distinguishes between two categories of the public sector: "government" (which includes central and local administration, the social services and service and economic authorities) and "public enterprises," it is possible to separate the data for the social services as well as for the two major groups of economic authorities (electricity, gas and water, and transport and communications) from "government" by using the various detailed tabulations of the census. If the conservative assumption is made that there is no underemployment in the well-defined job categories that are relevant to the specific functions of each of the five public sector groups shown in the annex table, then the relative importance of non-specific job descriptions and occupations could be used as a measure of the degree of underemployment in that group. Job-specific occupations in administration, such as legislative officials, general managers, accountants, telephone operators, internal security, drivers, and telephone operators, account for only 25 percent of total employment, while non-specific occupations such as "other clerical workers" (198,000) and building caretakers (150,000) are mostly redundant personnel. It is also obvious that the Government has grossly over recruited in such professional categories as engineers, accountants and jurists (together, 148,000) as well as in clerical positions such as executives, bookkeepers and typists (together, 241,000). In each of these surplus labor categories, the Government could easily reduce the number of civil servants without any loss in the administrative competence of the various departments.¹

3.6 Trends in the growth of employment in the various divisions of the public sector over the decade of the 1980s confirm that recruitment in the administration has greatly surpassed that of the economic authorities and public enterprises. (See Table 3.1.) In spite of a tremendous expansion in the productive capacity of the utilities over the decade (see para. 3.16), their labor force has increased by 18 percent as compared to an increase of 55 percent in central and local government. Moreover, government administration was already carrying the burden of tremendous surplus labor in the mid-1970s as evidenced by

¹ In contrast, the social services activity of government would seem to suffer from less surplus employment. The category of scientists, doctors, nurses, and teachers (professional and technical occupations) accounts for as much as 73 percent of total employment of just over one million, while administrative occupations account for less than 3 percent of the total. However, two occupational categories are still excessively large: clerical and related workers (119,000) and service workers (96,000). The bulk of surplus labor can again be found in two non-specific occupations: "other clerks" and "building caretakers." The economic authorities are those that suffer least from overstaffing as defined by our assumption, with less than 16 percent employed in non-specific occupations. The public transport and telecommunications sector operates with a seemingly reasonable workforce of 178,000 (in the railways, city bus transport, airports, harbors, Suez Canal, telephone and post office) and one can account for more than 70 percent in relevant occupations such as telephone operators, mail clerks, drivers, conductors, maintenance, engineers and technicians.

a similar exercise analyzing the structure of public sector occupations at the time of the 1976 census.²

Table 3.1: Employment and Wages in the Public Sector

	Employment (thousands)				Wage Bill (LE millions)			
	1981/82	1986/87	1989/90	1991/92	1981/82	1986/87	1989/90	1991/92
Central Government ^a	767	849	918	976	1,012	1,840	n.a.	n.a.
Local Government	1,254	1,861	2,214	2,375	867	2,110	n.a.	n.a.
Service Authorities	264	367	392	411	221	600	n.a.	n.a.
Subtotal ^a	2,285	3,077	3,524	3,762	2,100	4,550	6,064	8,029
Economic Authorities	359	403	424	455	326	772	1,350 ^b	1,605 ^b
Non-Financial Enter.	1,229	1,235	1,245	1,255 ^b	2,308	3,350	4,990	6,080 ^b
Financial Enterprises	78 ^b	79	82	85 ^b	252 ^b	428	620	759 ^b
Total Public Sector	3,951	4,794	5,275	5,557	4,986	9,100	13,024	16,473^b
Total Labor Force	11,759	13,383	14,400	15,268	8,969	16,380	24,707^b	34,100^b
Share held by Public Sector	33.6%	35.8%	36.6%	36.4% ^c	55.6%	55.5%	52.7%	48.3%

Sources: MOF and MOP; Cabinet Public Sector Information Center; World Bank staff estimates.

n.a.: Not available.

^a Excluding defense.

^b Estimated.

^c This would rise to about 42 percent if the ratio is calculated for employment rather than labor force.

3.7 Over the coming decade, the structure of central and local government employment will have to improve in favor of the social services function and at the expense of the administrative functions of government. Since education (with more than 500,000 teachers) is part of local government, this particular sector is likely to grow in line with the goal of universal elementary school education. Restructuring expenditures in the health sector in favor of preventive care and basic health should also mean an increase in the number of paramedics attached to the Ministry of Health. Conversely, the civil service should reduce its labor force substantially through a process that would combine compensation packages for voluntary early retirement, attrition and retraining, thereby allowing for productivity and salary levels to increase in real terms.

3.8 The level of surplus labor in the economic authorities and public enterprises is also significant, though much smaller in absolute and relative terms when compared with government administration. In the public enterprise sector, the practice of forced hiring of workers was a

² See Heba A. Handoussa, "Public Sector Employment and Productivity in the Egyptian Economy," Technical Paper No. 7, ILO Comprehensive Employment Strategy Mission to Egypt, 1980, Geneva.

serious problem in the 1960s and 1970s but has since been discontinued, and enterprises have been encouraged to shed labor through the process of attrition. For example, the group of public enterprises affiliated to the Ministry of Industry succeeded in reducing their labor force from 602,000 to 563,000 from 1985 to 1990, without actively pursuing any explicit policy of firing. It is estimated that 30 percent of labor in the public manufacturing sector is still in surplus and that the process of privatization and restructuring would involve significant labor redeployment over the medium term. Labor mobility must be encouraged if all possible gains from liberalization are to be realized.

3.9 Public Investment and Implementation Capacity. In the past, planned investments by the public sector in Egypt exceeded available finance and implementation capacity. Typically, resources have been thinly spread over a large number of projects. On average, each five-year plan has contained between 3,000 and 4,000 projects. Moreover, about 40 percent of total investment expenditures by the public sector during the First and the Second Five-Year Plans were devoted to the completion of carry-over projects from the preceding period, with some of the projects, particularly the larger ones, suffering from a significant decline in their expected economic rate of return because of long delays in their implementation and subsequent changes in the economic environment. Based on the figures for the final allocations of the Third Five-Year Plan, nearly 37 percent of all allocations for the central and local governments and service authorities (including railways, urban transport, water and sewerage) are for the completion of ongoing projects. It is also worth noting that only 137 of the 3,166 projects contained in the Third Five-Year Plan exceed LE 100 million and 270 exceed LE 50 million, accounting for LE 39 billion (55 percent) and LE 48 billion (67 percent) of the Third Plan's LE 70.8 billion total public investment, respectively.

3.10 Public Sector's Contribution to GDP. It is important to note that, in spite of attempts by the Government to crowd in the private sector since the Infitah, the public sector's share (including enterprises) in economic activity remains high, and has in fact risen since the mid 1980s, from 36.5 percent of GDP in FY87 to 40 percent in FY92. This share by far exceeds the average for mixed economies in both developed and developing countries. In recent years, the public sector's contribution to GDP (not counting Law 43/230 joint ventures) has been about 45 percent in industry and mining (note that this share is based on MOP's National Income Account series used for the Third Plan), more than 33 percent in construction, around 50 percent in transport and communications (nearly 100 percent in telecommunications), 75 percent in banking and 100 percent in electricity (Table 3.2, below).

3.11 Public Sector Efficiency. State-owned enterprises continue to play a major role in the productive and utilities sectors of the economy. The implications of excessive involvement by the state in the economy are lower levels of productivity and incomes than those achievable with a leaner and more efficient public sector. In a dynamic

context, the rate of GDP growth could be raised significantly and growth of employment accelerated if the state was to reduce the scope of its activities and allow an expanded role for the private sector.

Table 3.2: Contribution of the Public Sector to GDP

	1981/82	1986/87	1991/92 ^a
Gross Domestic Product (LE million)	20,628	48,765	125,485
Public Sector	10,050	17,797	50,243
Share of total GDP	48.7%	36.5%	40.0%
Share of Public Sector in Sectoral GDP			
Agriculture	1.6%	1.4%	1.3%
Manufacturing	66.4%	50.0%	42.1%
Electricity	100.0%	100.0%	100.0%
Construction	48.7%	35.1%	33.2%
Transport and Communications	53.9%	56.9%	49.2%
Banking	74.0%	77.0%	74.3%

Source: MOP, Third Five-Year Plan.

^a Estimated.

3.12 There are a number of efficiency indicators that point to the weak performance of the public enterprise sector since the mid-1970s (Table 3.3, below). The financial rates of return have been less than 10 percent since 1982 (book value of capital employed); real output per worker, despite modest improvement in the second of 1980s, remains well below its peak in FY81 and total factor productivity, which grew sharply in the 1970s, has declined. (See Chapter IV for a comparison of productivity performance between private and public sector.) Detailed sectoral and subsectoral studies have shown that enterprise performance has been most uneven, with several enterprises within a given subsector having consistent losses and others achieving only modest profits.³

3.13 In the 1970s and 1980s, the public enterprise sector, including the economic and service authorities, was characterized by a large and growing overall deficit, mounting external debt, low rates of saving, and declining financial rates of return (Table 3.3). In this period, the weak financial performances of those enterprises in industry, transport and power were the principal contributors to the worsening fiscal position of the Government. The overall deficit of the non-financial public enterprises rose from about 1 percent of GDP in the early 1970s to more than 6 percent in the early 1980s and then fluctuated at around 4 percent of GDP, accounting for between 20 and 25 percent of the overall deficit of the central government. The sharp

³ For example, in 1988/89, out of 371 non-financial enterprises, only 16 percent had returns on assets in excess of 10 percent, while more than 50 percent had returns of 5 percent or less (including 35 enterprises with zero or negative returns.)

secular decline in the aggregate financial rate of return on invested capital (mainly brought about by price controls) was the key factor behind the sharp deterioration of the public enterprises' overall deficit.

**Table 3.3: Key Indicators of Performance
for Non-Financial Public Enterprises¹, 1975-1990**

	1975	1977	1980/ 1981	1983/ 1984	1986/ 1987	1987/ 1988	1988/ 1989/	1989/ 1990
<u>Rates of Return (371 Public Enterprises)</u>								
Net Rate of Return I ² (Total Net Assets)	7.78	7.88	6.87	4.23	2.87	3.43	4.03	3.62
Net Rate of Return II ³ (Book Value of Capital Employed)	15.60	16.43	14.31	8.25	5.52	6.76	7.93	7.24
Net Rate of Return III ⁴ (Revalued Capital)	6.60	5.00	4.30	1.70	--	--	--	--
<u>Labor Productivity (1986/87 = 100)</u>								
Output/Worker ⁵	97.9	104.0	123.3	94.7	100.0	108.8	112.4	114.9
<u>Aggregate Productivity Indicators⁶</u>								
			<u>1973-79</u>		<u>1979-83/84</u>			
Incremental Capital Output Ratio (ICOR)			6.7		19.0			
Marginal Productivity of Capital (%)			15.0		5.0			
Total Factor Productivity Growth (% p.a.)			6.5		-4.4			

Sources: "Egypt: Review of the Finances of the Decentralized Public Sector," Volume II: Annexes, Report No. 6421-EGT, World Bank, March 1987, for data through 1983/84; "Data Prepared for the World Bank," mimeograph, The Cabinet Public Sector Information Center, Cairo, October 1991, for data 1985/86 through 1989/90. See Annex Table 3.1 for definitions.

- ¹ Non-financial public enterprises; the estimates for 1975-1983/84 include the public economic authorities.
- ² Net profit (after tax) divided by net assets.
- ³ Net profit (after tax) divided by capital employed.
- ⁴ Ratio of current surplus (net of depreciation) to gross capital employed less accumulated depreciation.
- ⁵ Gross output per employee in constant prices of 1986/87.
- ⁶ Non-financial public enterprises.

3.14 On the other hand, estimates of aggregate factor productivity and of overall productivity of capital indicate that while during the 1970s productivity and financial performance moved in opposite directions (i.e., financial rates of return deteriorated but factor productivity growth accelerated), in the 1980s, both indicators deteriorated. There was some improvement in financial returns in the latter half of the 1980s, however, as some of the output prices were gradually decontrolled. The sharp decline in total factor productivity of public enterprises in the first half of the 1980s indicates that the overall economic efficiency (in a dynamic sense), particularly

efficiency of public enterprise investments, deteriorated sharply.⁴ Economy-wide total factor productivity continued to deteriorate in the second half of the 1980s (see Chapter IV).

3.15 Investment Allocations During the Last Two Plans. According to the revised figures appearing in the Third Five-Year Plan document, gross fixed investment (GFI) in the public sector amounted to LE 100.5 billion (in current prices) during the First and Second Five-Year Plans, accounting for nearly 60 percent of total investment in the Egyptian economy during the period (Table 3.4).⁵ Total public investments amounted to LE 33 billion (17 percent of GDP) during the First Plan and LE 67 billion (15 percent of GDP) during the Second Plan.

Table 3.4: Sectoral Distribution of Public Sector Investment During the First and the Second Five-Year Plans (current prices; LE millions, unless otherwise noted)

	First Plan		Second Plan		Total	
	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)
Agriculture and irrigation	2,165	6.4	4,589	6.9	6,754	6.7
Manufacturing and Mining	8,275	24.5	13,131	19.7	21,406	21.4
Petroleum	1,515	4.5	1,393	2.1	2,908	2.9
Electricity	3,966	11.7	13,184	19.8	17,150	17.1
Construction	741	2.2	1,045	1.5	1,786	1.8
<u>Total Commodity</u>	<u>16,662</u>	<u>49.2</u>	<u>33,342</u>	<u>50.0</u>	<u>50,004</u>	<u>49.8</u>
Transportation and Communications	9,610	28.3	16,378	24.6	25,988	25.8
Trade and Finance	570	1.7	1,062	1.6	1,632	1.6
Tourism	255	0.8	435	0.6	690	0.7
<u>Total Productive Services</u>	<u>10,434</u>	<u>30.9</u>	<u>17,876</u>	<u>26.8</u>	<u>28,310</u>	<u>28.3</u>
Housing	1,023	3.0	583	0.8	1,606	1.6
Public Utilities	3,262	10.2	8,738	13.1	12,000	11.9
Education	919	2.7	2,386	3.6	3,305	3.3
Health	632	1.8	1,473	2.2	2,105	2.1
Other Services	222	2.6	2,325	3.5	2,547	2.5
<u>Total Social Services</u>	<u>6,735</u>	<u>19.9</u>	<u>15,505</u>	<u>23.5</u>	<u>22,240</u>	<u>21.9</u>
Public Investment	33,832	100.0	66,723	100.0	100,555	100.0
as percentage, Total Investment	61%		57%		58%	
as percentage, Total GDP	17%		15%		16%	

Source: Ministry of Planning, April 1992.

⁴ For a detailed analysis of efficiency of public sector investment in the 1970s and early 1980s in Egypt, see: World Bank, Arab Republic of Egypt: Issues of Trade Strategy and Investment Planning, Report No. 4136-EGT, 1983; and Egypt: Review of the Finances of the Decentralized Public Sector, Report No. 6421-EGT, 1987.

⁵ The revised figures of the First Five-Year Plan are 27 percent (LE 7.3 billion) above the earlier estimate given in the Second Five-Year Plan document with most of the increase accounted for in the last two years (FY87 and FY88). For the period of the Second Plan, revised estimates are 17 percent (LE 10.2 billion) above the earlier estimates given in the documents published by the Ministry of Planning in 1990/91. Three sectors are responsible for overshooting their targets: manufacturing, transport and communications, and electricity.

3.16 In real terms, aggregate public sector investment increased significantly between FY83 and FY87, the period of the First Plan, with an annual average growth rate of 13 percent, well above that for GDP. During the Second Five-Year Plan, however, the growth momentum ceased when windfall incomes (i.e., foreign exchange revenues from oil and Suez Canal and workers' remittances) began to decline. Public fixed investment decreased in real terms, but its decline was especially significant as a percentage of GDP; it fell from about 23 percent in FY88 to about 14.7 percent in FY91.

3.17 Two major features of public investment stand out over the decade. The first is the preponderance of resources spent on the country's physical infrastructure, and the second is the relative importance given to the rehabilitation, rather than the expansion, of the productive capacity of the public enterprise sector. Both features have characterized the Government's investment expenditures since the mid-1970s. The first implies a strategy that aims at replacing Egypt's fast depleting petroleum reserves with an expanded and efficient infrastructure to support the growth of the productive sectors. The second is consistent with the Government's objective of rationalizing and restructuring the state-owned business sector, while giving the private sector the leading role in growth and diversification.

3.18 Public Investment in Infrastructure. More than half of aggregate public sector investment expenditure over the period of the first two five-year plans was allocated to infrastructure: electricity (17.1 percent), transport and communications (25.8 percent) and public utilities (11.9 percent). These three sectors together received a total of LE 55 billion out of total public sector fixed investments of LE 100.5 billion (in current prices) over the decade FY83 to FY92. In both absolute and relative terms, this represents a substantial effort that enabled not only the rehabilitation of much of the existing infrastructure but also a considerable expansion of its capacity. Power-generating capacity more than doubled, the number of telephone lines increased fourfold, the cargo capacity of harbors rose by 76 percent and paved roads increased by 130 percent (Table 3.5).

3.19 Despite the massive investments in infrastructure by the public sector, the pace of economic growth has slowed down substantially since the early 1980s (Chapter II). There is, however, empirical evidence that the Government's capital outlays in infrastructure had a positive impact on private investment in the 1970s and early 1980s (Chapter IV.) But contrary to predictions by economic growth models that increases in infrastructure investment should lead, over time, to an acceleration in the rate of growth of total factor productivity (TFP), Egypt's economy-wide TFP growth has apparently fallen sharply, from an annual average of 1.4 percent in 1973-80 to -0.8 percent in 1980-90 (Chapter IV, Table 4.6). This slowdown is confirmed by estimates of TFP growth for public enterprises during the 1973-1983/84 period as presented in Table 3.3. Thus, the size and focus of the investments made in infrastructure raises several issues concerning both inter- and intra-sectoral misallocation of resources, as well as massive

fragmentation of resources into large number (several thousand) projects. First, the wisdom of undertaking massive expansions in infrastructure is questionable if that infrastructure has only an indirect and limited impact on the supply generating capacity of the tradeable sectors. This is especially relevant if the growth of the tradeable sectors is constrained by other factors, such as inappropriate price and trade regimes and a highly overvalued exchange rate. It can, thus, be argued that because the liberalization of the economy over the period 1974-90 was only partial in nature, the real productive sectors could not grow in line with the country's potential comparative advantage and that at least some of the investments in infrastructure were not accompanied by a parallel improvement in the overall efficiency of investment and increase in growth of output of tradeables.

Table 3.5: Growth in Capacity of Public Utilities, Infrastructure and Energy Sectors, 1981/82 to 1991/92

	Unit	1981/82	1986/87	1991/92
Public Utilities				
Output of potable water	million cubic meters/day	6.0	8.6	11.5
Capacity of sewerage system	million cubic meters/day	2.2	3.0	5.0
Communications				
Telephone lines	thousand lines	510		2,264
International channels	channels	820		5,784
International calls	million minutes	28		270
Telex lines	lines	3,520		9,340
Facsimile members	units	-		9,299
Cities connected to STD traffic	cities	7		195
Direct international dialing	countries	29		185
Electricity				
Installed capacity	megawatts	5,030	8,540	11,910
Per capita consumption	kilowatt hours	414	587	685
Petroleum, Petroleum Products and Gas				
Output of petroleum	thousand tons	38,152	43,200	45,050
Output of natural gas	thousand tons	1,924	4,492	6,700
Output of petroleum products	thousand tons	15,595	22,041	25,000
Roads & Bridges				
Length of paved roads	thousand kilometers	15.3		35.3
Number of bridges and overpasses added over ten years				116
Number of passengers	million	556		1,030
Road cargo fleet	number	1,529		2,300
Harbors & Shipping				
Capacity of harbors	million tons	25.5		45
Maritime fleet	vessels	70		146
Capacity of fleet	thousand tons	520		1,620
Rail Transport				
Number of passengers	million	433		769
Rail cargo	million tons	7.4		10.6
Kilometers added to railway network over ten years				753

Source: Ministry of Planning.

3.20 The intrasectoral allocation of resources is a second issue raised by the heavy investments in infrastructure. In some cases, expansion in infrastructure has been too extensive given the absorptive capacity of the country; this has translated into delays in the completion and use of facilities, low capacity utilization, and a consequent reduction in the rates of return on a number of infrastructure projects, as compared to their feasibility study. The 12 new cities, which were designed and begun to be built in 1977 (see Annex Table 3.2 and Chapter VII), are a case in point. The costs of providing roads, extending electricity and telecommunications lines, water and sewerage, as well as basic physical and social infrastructure, were extremely high. The result has been that most of the new cities have hardly begun to attract the populations or industrial investments that they were designed to absorb.

3.21 The highly regulated economic environment and the overstretching of investment funds prevented the rapid expansion in infrastructure from relieving real bottlenecks in the productive sectors. Thus, much of the capacity of new cities, harbors and industrial estates has gone largely unused; electricity generation has been used inefficiently; and urban infrastructure has been unable to meet the record levels of private sector investment in housing in the already densely populated areas. Yet, in principle, the fault lies not with the ambitious program of infrastructure expansion but with the inability of the Government to implement a comprehensive program of liberalization earlier, which would have allowed a greater participation by the private sector and unleashed much more of the productive potential of agriculture and industry. Delaying the implementation of comprehensive economic reforms, thus, hampered the much needed transition to a growth path based on investment in the productive sectors of the economy.

3.22 The third investment issue relates to cost recovery. Given that many of the utilities and infrastructure projects (especially electricity and telecommunications) enjoy high economic and social rates of returns, appropriate price setting for these utilities could have allowed the Government to earn sufficiently high financial rates of return to ease the burden of financing these projects. The Government's policy of subsidizing consumers of public services and utilities has had a substantial adverse impact on the financial conditions of the public enterprises that provide these services over the decade.

3.23 Throughout most of the 1970s and 1980s, public utilities and services were subject to rigid price controls; this was an attempt by the Government to control inflation and make basic services available at prices that the poor could afford. Public utility losses reached alarming proportions in the late 1970s and 1980s, with large annual transfers and subsidies from the Government's annual budget. In spite of these substantial transfers, the accumulated losses of the major

public economic authorities⁶ reached LE 2.5 billion in June 1990 (excluding the General Authority for Supply Commodities (GASC), which had accumulated losses of LE 5 billion). Between FY86 and FY90, the annual operating loss of the group (excluding GASC) grew from LE 959 million to LE 2,492 million, after accounting for income from subsidies and other transfers.

3.24 By looking at the capital employed in six of these public service authorities, one can estimate the opportunity cost to the state of their setting prices at low levels. At a rate of return of 10 percent on the book value of capital employed, the electricity authority could be earning LE 1,052 million per year; the railways, LE 552 million; the waterworks, LE 146 million; and the urban bus companies, LE 95 million (Table 3.6). Instead, they are each incurring a financial deficit equivalent to between 11 percent and 19 percent of their capital employed (at book value). The total loss to the budget from the operation of these four utilities alone can, thus, be estimated at a conservative LE 4 billion in FY90. This figure excludes the implicit subsidy on energy that these authorities have also been enjoying during the year, especially the electricity authority.

Table 3.6: Operation of Selected Public Service Authorities
Year Ending June 30, 1990
(LE millions)

	Capital Employed (Book Value) (1)	Opportunity Cost of Capital at 10% (2)	Operating Losses Plus Subsidies (3)	FRR ¹ Percent Capital Employed (4)	Total Loss to the State (5)
Electricity	10,521	1,052	1,152	-10.9	2,204
Railways	5,523	552	752	-13.9	1,304
Urban Water	1,461	146	155	-10.6	301
Urban Bus	948	95	181	-19.1	276

Sources: NOP and NIB.

¹ Financial Rate of Return; operating loss plus subsidies divided by capital employed.

Notes: Urban water and urban bus each include both the Cairo and Alexandria Authorities. Capital employed is calculated as net worth (after subtracting accumulated losses) plus long-term debt. In order to reflect annual financial deficits, subsidies received during the year are added to annual operating losses. The total loss to the state is the sum of columns 2 and 3. The subsidy element for the railways is estimated as the average received over the previous 4 years (LE 247.5 million).

⁶ Among the 50 public authorities operating in Egypt, only 20 can be considered monopolies in the utility/infrastructure sector: electricity (2), transport (9), communications (3), water (2), construction (2) and the 2 rent-earning monopolies (the petroleum and Suez Canal authorities).

3.25 Investment in Manufacturing Public Enterprises. The second largest sector to which public sector investments were allocated during the First and Second Five-Year Plan periods was industry, with LE 21.4 billion or a little over one fifth of the total public gross fixed investment. Existing public enterprises were responsible for most of these investment expenditures, the bulk of which were used for rehabilitation.⁷

3.26 The largest group of public enterprises in manufacturing are those 114 firms traditionally affiliated with the Ministry of Industry. By mid-1991, their capital employed was valued at LE 17.7 billion (book value), and their employment stood at 557,000. Until FY87, there were extensive controls on the prices of goods produced by the industrial public sector. In order to control inflation, prices were at such a low level that many enterprises suffered large losses, despite the heavy implicit subsidization of their input costs. In order to eliminate financial losses of industrial enterprises, the Government opted in FY87 to liberalize prices for textiles and food products. For other products, such as durables, intermediate and capital goods industries, the Government proposed to implement a pricing formula that would allow for output price increases covering operating costs and a 15 percent return on capital employed. This policy had some positive consequences on profits, productivity and export performance of the industrial public enterprises (Table 3.7).

**Table 3.7: Indicators of Financial Performance
of 114 Public Manufacturing Enterprises
Affiliated with Ministry of Industry, 1981/82 to 1990/91**

	<u>Profits</u> LE mill.	<u>Rate of Return I¹</u> (Assets) Percent	<u>Rate of Return II²</u> (Capital Employed) Percent	<u>Exports</u> US\$ mill.	<u>Labor Productivity³</u> (1986/87 = 100)
1983/84	283	2.8	10.0	532	86.6
1984/85	364	3.4	10.5	510	97.9
1985/86	451	3.1	10.0	478	98.7
1986/87	503	2.9	10.2	621	100.0
1987/88	830	3.9	13.8	805	113.6
1988/89	1,055	4.5	15.2	903	111.7
1989/90	1,032	3.8	13.8	883	99.3
1990/91	1,206 ^a	3.9 ^a	15.4 ^a	874 ^a	93.0 ^a

Sources: MOP and NIB; and "Data Prepared for the World Bank," mimeograph
The Cabinet Public Sector Information Center, Cairo, October 1991.

¹ Return on assets; profits defined as after tax but before interest payments.

² Return on capital employed; profits defined as after tax but before interest payments.

³ Real value added in 1986/87 prices divided by number of employees.

^a Preliminary estimate.

⁷ It should be noted that some investments in ongoing projects are not included, although they are financed by public enterprises, as the legal status of these projects is joint ventures with the private sector (domestic or foreign). It should also be noted that, conversely, significant investments included under manufacturing industry in the First and Second Five-Year Plans are basically infrastructure projects undertaken to serve public and private sector industrial activity. An example is the El-Dikheila harbor, which has cost LE 492 million by 1991/92.

3.27 Investment over the 1980s, valued at LE 8 billion (current prices) for the 114 public manufacturing enterprises under the Ministry of Industry, was mostly used in rehabilitation and replacement and raised the book value of fixed assets from LE 3.3 billion in FY82 to LE 10.8 billion in FY91. The group's financial profitability moderately improved over the decade (average return on assets increased from 2.8 percent in FY84 to about 4 percent in FY91, and average return on capital employed increased from 10 percent to 15 percent), while total transfers, including state dividends and direct and indirect taxes, to the central government increased sharply in the same period.

3.28 Overall, the impact of price reforms on the financial performance of public enterprises has been positive. Average output prices, which had increased by only 7.3 percent a year from FY81 to FY87 (the average CPI increase was 17 percent a year), rose by 15.7 percent a year in the period FY88 to FY90 (the average increase in CPI was 18.9 percent a year). The number of manufacturing enterprises (i.e., those affiliated to the Ministry of Industry) incurring losses correspondingly declined from 36 (out of a total of 114) in FY85 to 10 in FY91. It should be noted, however, that the improved financial performance of these enterprises in recent years has resulted, in part, because of the implicit subsidies that they continued to receive for their inputs and financing needs (i.e., through negative real interest rates and overvalued exchange rate). Therefore, even though rates of return on assets have improved somewhat, they are unsatisfactory. Moreover, the aggregate figures mask a substantial diversity in performance among these enterprises. According to cross-section data for FY89, out of the 114 manufacturing enterprises, only 22 enterprises had rates of return on assets in excess of 10 percent, while 48 had returns of less than 5 percent.

3.29 Price liberalization is now being complemented by a significant reduction in the level of protection enjoyed by both public and private manufacturing enterprises over the last two decades. The elimination of all forms of discrimination favoring the public sector will also put more pressure on enterprises to raise their efficiency. Subsidized interest rates and exchange rates, and low priced intermediates are no longer suppose to be available to special groups of enterprises. Investment licensing is being abolished, freeing up market entry, and the level of nominal and effective protection from tariffs is expected to decline sharply, in line with the reform measures currently under implementation. It can, therefore, be assumed that a number of industrial concerns that suffer from weak comparative advantage or low productivity will have to be restructured, privatized or liquidated (see Chapter XI). This includes enterprises in the electronics, engineering and textile sectors, which market forces are likely to show not to be economically viable.

C. Reforms and the Role of the Public Sector

3.30 The above discussion on efficiency of the public sector clearly implies that the Government's strategy for the Third Five-Year Plan should be based on a two-pronged approach: raise the efficiency of public sector investment while, at the same time, keep a ceiling on its growth, in order to substantially reduce the fiscal deficit and crowd-in private investment. Although the level of public investment affects the level of overall economic activity, it is the sectoral distribution of investment, the quality of projects/programs within each sector and the nature of their implementation, that ultimately influences the overall rate of growth of economic activity. Experience from a large number of developing countries has shown that, in order to maximize the beneficial effects of a public investment program on medium-term growth, scarce resources must be devoted to investments in a manageable number of projects with very high priority, and high economic and social rates of return. Moreover, to develop an optimal investment program, the Government should introduce a highly discriminating screening criteria for selecting new projects/programs, while giving priority to completion of those ongoing projects whose economic viability is not in question.

3.31 In Egypt, the role of the public sector in the productive and commercial sectors will have to contract significantly over the medium term. At the same time, policy and regulatory reforms must be continued and deepened to induce the private sector to undertake an increasing share of aggregate investment in the economy (see Chapter IV). Public sector investments should be focused on areas where substantial externalities are present, and on those projects/programs that would complement private sector investments.

3.32 Moreover, the public sector's role in the economy needs to be redefined in view of the nature and magnitude of the challenges the country will be facing in the coming years. With the globalization of economic relations, the accelerating rate of technical progress and growing capital scarcity, the international environment is now far less benign for developing countries than it was during the past three decades. Firms and countries are becoming quite aggressive in defending their economic interests, and only those countries capable of continuously improving their competitive standing will progress. The public sector will be required to play a fundamental role in this process, distinct, however, from the role it played during the last two decades. A diminished involvement in directly productive activities will contrast with a greater demand for policy coordination and for economic, social and technical information, as well as with an expanded investment in human resources and social infrastructure.

3.33 At the most basic level, the Government needs to provide a set of rules and market-supportive institutions to assign property rights, enforce contracts and establish a stable economic environment so that productive activity can flourish. Stability, predictability and transparency of policies are the basis of sound government action in the economic sphere. Within this framework, the role of government is to

establish an incentive structure and to support the accumulation of critical productive capabilities that, combined, drive the economy towards the efficiency frontier.

3.34 Project Selection and Sectoral Allocation. Concerning the Government's investment functions, it is imperative that projects be carefully selected and designed. The Ministry of Planning, in coordination with sector ministries, needs to substantially strengthen the capacity for appraisal of projects/programs and to make use (to a much greater extent than is the case currently) of cost-benefit analysis to identify and drop from the plan projects with low economic and social rates of return. Within each sector, priority should be given to projects/programs with the highest economic and social rates of return so as to improve on the uneven performance of public sector investments over the past two plan periods. In terms of project selection, the "modern" public sector in Egypt should restrict itself, first, to areas that present large externalities and where the private sector would normally underinvest, e.g., basic education and research, preventive health care and other segments of the social infrastructure. An active government posture would only be justified when market failures clearly dominate potential government (bureaucratic) failures. Second, where such investment is necessary to attract or "crowd in" private investment, government investment should be used as a catalyst, as in the provision of serviced land (for housing and industry), roads, basic telecommunications infrastructure, etc. Third, government interventions may be needed to address long-term or broader development issues that are not normally tackled by the private sector, such as problems of regional imbalance and equity, protection for vulnerable groups and of environmental degradation. Finally, the Government should introduce flexibility to the investment program, which should be reviewed and modified at regular intervals (e.g., annually). A core investment program should be identified so that projects with highest priority would be protected from sudden shortfalls in financial resources.

3.35 Project Design. Regarding project design, the Government will need to observe the tight budget constraint that characterizes the environment of the Third Five-Year Plan. Thus, it is necessary to explore ways to enhance the financial sustainability of new, as well as existing, projects, that is, to address the issue of cost recovery; to consider the capability for project implementation within the proposed time frame so as to avoid delays and the consequent reduction in returns; and to maximize the scope for private sector participation in the financing and implementation of projects. In this respect, there is a growing number of institutional arrangements under which investments typically associated with the Government can take place. In fact, one can think of a gradient of government involvement, ranging from pure coordination activities to the execution of all project steps. In between, there are a number of possibilities, including: "build, operate and transfer" arrangements, where facilities are built and operated by the private sector and eventually transferred to the Government; "build and transfer" arrangements, where operations are immediately taken over by the Government; and "reverse transfer" arrangements, where already

built facilities are transferred to the private sector to be operated for a fixed fee or regulated price.

D. The Third Five-Year Plan: Evaluation and Major Issues

3.36 Egypt's Third Five-Year Plan has recognized the far-reaching implications of the liberalization and structural adjustment program (see Box 3.3). It has reduced the Government's commitment to investment outside of the basic infrastructure, public utilities and social services. It lays emphasis on the growing role that private investment must play in all spheres of productive activity, and it promotes a significant reorientation of the economy towards the tradeables sectors. As discussed in Chapter II, three major objectives are spelled out in the Third Five-Year Plan documents: restoring balance in the government budget and external accounts; reducing the country's indebtedness and debt service burden; and resuming a growth path based on the expansion of the competitive sectors of economic activity.

3.37 According to the Third Five-Year Plan, aggregate investment expenditure over the period FY93 to FY97 is targeted at LE 154 billion, with 52 percent (LE 80 billion) to be undertaken by the public sector (including central and local government, service authorities, economic authorities and both Law 203 and non-Law 203 public enterprise); 45.5 percent (LE 70 billion) by the private sector; and 2.7 percent (LE 4.1 billion) earmarked as "possible private investment" in projects prepared by the public sector. Excluding the Law 203 public enterprises, (since starting in FY92 their investments will have to be financed outside of the budget of the central government) - the ratio of public sector investments (excluding Law 203) to the total investment program declines to 46 percent.

3.38 Given the projected growth rate of GDP (5.1 percent over the Third Five-Year Plan period), MOP's allocations for the public investment program will average about 10 percent of GDP in the period FY93-FY97. This is down from 18 percent in FY87 (the last year of the First Five-Year Plan) and 11 percent in FY92 (the last year of the Second Five-Year Plan), using the revised national income data provided by MOP.

3.39 Out of the total public investments (LE 80 billion), investment in the non-business public sector (i.e., central and local government plus service and economic authorities) is projected at LE 64.6 billion during the Third Five-Year Plan; whereas the public enterprise group has been "targeted" investment of LE 15.3 billion, of which LE 9.1 billion is "targeted" by MOP for Law 203 public enterprises. The structure of public investment expenditure has, therefore, changed so as to reduce further the size, and share, of the public enterprise sector in total public gross fixed investment - from about 30.6 percent over the Second Five-Year Plan to 19.1 percent during the Third Plan. Although this decline in the role of public enterprises conforms to the declared policy of liberalization and to the dictates of

Box 3.2: The Changing Nature of Planning in Egypt.

"The most essential feature of a comprehensive development plan is the attempt to allocate investment with a view to altering the structure of the economy. The worst feature is that such sectoral and subsectoral allocations (for example, to branches of industry) were often made not merely without there being investment projects, but without examination of whether any potential investments in that sector would be likely to be adequately socially profitable. It is rather like an architect designing a building with no knowledge of the strength of the materials - the building blocks - that might be used."¹

After more than 40 years, the outcome of development planning in developing countries has been disappointing: there have been many more failures than successes. The nearly universal rejection of central planning based on unsatisfactory performance has led in most nations to the adoption of a more market-friendly approach to development.²

What went wrong? An examination of post-war planning history in developing countries reveals that the following factors were the most common reasons for plan failures: deficiencies in plans (especially inconsistencies in their macroeconomic framework) and their implementations; insufficient and unreliable data; large and unexpected economic disturbances; institutional weaknesses; and lack of political will.³

(Continued on following page.)

the program of structural adjustment and privatization, a more significant reduction in the planned allocations would have sent a stronger signal concerning the Government's intention to accelerate the pace of privatization.

3.40 Sectoral Allocations of Public Investment. Among the main productive sector, the share of agriculture (mainly planned investments in irrigation and land reclamation) in total public sector investment is projected to increase from 6.9 percent under the Second Five-Year Plan to 13.5 percent during the Third Five-Year Plan; that of manufacturing and mining to decline from 20 percent to about 5 percent (excluding PEs) during this period; that of the petroleum and gas sector to rise from 2.5 percent to 3.8 percent; and the electricity sector to rise from 19 percent to more than 24 percent.

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The Egyptian Third Five-Year Plan has, in fact, made a major departure from earlier practices of calculating precise production targets, commodity balances and investment budgets to state-owned enterprises. It has also conformed to the spirit and rule of the new legislation on public business enterprises, whereby all decisions on investment plans and their finance are totally independent and outside of the central government's budget process. The size and structure of public sector investment, as it appears in the Third Five-Year Plan, only applies to central and local government and social and economic authorities. Figures pertaining to investment by the public business sector, as well as the private sector, are tentative, based on the Ministry of Planning's judgement of what are priority projects among those proposed by various groups of public enterprises and private investors. Nevertheless, the Third Plan, as in the previous plans for Egypt, and unlike that of many leading developing countries, still envisions only a small role for the private sector in some critical sectors of the economy, particularly in telecommunication, transport and in utilities.

¹ Ian M.D. Little, Economic Development: Theory, Policy and International Relations, Basic Books, New York, 1982, p. 127.

² See World Bank, World Development Report 1991, Washington, DC, 1991.

³ See Michael P. Todaro, Economic Development in The Third World, Longman, Fourth Edition (4th Impression), 1992.

3.41 Among the productive service sectors, the share of the transport and communications is projected to decline significantly, from 25 percent during the Second Five-Year Plan to about 13 percent under the Third Five-Year Plan. In the social services category, the share of housing and public works is projected to rise from 13.2 percent to 18.5 percent. Education has been allocated substantially higher investments than under the Second Plan, with education's share increasing from 3.8 percent to nearly 10 percent. But the allocation for health is to rise only marginally, from 2.2 percent to about 2.5 percent. Overall, despite a significant improvement in the intersectoral allocations of planned public investments, i.e. in comparison to those in the last two plans, there is still room for further improvement (see Chapter I). There are also a number of major intrasectoral problems with the proposed allocations that are addressed

in the rest of this report, in chapters dealing with each of the major sectors of the economy.

3.42 The External Sector. With regards the external sector, the Third Five-Year Plan recognizes that the balance of payments surplus on current account in FY92 (see Chapter II), aside from the impact of debt relief, is mainly due to transient circumstances. The Third Plan document also admits that the four major earners of foreign exchange (petroleum, the Suez Canal, tourism and workers' remittances), which together account for about half of current account revenues, are highly vulnerable to external shocks. Therefore, it places great importance on the growth of exports of agricultural and industrial commodities, which are together projected to grow at 14.6 percent per year (9.5 percent and 16.0 percent, respectively). Their share of total export revenues would, thus, increase from 12.5 percent in FY92 to 20.6 percent in FY97.

3.43 Petroleum exports have declined from US\$4.7 billion (78.6 percent of merchandise exports) in FY82 to about US\$1.6 billion in FY92 (45.2 percent of merchandise exports). The volume of exports of petroleum and petroleum products is expected to decline further; the Third Five-Year Plan projects their share of commodity exports at 18.6 percent in FY97. Replacing petroleum exports with exports of manufactured goods, whose share is projected to reach 51.8 percent of trade receipts in FY97, is one of the most daunting challenges of the Third Plan. The success of this endeavor is predicated on the positive response of industry to the accelerated pace of reforms of the trade and protection regime, as well as to the rapid deregulation of the domestic market in terms of investment licensing policies. Given the significant level of excess capacity, which is reported by MOP for both public and private sector manufacturing, a liberalized environment may well permit these ambitious growth targets for manufactured exports to be realized. Given the very low base from which manufactured exports are starting to grow (at some 12 percent of manufactured output), there is ample room for their rapid expansion over the coming plan period.

3.44 The performance of manufactured exports was very poor in the 1970s and for most of the 1980s, especially when Egypt is compared to other developing countries at a similar stage of industrialization. The major constraints that have hampered the development of manufactured exports have, in fact, been the overvaluation of the currency and the tightening of the labor market, both symptoms of the Dutch disease that accompanied the oil boom era. Now that the growth in foreign currency and emigration has subsided, and the anti-export bias inherent in the structure of protection is being eliminated, the stage is set for a positive turnaround in the performance of manufactured exports. The real exchange rate must remain competitive, however; otherwise, the growth of manufactured exports will be adversely affected.

3.45 Employment. Egypt's growth performance in the foreseeable future will clearly depend on the ability of the economy to optimize the country's fundamental, long-term factor endowment: an abundant and fast growing labor force. From 1975 to 1985, a large portion of the labor

supply found its way into government employment or worked abroad. Both sources of demand are now fully saturated, as recognized by the Third Five-Year Plan, which forecasts an increase in domestic employment of 2.5 million over the next five years, 46 percent of which is in the commodity sectors (see Table 3.8). If total employment is to reach 16.4 million, as predicted for the last year of the Third Plan, there must be a reduction in open unemployment from 9 percent in FY92 (which is likely to be an under-estimation since various sources put the figure in the range of 11 to 15 percent) to 7.5 percent in FY97, using MOP data on the labor force. This is an extremely ambitious target that relies almost totally on accelerated growth in private sector activity, given that both the Government and public enterprises will, at best, create another half million jobs over the period. The distribution of public investment across activities - both in the past 10 years and for the coming plan period - is, thus, heavily concentrated in sectors with the highest capital cost per job, reaching LE 1 million in the electricity sector.

Table 3.8: Size and Structure of Employment and Capital Cost per Job, 1991/92 and Target 1996/97
(employment in thousands; LE thousands)

Sector	1991/92		1996/97		Increase		Capital Cost/Job	
	Number	Pct.	Number	Pct.	Number	Pct.	2nd Plan	3rd Plan
							(LE '000)	
Agriculture	4,588	33.0	4,922	30.1	334	13.6	35	42
Manufacturing	2,114	15.2	2,611	16.0	497	20.3	67	56
Petroleum	39	0.3	49	0.3	10	0.4	1,544	1,100
Electricity	101	0.7	118	0.7	17	0.7	880	1,024
Construction	700	5.1	764	5.9	264	10.8	10	10
Total Commodity	7,542	54.3	8,664	53.0	1,122	45.8	73	65
Transport and Communication	624	4.5	791	4.5	167	6.8	142	119
Trade and Finance	1,482	10.6	1,857	10.6	375	15.3	11	11
Tourism	151	1.1	184	1.1	33	1.3	134	130
Total Productive Serv.	2,257	16.2	2,832	16.2	575	23.5	64	49
Housing	220	1.6	247	1.6	27	1.1	446	685
Social Services	1,351	9.7	1,735	9.7	384	15.7	16	24
Public Utilities and Government Services	2,530	18.3	2,872	18.3	343	14.0	33	75
Total Social Services	4,101	29.5	4,854	29.5	753	30.7	43	59
Grand Total	13,900	100.0	16,350	100.0	2,450	100.0	61	59

Source: MOP, Third Five-Year Plan, Volume I, April 1992.

Note: Capital cost per job is calculated for each Five-Year Plan as aggregate GFI (public and private) divided by the increase in employment over the same five year period. No distinction is available between employment in the private and public sectors.

3.46 Over the coming decade, it is obvious that macroeconomic management and the use of policy tools will be key in achieving a successful transition to a market economy. The Third Five-Year Plan

underscores the Government's intention to move towards decentralization and deregulation. It states that Egypt's new approach to planning will necessitate a shift in focus for the Government - from planning projects to planning policies. Given the far reaching goals of the structural adjustment program, the role of the policy package will indeed be critical in determining the pace at which the public sector can extricate itself from its dominating position in the economy, as well as the degree to which the private sector can fulfil the ambitious targets set for it by the Third Plan.

E. The New Role of the State: Major Issues

3.47 The major issue that policymakers must contend with is the changing pattern of resource availability in the public and private sectors. Whereas a major part of Egypt's windfall income was accruing to the Government up until recently, the forecast for the 1990s is that budget revenues from petroleum and the Suez Canal, along with foreign aid flows, will decline as a proportion of GDP. Given these new circumstances, public investment expenditure can no longer attain the record levels achieved in the last two plan periods, and resource mobilization by the private sector must take the lead in capital accumulation and growth. It is important to emphasize that retrenchment in public sector investment should not only be seen as a medium-term phenomenon attributable to external shocks or to the implementation of the program of structural adjustment, but also as a necessary long-term trend whereby the size and role of the public sector is reduced in line with its shrinking resources.

3.48 Sustainable growth requires a complete redefinition of the role of the public sector as provider of public goods, regulator of economic activity and competitor in commodity and factor markets. While the state should continue to fulfil its first two responsibilities, it is in the third context that the scope for reducing public sector activity is largest, so as to crowd in the private sector and promote the role of market forces.

3.49 Since the Infitah, the state has followed a policy of restricting investment in the public enterprise sector to the completion of ongoing projects (e.g., aluminum), to meeting the requirements of the construction boom (e.g., cement) and to ensuring the supply of intermediates to agriculture (e.g., fertilizer). The bulk of gross fixed investment in public manufacturing has been for rehabilitation (especially in textiles and metals), a process that was long overdue. In parallel, the state encouraged the establishment of joint ventures between public enterprises and private domestic or foreign investors in all fields of economic activity. About 200 joint ventures were thus initiated, with the public sector contributing more than half of their finance.

3.50 Starting in 1990, the state began to implement an explicit program of privatization. Its share in the equity of all joint ventures

(with a book value of LE 2 billion) has been declared for sale, with attractive opportunities for private investors in large- and medium-scale manufacturing (85 ventures in steel, fertilizers, cement, textiles, sugar, engineering and chemicals), agribusiness, hotels and services. The legislation governing the older public enterprises (314 firms with a historical book value of LE 73 billion) was modified in 1991 (Law 203) to allow for privatization under a comprehensive reorganization program that aims at full autonomy, accountability and transparency of the public enterprise sector. The third group of state-owned firms, some 2,000 small entities (with a book value of about LE 200 million) attached to local government, are in the process of being disposed of, mostly through auctioning.

3.51 It is essential for the Government to spell out clearly what is the scope and time frame of the privatization program under the Third Five-Year Plan. A liberal and pragmatic approach to privatization would give the private sector the motivation to take up the challenging role that the plan has assigned to it. The Government should elaborate on the specific privatization plan adopted for the next year or two, to give the private sector a clear picture of the opportunities and options available. A comprehensive privatization list designating public sector entities, shares and/or assets should be provided, along with a clear formulation of the procedural steps involved in valuation and sale.

3.52 A major issue concerns the restructuring and privatization of the so-called "strategic" industries, many of which are supposed to remain under the protection of the public sector, where they would be immune from market forces. The most important components of the "strategic" industries are in utilities, public transport, communications and heavy industries. According to the Third Five-Year Plan documents, the Government does not envisage measurable private sector participation in these industries in the foreseeable future. This is a major departure from the privatization programs undertaken in other developing countries, such as Chile and Mexico (see Box 3.3).

3.53 It is also essential that the investment program for Law 203 companies be confined to replacement and rehabilitation, for consistency with the objectives of privatization. (For privatization program in the industrial sector, see Chapter XI.) The completion of ongoing projects should be carefully scrutinized to avoid capital expenditure for those that have low economic or financial returns, in the light of the emerging competitive environment. For uneconomic projects, it would be advisable to cut losses and accept sunk costs rather than allow such projects to be completed. As for viable new projects proposed by public enterprises, these should be well publicized and offered to private investors. In this new phase of liberalization and structural adjustment, it would be wasteful for scarce public sector resources to be used in initiating or financing any new projects, even in partnership with the private sector.

3.54 A program of financial restructuring for public enterprises is a priority area for budgetary allocation, given the serious problem

Box 3.3: "Strategic" Sectors and Privatization.

Private investment in Egypt's second phase of liberalization is critical as public resources are fast shrinking and the Government is keen to reduce its massive indebtedness. Egypt's state-owned enterprise sector has been unable to fulfil one of its major obligations - to achieve enough profits through savings and self-finance to ensure a sustainable growth path. State ownership in itself has been responsible for this weak performance, along with the absence of sufficient enterprise autonomy.

The Government is now preparing a large-scale privatization program, and the issues of speed and sequencing have come to the fore. The state has made several pronouncements on the sectors of economic activity that are open to privatization, singling out public utilities as "strategic" sectors. It has also proceeded to divest itself of all productive entities (2,000 entities) attached to local government and has made it clear that it will sell its equity participation in all of the 245 joint ventures established since the Infitah. As to the "traditional" public enterprises subject to the new Law 203 (314 public sector companies), the Public Enterprise Office has commissioned the valuation of some 50 enterprises that are candidates for privatization, covering manufacturing, retail trade, land reclamation and tourism.

The Government should seriously consider privatization in the area of regulated monopolies (the utilities) for which developing country evidence points to many success stories throughout Asia and Latin America. Even partial divestiture, by selling some shares in the telecommunications, airline or electricity sectors, could generate tremendous gains to the Government, consumers, shareholders and workers. The experience of Mexico, Chile and Malaysia which share similarities with Egypt, shows that the increase in profits as a percentage of sales can be as much as 20 percent. The regulatory framework governing the utilities in these countries was made economically viable and transparent to ensure that the exploitation of consumers would not be a result of divestiture.

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Offering at least some shares in Egypt's public utilities for subscription by the general public would produce a number of benefits. First, it would draw on the enormous savings accumulated by Egyptians abroad, as well as on small- and medium-sized savings in Egypt. During FY91-92, some of these savings have been used to purchase short-term Treasury bills with high yields.¹ Second, it would ensure that monopolies raise their efficiency by becoming accountable not only to the Government, but also to the shareholders from the private sector. Third, it would release government funds (a portfolio shift out of the utilities) that are badly needed to expand and upgrade the social infrastructure. The state would, thus, be able to provide more and better equipped schools and hospitals. A high rate of return can be expected from expanded investments in human capital development. Fourth, privatization has proved to be an important variable in relieving the investment constraint, where fresh private capital invested in these utilities comes directly from new shareholders. In Chile, for example, the divestiture of the telecommunications company led to a doubling of capacity in only five years.

The accumulated experience of developed (e.g., UK, France, Japan) and developing countries (e.g., Mexico, Chile, Argentina, Malaysia, South Korea) shows that in most cases, divestiture has been accompanied by important gains to the economy at large. Even workers have benefited: those who are retained in the enterprise have increased their productivity and wages; those who have lost their jobs have received attractive compensation packages; and many have become shareholders in the enterprises.

For Egypt, it can be expected that there would be a significant increase in efficiency and productivity and the removal of the financial constraints on private investment.

¹ The experience in Mexico in the last 3 years (1989-91) has been that an inflow of capital (about US\$16 billion), mostly held by Mexicans residing outside the country, has been used to purchase privatized companies.

of accumulated losses affecting a number of firms. However, the finances needed for such a comprehensive reform are substantial and should optimally be undertaken as part of the larger program of privatization. Under the new organizational structure for the public enterprise sector, each holding company is in the position to design a program that simultaneously proceeds with the privatization of some of its affiliated companies while redressing the financial profile of the rest. As a part of the second phase of its reform program, the Government is preparing policies and procedures that will apply to the allocation of Government funds for enterprises that are candidates for restructuring and privatization. Privatization outlays will be limited to amounts required for meeting financial and labor restructuring costs. Restructuring outlays will be only for the injection of equity capital in public sector companies (under the Holding Companies) that are potentially viable economically and financially and for amounts that cannot be raised by the companies in capital markets. These outlays, on aggregate, will have to be within the Government's overall fiscal targets under its macroeconomic framework.

CHAPTER IV: THE PRIVATE SECTOR ROLE IN ECONOMIC ADJUSTMENT

Summary

During the periods of the First and Second Five-Year Plans there was an expansion of the private sector's role in the Egyptian economy in terms of value added, output, investment and employment. At the same time, public sector participation contracted, particularly in the industrial/commercial sectors. Medium-term adjustment requirements call for an increased expansion of the private sector in economic activity, in view of its greater productivity and the fiscal constraints facing the public sector. Policy and regulatory reforms must be continued and deepened at an accelerated pace in order to induce the private sector to undertake an increasing share of aggregate investment in the economy, allow for corresponding resource mobilization, and create a large number of new jobs, as envisioned in the Third Five-Year Plan. The generous debt relief granted to Egypt, together with the reforms implemented during the first phase (1991-93) of the Government's reform program, as well as those envisioned for the second phase, should result in a significant positive response from private investors. However, the size, as well as the timing, of the response crucially depends on the further liberalization of markets through the broadening and deepening of the reform program, particularly in the areas of trade, investment, labor, taxes and banking.

A. Performance of the Private Sector in the Last Two Five-Year Plan Periods

4.1 Since the mid-1970s, private sector investment and trade activity have gradually and consistently played a growing role in the Egyptian economy. The main pillar of the Open-Door Policy (Infitah), which was declared in October 1973, has been its generous foreign investment code, Law 43 (now Law 230), as supplemented by a liberal foreign exchange policy. The implementation of projects under this law was slow in the 1970s, as early investors met with infrastructure bottlenecks, but the momentum accelerated in the 1980s. Under Law 43 (joint venture investments), the annual size of private domestic and foreign capital flows was to rise from an average of LE 65 million in the 1975-77 period to LE 800 million in the 1981-83 period and to about LE 1.5 billion in recent years. Law 43 investments rose from less than 7 percent of gross fixed investment (GFI) in 1980 to about 10 percent in 1989. Between 1980 and 1991, the number of inland projects in operation (excluding the financial sector) rose from 265 projects with capital employed of about LE 500 million to 767 projects with LE 8.7 billion

capital employed. A little over half of the capital has been invested in the manufacturing sector.

4.2 Outside of Law 43/230, the growth in private sector activity has also been significant in petroleum, tourism, housing and trade. Whereas the petroleum sector has its own legislation regulating agreements between the state-owned Petroleum Authority and foreign multinationals, tourism has taken advantage of a separate Law for Tourism Investment which offers incentives equal to those of Law 43/230. In contrast, a negligible number of projects in trade, housing and other services can apply for special fiscal privileges; the bulk of investment activity in these sectors was undertaken under formal registration procedures. Significant investments in land reclamation and agribusiness have also taken place outside of the context of Law 43/230, many acquiring the longer tax holidays that can be obtained under the legislation for investment in remote areas.

4.3 The private sector's contribution to the Egyptian economy has, thus, undergone a substantial expansion in the last decade. According to recent MOP estimates, the ratio of gross private sector value added to GDP increased from 53.3 percent in FY83 to 63.9 percent in FY87 and then contracted somewhat to 60.0 percent in FY92 (Table 4.1). In FY83, private sector activities were concentrated in agriculture, trade and finance; a decade later, the relative share of agriculture has shrunk, and that of trade and finance and manufacturing and mining has increased substantially.

**Table 4.1: Distribution of Private Sector Value Added
1983-1992
(percentages)**

Sector	FY83	FY87	FY92
Agriculture	38.3	32.4	26.9
Manufacturing and Mining	9.3	12.9	16.6
Petroleum	4.9	2.0	3.0
Electricity	0.0	0.0	0.0
Construction	5.8	5.9	5.4
Transport and Communication	6.0	4.5	5.4
Trade and Finance	20.3	25.8	27.6
Tourism	1.7	1.2	2.2
Housing	2.7	2.0	1.6
Education, Health and Other Services	10.9	13.2	11.2
Total Private Value Added	100.0	100.0	100.0
Memo Item:			
Private Gross Value Added / Total Gross Domestic Product	53.26 ^a	63.9	60.0

Sources: MOP memorandum, "Performance of Private Sector and Alternative Scenarios for its Activity over the Third Five-Year Plan," March 1992; and MOP, "The Third Five-Year Plan," April 1992, pp. 61, 63.

^a FY82.

4.4 The growth of private sector participation appears to be most striking in manufacturing activities. This trend seems to predate the period covering the last two five-year plans, as shown by data from the Central Agency for Public Mobilization and Statistics (CAPMAS) Annual Survey of Industries (Table 4.2). Although the data is for gross output (as opposed to value added), and while formal and informal private sector manufacturing activities are quite under-represented in the survey, the trend is clear: the share of the private sector in manufacturing output expanded from 14 percent to 26 percent between FY66 and FY86, with the greatest gains in textile and chemicals, followed by paper and wood.

**Table 4.2: Private Sector Share in Manufacturing Output
1966 and 1986
(percentages)**

Sector	1966	1986
Food and Beverage	16	23
Tobacco	5	6
Textiles	9	24
Wood	30	59
Paper	37	62
Chemicals	6	31
Refractory Materials	22	38
Basic Metals	6	4
Machinery and Metal Products	17	26
Total	14	26

Source: Wafa' Abdela'tty, "Productivity in Manufacturing," CAPMAS Labor Information System Project, December 1990, Table 4.2.

Note: The table is based on the CAPMAS Annual Survey of Industries. The survey coverage includes half of total manufacturing establishments employing 10 or more workers; it covers some 5,000 private and 1,000 public establishments. It thus excludes "up to a half of private establishments (ten or more employees) in some activities in any one year... The share of private sector output is probably greater than 26 percent, even before small-scale establishments (or the so-called 'informal sector' - those reporting fewer than 10 employees)" are included. See Wafa' Abdela'tty, *op.cit.*, pp. 58-59.

4.5 The MOP attempt to take into account informal and other non-registered activities reinforces the evidence that the private sector has expanded its participation in the economy. According to recent MOP estimates, between 1981 and 1991 the share of the private sector in the output of manufactured goods grew from 39.2 percent to 55.4.¹ These estimates must be used cautiously: it should be noted that the

¹ In consumer goods, the share exceeds 90 percent in food processing, clothing, shoes, plastics, leather goods, printing and publishing. For the production of other basic consumer goods and intermediates such as sugar, cotton yarn, cement and steel, private joint ventures were established after the *infatih*, with shares in 1991 ranging from 13 percent (sugar) to 77 percent (steel rebars). Finally, the private sector has entered areas that were once the exclusive domain of the public sector, such as trucks, buses, and "white line" goods.

difference in private sector shares in the economy among estimates is quite striking if one contrasts, for example, MOP numbers with end-period data reported in Table 4.2. Nevertheless, the positive trend in private sector participation can be inferred from other data; what is less clear is the magnitude of this participation in the economy.

4.6 The expansion of private sector value added and output in Egypt has been accompanied by increased private sector investment. Table 4.3 shows the evolution of private sector GFI in FY83, FY87 and FY92, in terms of its sectoral distribution. Manufacturing and mining, housing and tourism absorbed most private investment in the period. Although GFI by the private sector rose by about 15 percent a year (in nominal terms) during the period FY83-FY91, according to the new MOP estimates, total private investment as a proportion of GDP fell from 11 percent in FY87 to 8.4 percent in FY92. Compared to other industrializing countries, this is a relatively modest proportion: in 1990, private investment-GDP ratios were, for example, 12.9 percent in Turkey; 14.5 percent in Morocco; 14.8 percent in Mexico; 14.3 percent in Indonesia; 21.1 percent in Malaysia; and 30.2 percent in Thailand.²

**Table 4.3: Distribution of Private Sector Investment
1983-1992
(percentages)**

Sector	FY83	FY87	FY92
Agriculture	3.8	4.2	7.7
Manufacturing and Mining	16.4	25.4	23.6
Petroleum	33.5	20.0	25.5
Electricity	0.3	0.2	0.0
Construction	2.2	1.7	2.1
Transport and Communication	9.6	6.2	4.3
Trade and Finance	6.4	2.7	3.3
Tourism	5.1	9.2	6.9
Housing	21.8	25.2	25.2
Education	0.4	0.4	0.7
Health	0.3	0.8	0.4
Other Services	0.2	0.4	0.2
Total	100.0	100.0	100.0
Private Gross Fixed Investment ¹ (LE billions)	3.4	5.7	11.7

Source: MOP, Third Five-Year Plan, April 1992, Tables 12 and 15; and staff estimates.

¹ Includes joint ventures.

4.7 Expanded private sector participation in productive investment is also reflected in the balance between total public and

² See Guy Pfefferman and Andrea Madarassy, "Trends in Private Investment in Developing Countries, 1992 Edition," Discussion Paper no. 14, April 1992.

private investments during the First and Second Five-Year Plans, as well as in the expectations regarding the Third Five-Year Plan (Table 4.4). The private sector share in investments aggregated over a five-year period grew from 39 percent to 43 percent between 1982/83-1986/87 and 1987/88-1991/92. Though the trend is positive in terms of the growth of investment share, it is noteworthy that the public sector continues to contribute a very large proportion of total investment.

Table 4.4: Public and Private Investment in the Five-Year Plans

	First Five-Year Plan 1982/83 - 1986/87 (current prices)		Second Five-Year Plan 1987/88 - 1991/92 (current prices)		Third Five-Year Plan 1992/93 - 1996/97 (1991/92 prices)	
	LE billion	Percent	LE billion	Percent	LE billion	Percent
Public Sector	34.4	61.0	65.7	57.2	84.0 ^a	54.5 ^a
Private Sector	22.0	39.0	49.2	42.8	70.0	45.5
Total	56.4	100.0	114.9	100.0	154.0	100.0

Source: MOP, Third Five-Year Plan, April 1992, pp. 70 and 207.

^a Includes investments by public sector enterprises, which are outside the budget beginning in 1991/92, and by the "potentially private sector," which are projected to amount to LE 4.1 billion. (See Chapters I and II.)

4.8 The importance of private sector investment is related not only to the imperative of fiscal balance (to offset the retrenchment of public sector investment), but also to the need to improve the allocation and use of resources in the Egyptian economy and to accelerate the pace of productivity growth. In this regard, time series evidence suggests, on the one hand, low levels of efficiency in public sector activities and small and falling rates of productivity growth. By contrast, there are indicators pointing to higher levels of productivity of private investment and a faster pace of labor productivity growth in the private sector (at least for manufacturing).

4.9 Economic Rates of Return. The efficiency of investments is indicated by the ex-post (actual) economic rates of return. During the period 1979-90, these averaged 15.9 percent for World Bank agricultural projects and 13.4 percent for those in industry; for private sector-focussed IFC projects they reached 20.5 percent. Incremental capital-output ratios (ICORs) calculated on the basis of periodic data for the most relevant period show public sector ICORs more than 10 times as large as those from the private sector. According to these estimates, in 1983-87, economy-wide ICORs were on the order of 3.67-6.85 for the public sector and only 0.42 for the private sector.³

³ See W. Abdeltty, *op.cit.*, Table 4.5, p. 71.

4.10 Labor Productivity. Measures of labor productivity also seem to indicate systematic differences in the performance of public and private sector activities, as in the case of manufacturing (Table 4.5). Although productivity growth for both the public and private sectors has decreased in the most recent period, the rates are still higher for the private sector. Sectorally, with few exceptions (such as wood and wood products, basic metals and metal products and nonmetallic mineral products), this pattern repeats itself: higher rates of growth in the 1975-85 period and a subsequent slowdown, with the public sector growing at slower rates in both periods.

Table 4.5: Index of Labor Productivity¹, 1975-89

	Index: 1981/82 = 100				Annual Percentage Change		
	1975	1981/82	1984/85	1988/89	1975-1984/85	1984-1985/88	1975-1988/89
Food, beverages and Tobacco							
Public	93	100	95	93	0.19	-0.29	0.04
Private ²	76	100	147	160	7.68	2.08	5.93
Total	92	100	103	103	1.26	-0.06	0.85
Textiles, Leather and Their Products							
Public	86	100	109	106	2.64	-0.65	1.62
Private ²	59	100	161	117	11.77	-7.74	5.36
Total	81	100	120	117	4.40	-0.69	2.80
Wood and Wood products							
Public	96	100	92	111	-0.39	4.74	1.16
Private ²	60	100	147	169	10.40	3.55	3.25
Total	79	100	121	148	4.88	5.13	4.95
Paper, Printing and Publishing							
Public	98	100	119	111	2.17	-1.67	0.97
Private ²	41	100	82	62	8.06	-9.96	3.20
Total	62	100	95	78	4.82	-4.86	1.74
Chemicals: Chemical, Petrochemical, Coal, Rubber and Plastic Products							
Public	76	100	124	114	5.61	-1.96	3.22
Private ²	63	100	116	114	7.03	-0.35	4.71
Total	72	100	124	123	6.20	-0.11	4.22
Nonmetallic Mineral Products							
Public	115	100	118	203	0.37	14.44	4.50
Private ²	77	100	171	284	9.28	13.52	10.57
Total	106	100	137	230	2.93	13.83	6.17
Basic Metals and Metal Products							
Public	66	100	99	154	4.72	11.51	6.76
Private ²	52	100	116	252	9.29	21.39	12.88
Total	64	100	102	174	5.38	14.19	8.01
Machinery, Transportation and Other Equipment							
Public	43	100	107	62	10.73	-12.84	2.87
Private ²	38	100	146	112	16.29	-6.52	8.73
Total	42	100	100	68	11.34	-11.67	3.68
Manufacturing							
Public	76	100	108	113	3.93	1.28	3.10
Private ²	58	100	134	148	9.86	2.44	7.52
Total	73	100	113	122	4.97	1.99	4.04

Source: Integrated Development Consultants; CAPMAS; and staff estimates.

¹ Labor productivity calculated as value of production divided by number of employees.

² Including joint venture firms.

4.11 Total Factor Productivity. Finally, falling rates of productivity growth can also be observed from estimates of total factor productivity for the economy as a whole (Table 4.6). They show that in the period 1973-79, the average annual rate of total factor productivity growth was on the order of 1.4 percent; subsequently it fell to -0.75 percent in 1980-86 and to about -1 percent in 1986-91. It should be noted that due to data difficulties, these estimates are only approximations. Further, they do not differentiate the productivity coefficients according to ownership (i.e., private and public). Still, differences in partial factor productivity growth (Table 4.5) and the far larger ICORs associated with public sector activities seem to suggest that, at least in recent years, the public sector, together with the sharp decline in investment to GDP ratio, has been in large measure responsible for deterioration in economy-wide total factor productivity performance.⁴ A reversal of this trend will require reforms to ensure the greater participation of the private sector in a more open and competitive environment.

Table 4.6: Economy-wide Total Factor Productivity Growth, 1950-91

	Average Annual Growth Rates				Contribution to GDP Growth			
	GDP	Capital	Labor	TFP ¹	Capital	Labor	TFP ¹	Total
1950-72	4.50%	4.93%	2.54%	0.66%	2.65%	1.19%	0.67%	4.50%
1973-79	9.61%	13.05%	2.65%	1.38%	6.91%	1.27%	1.43%	9.61%
1980-86	6.25%	11.11%	2.52%	-0.75%	5.84%	1.19%	-0.78%	6.25%
1986-91	2.84%	5.07%	2.35%	-0.93%	2.70%	1.09%	-0.94%	2.84%
1950-91	5.45%	7.15%	2.44%	0.48%	3.81%	1.15%	0.49%	5.45%

Source: Bank staff calculations.

¹ Total Factor Productivity, a weighted average of growth of productivity of factor inputs (capital and labor).

Note: Capital stock is calculated by applying the perpetual inventory method (assuming 4 percent depreciation) to investment series data contained in the Bank Economic and Social Database (BESD). GDP (market prices) data from BESD. Labor data (workforce) is based on data series from CAPMAS for 1960-1987; other years by extrapolation. Capital's share of income is based on regression results assuming a Cobb-Douglas production function with constant returns to scale.

B. Private Investment and Macroeconomic Stability

4.12 The private sector investment response depends crucially on the macroeconomic environment and the degree of certainty about government policies, the public sector investment program, the legal and

⁴ It may be difficult to interpret TFP growth or ICOR by type of ownership (i.e., private and public) because of the possibility of significant complementarity between public and private investment and its impact on private output. Moreover, as the public sector pulls out of the productive/commercial sectors and concentrates more of its investments in physical and social infrastructure (which lack direct, contemporaneous physical output), the aggregate public sector ICOR may, in fact, deteriorate even though the overall economic efficiency would be improving.

regulatory framework and the efficiency of labor and financial markets.⁵

4.13 Responsiveness of the Private Sector to Macroeconomic Conditions. The degree of uncertainty perceived by investors (even if investors are risk neutral and their risks diversifiable) is critical. Investment response to adjustment programs is often unexpectedly slow and weak due to the incomplete credibility of policy reforms.⁶ Unless investors view the adjustment program as internally consistent and are convinced that the Government will carry it out, the possibility of reversal will become a key determinant of the investment response. Thus, public confidence in the quality and feasibility of policy reforms is necessary to ensure that changes in the incentive regime do, indeed, stimulate investment.

4.14 It is important to stress that much of the uncertainty concerns government policy and is, therefore, under government's control. High budget deficits, for example, lead to high inflation and create uncertainty about relative prices, real interest rates and the real exchange rate. They also mean that strong stabilization measures will be introduced sooner or later; this was an important factor in preventing a better response from private investment in Turkey during most of the 1980s. The private sector often needs to see early on a strong fiscal adjustment and a critical mass of reforms in trade policy, the exchange rate and price controls in order to perceive a significant change in a policy regime. This has been a problem in Argentina, Kenya and Turkey. Mexico also experienced a period of delay as the private sector waited to see whether reforms would be reversed, as they had been in past liberalization attempts in that country. In fact, it took nearly six years for private investment to recover after the inception of the adjustment program in 1982.

4.15 In addition to the perceived fragility of initial reform efforts in developing countries, other factors play a role, including debt overhang, tight credit policies, high real interest rates and the drastic decline in public infrastructure investment complementary to private investment. Debt overhang, in particular, represents an important source of macroeconomic instability:

"In a context of uncertainty, the level of the real exchange rate and/or the demand management policies consistent with the required transfer also become uncertain; and the size of the transfer itself is not known with certainty, as it

⁵ See the World Bank, "The Third Report on Adjustment Lending," Country Economics Department, March 1992.

⁶ On this point, see Luis Servén and Andrés Solimano, "Private Investment and Macroeconomic Adjustment: A Survey," The World Bank Economic Observer, vol. 7, no. 1 (January 1992).

depends on uncontrollable factors such as the future level of world interest rates and the terms of trade. Thus investors face the risk of large swings in relative prices, taxation or aggregate demand, [that] would lead to reduced investment. [In addition], debt overhang [acts] as an anticipated foreign tax on current and future income; since part of the future return will accrue to the creditors as bigger debt service payments, the overhang discourages capital accumulation and promotes capital flight. [Finally] there is the credit rationing effect: a highly indebted country is likely to face credit constraints in the international capital markets, a situation that is equivalent to facing higher real interest rates and that will also discourage investment."⁷

4.16 Conversely, debt relief efforts were critical in moving the Mexican, Chilean and other economies to a higher growth path. First, a debt relief package reduces the net transfer of a country to its creditors, which means reduced pressure on the exchange rate and the risks associated with a local-currency-denominated public sector debt. In addition to this direct transfer effect, there is a secondary effect through the restoration of confidence and a reduction of uncertainty. For example, prior to its debt relief package, Mexico's debt service,

"would need to be met out of an already severely cut back budget. Therefore the Government would be forced to cut back public investment in line with the declines of allowable external net borrowing. [Moreover, it would be] highly unlikely that domestic interest rates would come down without a debt package... Thus, private investment would decline because of higher real interest rates, compounding the negative impact on growth caused by the fall in public investment."⁸

4.17 Mexico's circumstances are far from unique. In a recent World Bank study, econometric evidence for a relatively large sample of countries shows, inter alia, the significant impact of the debt overhang (and conversely of debt relief) on private investment (Table 4.7). According to this exercise, a percentage point increase in the ratio of foreign debt to GDP would lead to a decrease of 0.065 percentage points in the private investment-GDP ratio. These results suggest a

⁷ See Luis Servén and Andrés Solimano, "Economic Adjustment and Investment Performance in Developing Countries: The Experience of the 1980s," in Vittorio Corbo, Stanley Fisher, and Steven Webb, Adjustment Lending Revisited: Policies to Restore Growth, The World Bank, Washington, D.C., 1992.

⁸ See Sweder van Winjbergen, "The Mexican Debt Deal," in Economic Policy, no. 12, April 1991, p. 39.

potentially significant reaction by the private sector to debt relief efforts in Egypt.

4.18 Egypt's balance of payments has been significantly stronger than projected earlier, mainly as a result of the reduction in net present value of Egypt's debt to its Paris Club creditors and the subsequent sharp increase in inflows of private short-term capital. The continuation of the present favorable external environment not only allows for greater investment responsiveness by the private sector, but also provides a good opportunity for the Government to speed up the pace of structural reforms, particularly price and trade liberalization, financial sector and tax reforms, economic deregulation, public sector reform and privatization as envisioned under the second phase of the Government's reform program. As argued in Chapter II, establishing the credibility of the reform program is crucial for the emergence of a rapid and strong supply response, and the Government must aim at increasing the level of confidence of the private sector. Stop-and-go stabilization policies or a slow pace of reform in areas of trade and finance leads to uncertainty and postponement of private investment.

**Table 4.7: Determinants of Real Private Investment:
Cross-Country Regression
(Percentage of GDP)**

Effect on the Private Investment/GDP Ratio of a One Percentage Point Increase in:	Percentage Point Change
Ratio of Foreign Debt to GDP	-0.065
Ratio of Public Investment to GDP	0.257
Real GDP Growth (lagged)	0.151
Inflation Instability	-0.001
Real Exchange Rate Instability	-0.003

Source: Servén, Luis and Solimano, Andres, op.cit., Table 7.9.

Note: The figures were obtained using a sample covering the years 1975-88 and including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Kenya, Korea, Mexico, Peru, Singapore, Thailand, Turkey, Uruguay and Zimbabwe.

4.19 Response of the Private Sector to Public Sector Investment.

As already noted, the private sector investment response in adjusting countries is determined not only by macroeconomic conditions, but by the level and orientation of public investment as well. It is critical to ensure that public investment projects that are complementary to private sector productive efforts - particularly in basic physical and social infrastructure - are not unjustifiably cut back during the transition period. Conversely, those investments that crowd out private investment (either directly or through their adverse impact on public finances) or that are not essentially complementary to them should have their rationale carefully assessed. However, it is important to point out that under a system of extensive investment licensing as has been the

case in Egypt, public investment directly crowds out private investment, quite apart from any financial or interest rate considerations. Typically, licenses are granted largely on the basis of certain prerequisites such as "adequacy of sectoral capacity." Then, if the "capacity" is already being met by public enterprises, licenses to private companies could be denied automatically.

4.20 In the econometric investigation discussed above (Table 4.7), the complementarity between public and private investments dominated the sample. A one percent increase in the ratio of public investment to GDP increased the private investment-GDP ratio by 0.257 percentage points. It is interesting that in this sample the public investment impact on private investment is far more important than the variable classically associated with the resumption of private investment, namely, real GDP growth. However, it is important to point out that whether public investment is complementary with or a substitute for private investment depends crucially on the composition of the former. The positive association between private and public investments, as indicated in the above-mentioned regression, most probably reflects a compositional effect of public investment. Recent empirical evidence indicates that when public investment represents a small share of the total investment (i.e., public investment is primarily directed at the provision of certain essential physical and social infrastructure, with little or no public involvement in industry), additional public investment tends to raise efficiency and growth. However, this contribution of increases in public investment, on the margin, declines rapidly as the share of public investment in the total rises.⁹ In the case of Egypt, a recent study finds evidence that public investment in infrastructure is complementary with private investment; by contrast, other public investment expenditure would have the standard crowding out effects, through their adverse impact on the availability of financing to the private sector.¹⁰

C. Adequacy of Incentive Structure

4.21 The magnitude and efficiency of investment and output response in Egypt will depend on how decisively the Government moves on: (i) trade and tax reforms and (ii) price reforms and changes in the regulatory framework, especially in the areas of industrial licensing and location, privatization, labor legislation and the development of an efficient capital market. As indicated in Chapter II, private investment has been declining both in real terms and as a percentage of GDP since 1986. Despite the Paris Club debt relief of May 1991 and the structural reforms that took place in 1991/92 and 1992/93, private sector investment has remained weak. This is partly due to the slowdown

⁹ World Bank, Developing the Private Sector: The World Bank's Experience and Approach, 1991.

¹⁰ Nemat Shafik, "Private Investment and Public Policy: The Egyptian Case," in A. Chibber, M. Dailami, and N. Shafik, Reviving Private Investment in Developing Countries, North Holland, 1992.

in the pace of economic activity and to relatively tight financial conditions and relatively high real interest rates. However, the main reason for the delay in the private sector's response to the reforms could be that the pace of trade and regulatory reforms have lagged too far behind the macroeconomic policy corrections.

4.22 Reforms in the Trade Regime. In the past, a major component of trade policy in Egypt was the provision of high protection to import substitution activities through a number of non-tariff barriers (NTBs). Before the current reform started, nearly 53 percent of total agricultural and manufacturing output was protected by NTBs (import bans), with protection being the greatest for public sector production. PEs were accorded specific annual foreign exchange quotas with priority over private sector companies. While NTBs had been pervasive in Egypt, import tariffs for most items were not generally excessively high.¹¹ Moreover, Egypt has had a system of explicit and implicit export taxes and of NTBs to exports (e.g., export licenses, quotas, prior approvals). By 1993, as a part of the current reform program, nearly all NTBs were removed; total agricultural and manufacturing output protected by import bans was reduced to 4.5 percent. Although the maximum tariff rate is being reduced (from 80 percent in 1992 to 50 percent by July 1995), the maximum and the weighted average tariff rate would still be higher than the average for the strong adjusters among the developing countries.

4.23 An increase in the tradable goods sector, which is a major aim of the Third Five-Year Plan, is already being stimulated by lower barriers to trade and a more competitive exchange rate. This is expected to direct the allocation of resources and shift the locus of private sector activity towards areas of comparative advantage, characterized by greater labor intensity and export orientation. Liberalizing the trade regime, reducing its anti-export bias, and increasing the extent of import competition would thus function to improve allocative efficiency, shift out labor demand (while increasing the underlying elasticities) and expand markets for Egypt's products (which would itself have a positive impact on the technical efficiency of production with the increase in economies of scale). Moreover, in most rapidly recovering economies, investment resumption followed export growth (both in absolute terms and as a share of GDP) by about one year. The post-adjustment boom in these economies did not result from investment demand stimulating aggregate demand, but from investment responding to export-led growth.

4.24 The Third Five-Year Plan assumes an annual rate of growth in the volume of exports of 6 percent: 16 percent a year for manufactured goods, 9.5 percent a year for agricultural products and minus 3.6 percent a year for petroleum. The assumptions for non-oil merchandise exports may be somewhat optimistic. It is true that exports of industrial commodities grew at an average annual rate of 15.7 percent

¹¹ In 1990, the import weighted average tariff rate, reflecting tariff exonerations, was 14.5 percent, with an average nominal tariff for manufactured goods averaging about 24 percent.

between 1981/82 and 1990/91 (from US\$540 million to US\$1,803 million); however, they started from a relatively small base and sustaining these rates will require substantial efforts from exporters and a very supportive policy regime. Agricultural exports, on the other hand, decreased at an annual rate of 2.6 percent (from US\$570 million to US\$352 million). A reversal of this trend will not be achieved unless regulatory changes are effected (including the elimination of export bans and restrictions, ending discrimination in favor of public enterprises and removal of entry barriers against foreign trading companies) and agricultural export promotion becomes high on the policy agenda.

4.25 In order that these substantial growth targets for non-oil exports be fulfilled, it is essential that the Government deepen the trade reform, as it intends to do over the next three years. The effectiveness of trade reform depends on the presence of economic agents capable of establishing a multiplicity of conduits with the international market so as to preclude the exercise of monopoly power by dominant, vertically integrated producers-wholesalers. Foreign and domestic trading activities should be open to all firms, independent of national origin. Cross-country experience suggests that foreign companies should be explicitly allowed to engage in both import and export trade (including in agriculture), thereby bringing scarce marketing skills and access to distribution networks while improving the competitive environment in this critical sector. This is most important for high value-added and perishable export crops such as fruits and vegetables. Such measures would complement Egypt's liberal foreign investment regulations and encourage an increased flow of foreign investments to areas of Egypt's greatest comparative advantage.

4.26 Export-oriented activities also depend on the level of competition in domestic markets. All barriers to domestic competition function as export barriers by increasing the relative profitability of domestic sales, thus, the importance of removing these barriers and introducing a balanced and effective mix of competition policies. As domestic markets become more competitive and less profitable, producers are stimulated to enter or substantially expand their commitments to international markets. The role of a supportive export policy is to ensure free trade - at least for exporters - as import liberalization is introduced and to provide the marketing, finance and infrastructure needed to compete in export markets. Import and domestic competition help narrow the profitability differential between domestic and export sales: they enable pro-export arrangements to tip the balance in favor of the international market.

4.27 The experience of successful East Asian economies (particularly those of Singapore, Hong Kong and Korea) is instructive regarding how exporters in these countries were put on an equal footing with their international competitors. A long-term, stable and credible commitment to achieving high rates of export growth was critical to their performance, as was an aggressively competitive exchange rate

policy.¹² Often, the export-expansion drive was spearheaded by transnational firms (as in the case of Singapore, for example). A non-discriminatory treatment towards these firms, in the context of a well-articulated policy ensuring that producers are subject to the rivalry of export markets, has been most effective in maximizing economic gains.

4.28 A number of key institutional mechanisms also helped.¹³ First, free trade status was granted to all activities that generated export value added, initially through duty exemption or duty drawback systems (in Korea and Singapore). This mechanism was then broadened to include smaller, indirect exporters (subcontractors and suppliers of parts, components and raw materials) and was incorporated into institutional arrangements (such as free trade zones). Second, financial markets supported exporters by ensuring them automatic access to credit. Financing arrangements were modernized and a number of financial innovations introduced. These included undisrupted and speedy rediscount by central banks, pre-shipment export finance, automatic loan disbursement, liquidation mechanisms tied to import and export bill negotiations, domestic letters of credit systems, export credit insurance mechanisms and post-shipment finance arrangements.

4.29 The effectiveness of these instruments was not only based on their innovative design but also on the principles that guided their use. As already stressed, automaticity and expediency have been the key means of minimizing administrative uncertainty and accelerating exporters' response time. Also important has been the equal treatment of all activities that generate export value added, no matter if originating in national or transnational firms. The prevention of abuse, the simplification of administrative procedures and the decentralization of authority to either public or private agencies (commercial banks and export associations) have routinized and given impetus to export activities.

4.30 Finally, the support of export-oriented manufacturing and agriculture also calls for substantial improvements in management skills, product quality and productivity. On the one hand, this is predicated on the reform of the incentives regime: an increase in the degree of competition will force managers to improve the efficiency of operations. Greater resource mobility (as barriers to entry fall and labor regulations are reformed) and access to technology will allow managers to respond to the pressures of a more open and competitive economy. However, investment in human capital by the public sector plays an important complementary role: the competitiveness of all

¹² In Korea, credibility was promoted through the Government's adherence to long-term trade objectives and policies, which included setting export target systems; negotiating and diligently pursuing export targets; and establishing an appropriate forum ("trade promotion" meetings) to discuss these and other export-related matters with the management of exporting firms. See The World Bank, "Export Policies and Administration," EDI Policy Seminar Report Series, no. 7, 1987.

¹³ See Y.W. Rhee, "Instruments for Export Policy and Administration," World Bank Staff Working Paper 725, 1985.

enterprises is increasingly determined by the quality of the education and training received by the labor force. The extent to which workers have the general or basic skills to be functionally flexible or mobile, and their ability to communicate with customers and respond to the fast-changing requirements of global markets, determines how successful enterprises will be.

4.31 Reform of the Tax System. In Egypt the tax structure and its administration will have to be rationalized in order to encourage investment, especially in the stock market, and to avoid business uncertainty and inequity.¹⁴ The variety, administrative complexity and duplication of taxes on business add substantially to the costs of running an enterprise. This is especially true for small firms and often results in their remaining outside the formal economy. In addition, marginal tax rates on industry and on share dividends are presently too high, while many types of investment are totally tax exempt. Those investors that do enjoy tax incentives are subject to a considerable element of arbitrariness in fixing tax liabilities. A new global personal income tax has been submitted by the Government to Parliament. The new system would entail a lowering of tax rates while widening the tax base and improving tax collection. Also, the Government has ended the practice of renewing corporate tax holidays.

4.32 In this regard, costly fiscal incentives should not be used as a means of stimulating economic activity. If the fiscal regime is an undue burden on entry (or on a firm's operations), its reform should take precedence over ad hoc (and often unsustainable) tax breaks. These generate heavy fiscal burdens, bias the choice of techniques and, particularly after their prolonged use, come to favor incumbents in highly concentrated industries while fostering anticompetitive practices.¹⁵ Finally, as a part of the tax reform program, the Government is considering reforming the existing investment incentive structure.

D. Removal of Regulatory Barriers

4.33 In order to promote private sector investment in production activities and to reinforce trade and exchange rate reforms, it is

¹⁴ A study of the constraints to enterprise growth and operation in the private sector reveals that in food, textiles and engineering, the tax structure and administration were the most important constraints. See The World Bank, "Arab Republic of Egypt: The Private Sector Regulatory Environment," Report No. 10049-EGT, January 1992.

¹⁵ In Argentina, for example, the incentive system allowed established firms to obtain unit cost advantages of up to 41 percent, which helped them consolidate their market position. Entrants, competing for scarce fiscal resources, were at a disadvantage relative to well-informed incumbents who had already demonstrated the ability to fulfill domestic demand requirements. The system's bias in favor of capital-intensive techniques and low value-added activities, in which Argentina had no obvious comparative advantage, and its emphasis on mature and declining sectors deterred investment in new industrial segments and slowed industrial restructuring. The removal of the most distortionary aspects of the regime improved efficiency but did not deter producers from undertaking their investment plans.

necessary to deepen policy changes in a number of key areas: price liberalization, licensing, investment, taxation and labor regulations.

4.34 Price Decontrol. It is desirable that the Government of Egypt complete the process of price reform in areas where prices are still controlled or subsidized. Price liberalization, which began in 1986, has covered the selling price of nearly all manufactured goods produced by public enterprises. This has significantly reduced relative price distortions in the economy and has improved the financial results of these enterprises (see Chapter III). However, the prices of some key intermediate goods, such as energy and raw cotton, are still subsidized; they are due to reach their international price equivalents by the middle of the Third Five-Year Plan period. All projected price increases should be publicized quickly so that producers undertake the necessary steps to revise their investment and output plans accordingly. In particular, energy-intensive and textile industries may need to restructure or discontinue some of their activities as domestic prices converge to international levels.

4.35 Price liberalization should be accompanied by the removal of barriers to competition. A comprehensive competition policy, including the introduction of an effective antitrust mechanism, is required in highly oligopolized economies that have grown accustomed to price controls. By institutionalizing the frequency and method of price setting, controls not only tend to preclude price competition, but induce explicit and tacit collusion among firms, both when price controls are in effect and after they are eliminated (as was the case in Brazil). As prices are fully liberalized, rivalry needs to be stimulated by lowering trade barriers to attract newcomers to markets while curbing monopolistic conduct.

4.36 Removal of Licensing. The revised negative list for investment licensing should be published, and procedures for registration and the start-up of operations should be simplified. Industrial licensing is a major impediment to entry, operation and capacity expansion in a number of manufacturing branches. In 1991, investment licensing requirements were reduced with the introduction of a negative list; this list is to be eliminated by December 1993, except for a limited number of products or activities that would jeopardize public health, the environment or national security. For non-negative list investments, only registration is required and is to be processed within the statutory period of two weeks. Investors in capacity expansion are asked to register and fill in a form similar to the one for new investments. However, there still is much scope for liberalizing the investment regime. Both the General Organization for Industrialization (GOFI) and the General Authority for Investment and Free Zones (GAFI) will be shifting their emphasis from investment regulation to investment promotion and information dissemination. Until July 1993, the negative list of industrial investments requiring license included: investments in Sinai, assembly industries with local content requirements, energy-intensive industries, military products and related industries, and tobacco and tobacco products. Under the reform program,

the Government is limiting the negative list to investments in Sinai (national security), military production (strictly military goods) and tobacco and tobacco products. Investments relating to local content requirement were removed in July 1993, and those relating to energy-intensive industries will be removed by end-1993. For changes in location of a plant, simple registration will replace licensing. Government decrees instituting investment approval procedures and prior establishment and OFI licensing will be abolished by end-1993. The current procedure for forming a company will be replaced by simple registration by end-1994.

4.37 It is worth stressing that capacity licensing and related systems have often served to preclude potential competition by regulating entry, encouraging entry-deterrence by incumbents and reducing actual competition by constraining supply. Capacity licensing in India, for example, used to function as a significant, and often binding, barrier to entry and growth outside the small-scale sector. Incumbents filed applications for additional capacity to preempt the entry or expansion of competitors; firms also accumulated licenses to ensure a pipeline of potential projects. With licensed capacity fixed according to projections of domestic demand, unused licenses resulted in excess demand. Incumbent producers were able to reap high rents from poor quality goods in markets protected from domestic and import competition. In Pakistan, licensing has been used to avoid excess capacity and reduce market concentration. However, while protecting incumbents, it has also deterred growth, preventing producers from reaching a minimum efficient scale of production.

4.38 Regulatory constraints often go beyond capacity licensing. In Mexico, extensive bureaucratic requirements significantly raised the cost of doing business. Lengthy procedures were needed not only to open or expand industrial firm capacity but to import inputs, price goods or close an enterprise. These procedures caused particular problems for small- and medium-size producers since large national and transnational firms had specialized departments to deal with these requirements. While these transaction costs are difficult to measure, they are not insignificant: they could account for 5 percent of a firm's operating costs, and opening a business could require up to 420 man-days. More important, by disproportionately affecting smaller firms, they stifled an important source of domestic competitive pressure in a country where imports were tightly regulated.

4.39 In Mexico, India and other countries, the removal of regulatory and bureaucratic barriers to competition and growth stimulated a substantial supply response from producers. Anti-competitive and excessive government regulations were abolished, and firms were freely allowed to enter and expand in markets. In Chile, for instance, about half the growth of manufacturing output in 1978-85 was due to the entry of firms, some new and some switching from other sectors. In Thailand, entry was the most important source of investment and output recovery following adjustment.

4.40 Finally, when government regulation directly or indirectly awards a monopoly position to certain enterprises, especially public ones, it discourages private investment. Allowing the free entry of private competitors to public sector firms, while reducing or eliminating fiscal subsidies to them, can improve efficiency and may be an intermediate step toward privatization (see below). This happened in manufacturing in Colombia and Turkey in the 1980s. The removal of public enterprise monopolies on urban services in Jamaica, Morocco and Sri Lanka opened the way for rapid expansion and investment by private firms.

4.41 Privatization and Private Sector Development. The privatization program in Egypt is beginning to gain momentum as the necessary institutional set-up is being put in place. The Government envisages using all modes of privatization, from the sale of assets of state-owned enterprises, or the sale of their shares to the public, to the sale or liquidation of entire companies (see Chapter XI for further discussion of the privatization program). However, the Government's approach to privatization is still not sufficiently broad in scope; a number of sectors of economic activity, such as transport, power and telecommunications, the so-called "strategic industries," would remain unaffected, despite the large potential gains from privatization (see Chapter III). The privatization program is also critical for the response of private investment, as a signal of the Government's willingness to move towards an economy in which the private sector will play the leading role.

4.42 In retreating from productive activities, the public sector faces a number of strategic alternatives and associated trade-offs. In most productive and commercial activities, straight privatization may be the preferred option, though in some cases this option cannot be exercised immediately, prior to an enterprise's restructuring, corporatization and demonopolization. In activities characterized by natural monopolies and nontradeability (such as transportation and communications), privatization may require the Government to change the regulatory environment to allow private sector entry, as well as to exercise some control over monopoly power.

4.43 Privatization programs in such countries as Argentina, Chile, Mexico, Venezuela and Tanzania have sent an important signal to the private sector that the government is prepared to accept the entry of new private firms (and foreign investors), as well as to transfer existing public assets. This reduction in barriers to entry and investment has resulted in substantial increases in investment within many of the privatized sectors. Indeed, one of the consequences of selling public enterprises in Chile, Malaysia, Mexico and the United Kingdom was a dramatic increase in investment. In telecommunications, airlines, and electrical generation and distribution, private investment increased substantially in the newly divested industries.

4.44 Cross-country experience also suggests there are a multiplicity of means to make private sector involvement in areas

traditionally dominated by the public sector not only feasible, but conducive to large economic and fiscal gains. For example, as mentioned in Chapter III, the private sector can build facilities and operate them for a certain number of years, at the end of which time they can be transferred to the public sector (as in power generation); it can operate existing facilities under government concession or actually buy out these facilities (such as segments of the railroad system, hospitals and other health facilities); or it can finance the buildup or expansion of capacity against access to a pre-agreed part of the output for a given time period.

4.45 There are many more ways to expand the role of the private sector. However, all methods basically depend on two fundamental preconditions. First, the Government must allow the entry of the private sector in those areas that have been traditionally reserved to the public sector, ensuring, moreover, an even treatment with existing public sector entities. The object is to stimulate competition, potential or actual, wherever possible. Sometimes activities that were thought to be in the realm of natural monopolies are actually consistent with competitive markets, as in the case of telecommunications value-added services. Second, deregulation, in the sense of prying the market open to new actors, must be accompanied by the institution of regulatory bodies and mechanisms. In the case of utilities, for example, rates need to be set not only for one period but over time, in a way that consumers are protected and efficiency stimulated; standards need to be established and monitored; and alternative forms of building a competitive environment searched for. Ultimately, however, private sector involvement requires the buildup of confidence in the government's ability and willingness to carry out a program of policy and regulatory reforms that leads towards a more open and competitive economy.

4.46 Labor Market Deregulation. The adjustment that Egypt will be undergoing in the next two to three years will necessarily imply economic dislocations; as the economy becomes more open and competitive, there will be shifts in the composition of labor demand and in sources of employment. Although it appears that the extent of labor shedding in public enterprises could be significant, it will not be dramatic, in part because some reduction in employment has already taken place through attrition over the last five years. Instead, the most critical issue is the relatively high level of unemployment (variously estimated at between 9 percent and 15 percent), of which about 1.5 million are unemployed graduates of secondary schools and universities, and the yearly additions of 100,000 to the ranks of these structurally unemployed. To the extent that the employment-related costs of adjustment (as it is currently designed) are relatively low when compared both to the stock and flow of the unemployed, the Government should accelerate the process of adjustment and structural change in the public enterprise sector, particularly in view of the cushion presently available in the balance of payments. On the other hand, civil service reform, which is being seriously contemplated by the Government, could entail substantial re-deployments and layoffs due to the relatively high

levels of disguised unemployment (see Chapter III). Between 1976 and 1986, government employment (excluding economic authorities and public enterprises) provided 53 percent of the net increase in employment; it reached 3.5 million employees, or 27 percent of total employment, by 1990.

4.47 Current labor regulations are a major obstacle to increased labor absorption. Labor regulations need to be changed in order to allow employees to respond to changing market conditions, to induce labor mobility and to encourage labor-intensive activities. The current system is too rigid and undermines labor discipline, leading to a preference on the part of investors for projects with unnecessarily high capital-intensity. The system also poses an obstacle to business formation and enterprise restructuring and exit. The government monopoly on job placement through the Ministry of Labor and its placement service should be eliminated. Over the medium term, businesses should be permitted to lay off workers after just compensation and dismiss them in violation of disciplinary rules. At the same time, government guarantees of employment for graduates should be removed and government hiring frozen in view of the current high levels of overstaffing.

4.48 Cross-country evidence points to the adverse effects that rigidities in the regulatory regime governing labor relations can have on economic growth and efficiency gains. In Colombia, prior to the December 1990 reforms, private firms were prohibited by law from redeploying workers within the enterprise, thus greatly reducing the flexibility with which firms could respond to changes in the relative profitability of individual product lines brought about by the opening of the economy. Similar problems affected firms in Cote d'Ivoire that were attempting to restructure. In Mali and Senegal, until recently, the government had a monopoly on all hiring. As a result, the private sector in these countries incurred transaction costs by going through the government to recruit workers or by evading government recruitment regulations. These monopolies were recently eliminated in the context of adjustment programs.

4.49 It is important to note that rigidities in labor legislation encourage the operation of unprofitable firms while deterring the entry and expansion of potentially profitable enterprises. Constraints on labor mobility tend to hamper the responsiveness of private investment to incentive changes by adding to the exit costs that investors would incur if their projects were to fail. Managers would be reluctant to undertake new activities, choosing instead to expand operations by incremental steps, even if such an approach is less economical. The high costs associated with exiting make entrepreneurs more cautious in their investment plans, foregoing opportunities that - in a more flexible regime - would lead to the expansion of capacity. Exit barriers often block the introduction of new or better technologies that necessitate eliminating product lines and scrapping older plants. Investors resist shifting resources to areas characterized by rapid demand changes and short product cycles. Labor market flexibility, both

internal and external to firms, has become essential to adjustment and the resumption of economic growth.

4.50 Reforms are critical if the relatively low observed elasticities of labor demand with respect to growth in value added (which in the last 10 years have been less than 0.5 for most sectors in Egypt) are to be addressed. In addition to the major changes required in labor regulations, reducing the level of illiteracy, strengthening basic and adult education and improving workers' skills are fundamental if labor absorption is to increase as output expands. Moreover, a decisive, well articulated and publicized approach to reform would help elicit the necessary supply response, particularly where its employment-creating potential is highest: in manufacturing export-oriented activities and in small and medium-scale industry.

4.51 The growth in the number and importance of small- and medium-scale establishments in the last 10-15 years has been impressive, despite the number of constraints these firms face. In manufacturing, the two outstanding features over the 1976-86 period are the growth of private sector activity, particularly in rural areas, in terms of establishments and, more strikingly, in the number of jobs created (Table 4.8). Average annual employment growth in manufacturing for the period was 2.1 percent, though in private rural establishments it reached 5.7 percent. In addition to problems related to tax structure and administration and very limited credit, small- and medium-sized firms are also constrained by the scarcity of serviced land and the growing regulatory restrictions in the location of economic activity.

Table 4.8: Manufacturing Establishments and Employees, 1986 and Percentage Growth between 1976 and 1986

	Total		Urban		Rural	
	Firms	Employment	Firms	Employment	Firms	Employment
Public Sector	2,639	693,948	2,261	602,715	378	81,233
Growth Rate	30.1	9.0	27.1	7.3	51.2	26.1
Private Sector	211,957	658,403	145,863	488,802	66,094	169,094
Growth Rate	28.4	42.7	25.9	34.2	34.2	73.9
Total	214,595	1,342,351	148,124	1,091,157	66,472	250,834
Growth Rate	28.4	23.1	26.4	17.9	34.3	54.1

Source: Census of Establishments, 1976 and 1986.

4.52 Financial Sector Reform. To achieve a high rate of growth in the medium term, the reform program must be complemented by new investments. The prevalence of educated youths among the unemployed suggests that the labor-capital ratios must remain fairly high to absorb these new entrants and preserve social stability. However, even if ICORs and investment efficiency improve and labor demand elasticities

expand, the rate of investment would still need to rise from its current low level of about 18 percent of GDP before any appreciable increase in output or employment growth is achieved. This presupposes further efforts in resource mobilization. The financial and foreign exchange reforms under way and the gradual erosion of the image of an all encompassing welfare state are likely to lead to larger-than-projected increases in private domestic savings, while an acceleration of reforms on the real side should allow for further repatriation of flight capital. These trends highlight the need for financial institutional development, which is recognized by the Government and reflected in its agenda of reforms for the financial sector over the next three years.

4.53 The development of financial institutions and markets is crucial to raising the supply of capital, increasing the return on this relatively scarce resource and directing its allocation to its most efficient uses. This entails increasing competition and soundness in the commercial banking sector, encouraging the development of investment banking, deepening the money and bond markets and reviving the stock market. In this respect, interest rate liberalization is critical to mobilize domestic savings, avoid unwarranted capital deepening and act as a filter to investment projects. The liberalization of financial markets also requires the elimination of any discrimination in favor of public sector banks; entry, for example, should be free, subject to some minimum capital requirement and the vigilance of appropriate regulatory and supervision mechanisms. This should apply both to the physical expansion of banks (through new branch opening) and the offer of new financial products.

4.54 The Egyptian banking system consists of four large, public sector banks, accounting for over 80 percent of the total assets of commercial banks, and several small commercial banks that concentrate on wholesale business and offer deposit and other services.¹⁶ Investment banking is limited to a few concerns. The Egyptian banking system has long been subject to a wide array of regulations that inhibited competition and innovation. The recent liberalization of both interest rates and the exchange rate has initiated a major program of banking and financial deregulation. The major banks have been able to shoulder the implied capital losses through a massive recapitalization. However, given the comprehensiveness of traditional controls, much remains to be done before a fully competitive, efficient and sound system can be established. In particular, financial sector policies should encourage banks to deal more aggressively with nonperforming assets, restructuring viable concerns and writing off bad loans while adopting more prudent lending behavior. A first step has been to strengthen the central bank's supervision and control. Information and monitoring systems, which are needed to supervise questionable assets and to make bank portfolios more transparent, are being strengthened. The Egyptian authorities have introduced a comprehensive amendment to the banking

¹⁶ For a comprehensive study of financial institutions in Egypt, see: World Bank, Arab Republic of Egypt: Financial Policy for Adjustment and Growth, October, 1993.

rules, placing growing emphasis on prudential regulations. Decisive actions have been taken by the Central Bank to strengthen the capital position of all banks and to regulate capital adequacy, loan classification and provision, foreign currency exposure and risk concentration.

4.55 An efficient crisis resolution mechanism is also needed to avert bank failures without creating insurmountable moral hazard problems. The Central Bank's role is being strengthened in initiating bank restructuring, calling for capital replenishment, arranging for suitable mergers and liquidating insolvent banks. An exit mechanism is essential for preventing the lowering of credit standards and avoiding competitive distortions in the banking market as financially weak banks tend to undermine credit standards and bid excessively for deposits.

4.56 The supply of modern financial services in leasing, factoring and, especially, in investment banking has suffered from the absence of enabling legislation and the weaknesses of the securities market. The expansion of the market for Treasury bills is very promising, particularly as longer maturities have been introduced. In addition, it is necessary to revive the stock market with appropriate measures, including improving the access of domestic and foreign institutional investors to the market, stimulating privately held firms to open their capital, appropriately taxing distributed dividends and ensuring the rights of minority stockholders. In addition, the Government should use the stock market as one of the mechanisms for relinquishing ownership of public enterprises. The experience of other countries with emerging markets suggests that these are the key elements in promoting the development of the stock market. A revived stock market is particularly important in view of the fact that private firms are expected to draw their investment funds mostly from their own resources.¹⁷ The Government has begun planning and implementing a series of reforms in the securities markets to provide an environment conducive for growth in the issuance and trading of both government and corporate securities.

4.57 Foreign borrowing by the private sector could expand the pool of resources available for investment. It is, however, crucial that the foreign exchange and project risks inherent in such transactions remain with the private sector, rather than with the Government. In the past, external borrowing was contracted mainly by public sector banks, thus nationalizing the foreign exchange risk. In addition to the efficiency losses from this implicit subsidy on credit, there have been significant macroeconomic costs associated with the recent recapitalization of those banks by the Government (in the form of compensation for the losses sustained in the wake of the depreciation of the pound).

¹⁷ Self-finance accounts for 67 percent of investment outlay. This, according to NIB officials, reflects the expected fall in debt-to-equity ratios following increased interest rates.

4.58 Cross-country evidence supports the need for financial sector reform when the macroeconomic environment is stabilized. In Ecuador, market-oriented reforms of the financial sector significantly increased the access of efficient firms to credit; for Indonesia, this efficiency effect is less clear cut, but there is unambiguous evidence that the lessening of credit has acted as a restraining factor on investments of small firms. In South Korea, reforms improved access to credit for firms of all sizes. At the macro level, cross-country evidence shows that the services provided by financial intermediaries promote long-term growth by improving the efficiency with which economies allocate resources.

E. Role of the Private Sector in the Third Five-Year Plan

4.59 As discussed in Chapters II and III, until the early 1980s, the Egyptian economy was dominated by the public sector. The share of public investment in GDP in FY82 was about 21 percent, as compared to only a 12 percent share for the private sector. However, since FY86 the share of public investment in GDP has declined as a result of shrinking revenues and attempts by the Government to restrict its budget deficit, reaching an estimated 11 percent for FY92. On the other hand, based on recently revised data by MOP, private investment, which until recently hovered around 12 percent of GDP, has declined significantly; preliminary estimates indicate that it may have declined to around 8 percent of GDP in FY93. As noted above, data for aggregate investments and GDP have been revised upwards by MOP so as to include new estimates of the size of the informal sector. According to those figures, the share of the private sector in aggregate investment expenditures averaged 39.0 percent during the First Five-Year Plan and increased further, to 42.8 percent, over the first four years of the Second Five-Year Plan (Table 4.4, above).

4.60 As discussed in Chapter II, it is difficult to gauge the expected change in the size of the public and private sectors using the information provided by the Third Five-Year Plan. First, value-added projections, which are disaggregated into private and public sources, are provided for the first and last year of the plan. However, investment figures similarly disaggregated, are provided only for the five-year totals. In addition, they include a new category of investment ("potential private sector") that is hard to classify but accounts for about 2.5 percent of total investment over the Third Plan period. It is understood that this category consists of "highly profitable" projects, mainly in the industrial, communication and transport sectors, that will be undertaken by public enterprises unless the private sector accepts to take them over. Second, the yearly information provided by the national accounts, balance of payments and the budget (again first and last years only) cannot be used to derive the flow of funds between the private and public sectors because the budget accounts exclude the economic authorities and the public enterprises. Information that is provided by MOP and NIB about the financing of investment for the five-year aggregates indicates that

private investment is expected to be financed mainly through private sector savings and its assets abroad.

4.61 Private Sector's Share in Output and GDP. According to the value-added projections of the Third Five-Year Plan, the share of the private sector (including "potential private sector" activities) is expected to increase from 60 to 65 percent of total value added. This represents an average annual increase of 6.7 percent for the private sector, against a much lower growth of 2.4 percent for the public sector (Table 4.9).

**Table 4.9: Gross Private Sector Output and GDP
During the Third Five-Year Plan
(1991/92 prices; LE billions)**

	Gross Output			Gross Domestic Product		
	Level 1991/92	1996/97	Pct. Growth (per annum)	Level 1991/92	1996/97	Pct. Growth (per annum)
Commodity Sectors	72.3	103.2	7.4	39.1	54.2	6.7
Productive Service Sectors	40.1	55.1	6.5	26.3	36.9	7.0
Social Service Sectors	11.3	14.3	4.8	9.8	13.1	6.1
Total	123.7	172.6	6.9	75.2	104.2	5.7

Source: MOP, Third Five-Year Plan, April 1992, p. 297.

4.62 Private Sector's Share in Investment. Of the five-year cumulative investment figures, the private sector's share is 45.4 percent, and that of the Government (central and local plus service authorities) and the economic authorities is 21 percent each; the public enterprises and the "potentially private sector" represent 10.5 and 2.5 percent of the total, respectively. Within the commodity sectors, agriculture and manufacturing are the areas where private sector investment shares are to remain strong - and from where more than a third of total private investment is projected to come. On the other hand, the Government does not appear to contemplate private sector investment in electricity and related utilities, which detracts from the overall objective of a higher level of private sector participation in the economy (Table 4.10).

4.63 Starting from the level of private investment by sector in FY92, and assuming constant growth rates, it is possible to estimate the paths for each category of investment, which are not provided in the Third Five-Year Plan documents. To achieve the overall "target" of LE 70 billion (in 1991/92 prices) in cumulative investments, under the "Lagged Supply Response Scenario" private sector investment has to grow, on average, about 11.5 percent a year in the period FY94-97, thus increasing its share of GDP (at market prices) from about 8 percent in FY92 to about 10.5 percent, or over 50 percent of total investment, by FY97. (See Chapter II for different scenarios for private investment.) Nonetheless, it is important to note that the LE 70 billion figures is a rough "target" by MOP and the extent of investments by the private

sector will depend on the extent of the privatization of public enterprises, private sector involvement in new projects and, more importantly, the speed with which the second phase of the reforms will be implemented.

Table 4.10: Total and Private Investment
Five-Year Aggregate, 1992/93 - 1996/97
 (1991/92 prices; LE billions)

	Total	Private ¹	Private as Percentage of Total
Agriculture	13.9	5.6	40.2
Industry and Mining	28.0	18.3	65.3
Petroleum	15.0	10.0	66.7
Electricity	17.7	0.0	0.0
Construction	2.6	1.4	53.8
Productive Services ²	30.1	13.4	44.5
Social Services ³	46.7	21.3	45.6
Total	154.0	70.0	45.4

Source: MOP, Third Five-Year Plan, April 1992, p. 181 for total investment.

¹ World Bank mission estimates for private sector investment levels implicit in Third Five-Year Plan's projections.

² Transport; Communications; Suez Canal; Trade, Finance and Insurance; and Tourism.

³ Housing; Education; and Health.

4.64 Sectoral Allocations of Private Investment. It is clear that both disaggregated value-added and cumulative investment figures for the private sector depend on the extent to which the private sector undertakes projects originally in the public sector's domain; however, the nature of these projects and their potential attractiveness to the private sector are still unclear. Both the aggregate and sectoral distributions of private sector shares are only rough estimates of potential private sector participation and are derived as residuals, which may or may not materialize; they are dependent upon the Government's sustaining the momentum for policy reforms in the Third Five-Year Plan period and undertaking decisive changes in the regulatory environment. Such is the case, for example, in manufacturing industry, where the share of the total private sector in GDP (value added) has consistently expanded: from 38.1 percent in the First Five-Year Plan to 48.9 percent in the Second Five-Year Plan to a projected 68 percent by the end of the Third Plan period (see Table 4.11). Such hoped for expansion is a prerequisite if the manufacturing sector's contribution to GDP is to expand beyond the current 17.1 percent to the expected 18.8 percent in the last year of the Third Plan.

4.65 The shares of the private sector in education and health are expected to undergo substantial expansion as well during the Third Five-Year Plan; this presupposes that regulatory changes allowing the private

sector to invest in education are undertaken, and that constraints, such as credit in the case of investments in health care, are relieved. Similar expansions are expected in transportation and communications, trade and finance. The share of the private sector in transport and communications, according to Third Plan figures, is expected to expand from 50.8 percent to 54.5 percent, growing at an average of 6.8 percent per annum in real terms (Table 4.10). In the case of trade, the share is expected to grow from 89.1 percent to 95 percent with an average real growth of 6.4 percent per annum. The still limited private sector shares in finance, however, suggest that the Government is not expecting a substantial increase in the role of the private sector in this strategic segment during the Third Plan period and points to a major potential bottleneck in improving the efficiency with which the economy will allocate resources. Similar observations can be made with respect to utilities and to social insurance. In fact, for these two sectors, there is no role for the private sector at all. In neither case do the specifics of the Third Five-Year Plan appear consistent with the overall intention of increasing private sector participation in economic activity.

Table 4.11: Gross Private Sector Domestic Product
(factor cost; 1991/92 prices; billions of LE)

Sector	1991/92	1996/97	Percent Change per annum	Percent Share of Sectoral GDP	
				1992	1997
Agriculture	20,410	24,555	3.6	98.7	99.0
Manufacturing and Mining	12,450	20,610	10.6	58.2	68.5
Petroleum	2,210	2,750	4.5	16.6	19.6
Electricity	-	-	-	-	-
Construction	4,059	6,486	9.8	66.8	75.2
Transport and Communication	4,070	5,648	6.8	50.8	54.5
Suez Canal	-	-	-	-	-
Trade	19,360	26,465	6.4	89.1	95.0
Finance	1,249	1,620	5.3	25.7	25.8
Insurance	21	29	5.2	27.6	28.4
Restaurants and Hotels	1,655	3,142	13.7	84.7	93.8
Real Estate	1,225	2,190	10.5	90.1	92.2
Utilities	-	-	-	-	-
Social Insurance	-	-	-	-	-
Government Services	-	-	-	-	-
Personal Services	8,532	11,070	10.6	100.0	100.0
Total Private GDP	75,242	104,150	6.7	60.0	64.8

Source: MOP, Third Five-Year Plan, April 1992, p. 540.

4.66 Encouraging Private Sector Participation. A key question that arises is whether the Third Five-Year Plan's estimates of private sector investment and output growth are realistic. Past performance suggests that the potential for expansion of the private sector is quite significant. Whether the private sector can fulfill (or even surpass) plan expectations will depend, as argued throughout this chapter and in

Chapter II, on how comprehensive, well-articulated and decisive the Government's efforts in implementing the economic reform program turn out to be.

4.67 Private sector investment and output response will no doubt be strengthened by debt relief efforts. Other steps the Government needs to take (some are already being taken) to encourage the participation of the private sector are outlined below.

4.67.1 Public sector investment: Focus investment in social and physical infrastructure complementary to private investment, while withdrawing from commercial and productive sectors.

4.67.2 Tax reform: Simplify the tax structure, increase the transparency and minimize the arbitrariness of tax administration, and reduce the level and dispersion of tax rates.

4.67.3 Trade policy reforms: After having eliminated nearly all of the NTBs, the Government now must concentrate on reducing the level and dispersion of tariff rates on imports as envisioned under the second phase of the reforms (1993-95).

4.67.4 Price liberalization: Phase out price controls on the remaining industrial products; liberalize production, marketing and the prices of crops.

4.67.5 Regulatory reforms: Phase out operational and exit barriers (including simplifying the procedures and improving the administration of health, safety and industrial standards; strengthening arbitration and negotiating procedures; simplifying the procedures for merger approval and enforcement of antitrust provisions);¹⁸ and prepare the draft "Unified Investment and Corporate Law" applicable to all companies. The draft law, which will be submitted to the Parliament by end-1993, will consolidate the existing provisions of Laws 203, 159, 230, 59, and other similar laws.

4.67.6 Labor market reforms: Eliminate the government monopoly on job placement through the Ministry of Labor and allow private firms to hire and provide job placement services directly; recognize the de facto direct hiring of labor by private firms; permit businesses to lay off workers after just compensation and to dismiss workers for violations of disciplinary rules; and remove guarantees of employment for graduates.

¹⁸ For a more detailed presentation see the World Bank, "Arab Republic of Egypt: The Private Sector Regulatory Environment," Report No. 10049-EGT, January 23, 1992, Volume I, Table 1.

- 4.67.7 Banking sector reforms: Promote price and product competition through economic deregulation; eliminate discrimination against private banks; relax entry barriers; sell assets of joint-venture banks and privatize banks on the basis of the timetables contained in the second phase of the reforms; issue banking law and executive regulations consistent with international prudential standards; and strengthen central bank supervision bodies.
- 4.67.8 Securities market reforms: Adopt a comprehensive securities law; create a specialized commercial court; and enact legislation for an investment management industry.
- 4.67.9 Privatization: Progressively broaden the scope of enterprises to be privatized (consistent with the market's absorptive capacity); expand the collective investment vehicles to enable broad public participation; and demonopolize and stimulate the entry of the private sector into activities that have traditionally been in the realm of the state (such as utilities), subject, in the case of quasi-natural monopolies, to proper (and pro-competitive) regulatory controls.

CHAPTER V: AGRICULTURE, LAND RECLAMATION,
IRRIGATION AND DRAINAGE

Summary

Almost all government controls on the production, pricing and marketing of agricultural products were withdrawn during the Second Five-Year Plan (FY88-FY92). Those remaining will be withdrawn by the middle of the Third Five-Year Plan (FY93-FY97). For the most part, farmers are free to make their own production decisions. The objective of the Third Plan is to enable the agricultural sector to meet its crucial production role in the national Structural Reform Program. Plan allocations should give priority to investments that maximize the returns to the most limiting factor in the country - water. However, about 40 percent of all plan allocations are for land reclamation and settlement projects. Although these are projects with high social priority, attention should first be directed to optimizing investments from already reclaimed land through intensification (vertical development) while undertaking additional land reclamation (horizontal expansion) only where it is financially and economically justified.

A. Background and Recent Developments

Role of Agriculture in the Economy

5.1 The agricultural sector was subject to widespread government intervention from the early 1960s until 1986. Areas allocated to major crops were determined by the Government and regulations were rigidly enforced. Compulsory delivery quotas were imposed, at specified price levels fixed to just cover production costs. These policies were designed to transfer agricultural surpluses out of the sector in order to support industrial development and government revenues and to keep prices low to urban consumers. Instead, there have been increasing distortions in production between controlled and noncontrolled products, low production growth rates, a decrease in the export of agricultural products and an increase in food imports.

5.2 By the start of the Second Five-Year Plan there was a broad consensus that the major obstacles to more rapid growth in agricultural output were policy based, and during the plan period almost all the government controls in the sector were removed. Crop area controls and restrictions on crop movement were abolished and compulsory procurement was also abandoned (except for sugarcane and cotton). Almost all crop prices were set free and allowed to find their own level. Input subsidies were greatly reduced and will be eliminated by the middle of

the Third Five-Year Plan. Government controls over the import and distribution of inputs (fertilizers, feeds, pesticides, etc.) have been relaxed and opened up to the private sector. The government monopoly on cotton exports is expected to be relaxed over the next few years. Before the end of the Third Plan, the sector should be totally free of all government controls.

5.3 Despite these policy changes the impact of past policies dominated the sector's performance during the Second Five-Year Plan: agriculture's share in national GDP, employment and exports all declined. The growth rate of agricultural GDP averaged about 2.5 percent per annum through most of the 1980s. The steep fall in cotton production was a major contributor to this performance. On the other hand, citrus exports, particularly by the private sector, have been growing steadily. The share of agriculture in GDP (value added) fell during the Second Five-Year Plan from 20.8 per cent in FY87 to 16.3 percent in FY92; its share in GDP at factor cost fell from 17.9 percent to 14.4 percent over the same period. This fall was faster than planned since the plan target growth rate of 4.1 percent per annum was not achieved, as well as faster growth by other sectors.

5.4 Within this overall sluggish performance, there is growing evidence that agricultural production is beginning to react to the relaxation of controls. The increased output of crops on which restrictions have been removed is becoming apparent: there has been a significant increase in foodgrain production during the last few years (which is in part due to technical improvements), with wheat production going from less than two million tons per annum in the early 1980s to over four million tons in 1990 and with corn and rice also showing an accelerating rate of growth. This has led to a sharp drop in wheat/flour imports since 1988. Even so, over 60 percent of wheat consumption and 25 percent of corn consumption has to be met by imports.¹ Statistics on a crop by crop basis for area, production and yield, and growth rates show these changes in more detail. (See Statistical Annex Tables 5.2 to 5.5 in Volume II.)

5.5 The sector's share of employment fell from 39 percent in FY82 to 33 percent in FY92 (compared with 53 percent in FY60).² It remains, however, the largest sector in terms of employment. Its share of total commodity exports has also fallen dramatically over the years, from about 75 percent of total commodity exports in FY60 to less than 20 percent in recent years. The major decrease has been in raw cotton, which is now converted to yarn before export.

¹ Overall, food items represented 29 percent of total merchandise imports in 1989.

² FY82 and FY92 data from chapter on agriculture in the Third Five-Year Plan, Vol. II, Ministry of Planning, Cairo, April 1992.

Relative Importance of Agriculture in Public Investment

5.6 After separating out the cost of the High Aswan Dam, agriculture's share of public investment declined from 14 percent in 1962-66 to 5 percent in the late 1970s. During the First Five-Year Plan (FY83-FY87), it accounted for 7.9 percent of total plan expenditures, falling to 6.9 percent during the Second Five-Year Plan, or 1.25 percent of GDP. The Third Five-Year Plan proposes a sharp reversal of this pattern, with the agricultural sector expected to account for 15.8 percent of total public investment, or LE 9.6 billion in FY92 prices.³

5.7 This proportionate increase in the share of agriculture is more a reflection of a greater transfer of investments in other sectors from the public to the private sector than of any deliberate emphasis on agriculture. The main change in investment allocations resulting from agricultural sector privatization has been the removal of 16 public sector companies (now incorporated within the Holding Company for Agricultural Development) and 2 others (now incorporated within the Holding Company for Animal Wealth) from public sector financing. Four of these companies have already been divested. Together, these companies accounted for 15 percent of agricultural sector investment in the Second Five-Year Plan. (The six public sector land reclamation companies and the six public sector irrigation companies have also each been grouped into holding companies, but their operations remain financed under the Third Five-Year Plan).

5.8 Recurrent expenditures, which include wages and operation and maintenance, are funded through the Ministry of Finance. They are of particular importance in the agricultural sector; for example, virtually all expenditures for the extension service fall outside the plan. Although these non-plan expenditures are of little importance in the overall context of the government budget (e.g., two percent of central government expenditures in the FY92 budget), they are of major importance in enabling the sector to operate efficiently. Agricultural sector non-plan expenditures in the Second Five-Year Plan period totalled LE 2.5 billion, against LE 4.6 billion plan expenditures (i.e., 35 percent of total expenditures - see Volume II, Annex Table 5.6 for details). In certain areas, non-plan expenditures exceeded plan expenditures - for example, in the Mechanical and Electrical Department of the Ministry of Public Works and Water Resources (MPWWR), a department whose chief function is the maintenance of the irrigation and drainage pumping stations, non-plan expenditures for operation and maintenance were LE 161 million against LE 132 million for plan expenditures.

³ Third Five-Year Plan, MOP, Cairo, April 1992.

Main Sectoral Issues

5.9 In the final analysis, every activity and investment in the agricultural sector has one main objective: accelerating the rate of growth of agricultural output. This is seen as a means of raising the incomes of those engaged in agriculture and of increasing the supply of agricultural products either for food, for industrial raw materials or for export. The objective of the Third Five-Year Plan is to raise the growth rate of aggregate production to 3.2 percent and of value added to 3.5 percent per annum. The main sectoral issues all revolve around what mix of policies and investments will bring about this rate of growth.

5.10 Even without any other changes, the policy reforms already undertaken should result in a marked upward trend in the rate of growth of agricultural production during the Third Five-Year Plan. However, reforms alone cannot meet the plan target, nor are they sustainable without continued investment in the maintenance and improvement of the irrigation and drainage system. The issue then for the plan is how to reinforce the impact of these policy reforms through institutional changes and through the allocation of investments.

5.11 Policy Reform and Institutional Change. While the Second Five-Year Plan period saw major policy reforms introduced, some of the most difficult ones relating to cotton and sugarcane pricing have to be phased in gradually. The Government is committed to a program that makes the relevant border prices the main determinant for decision-making in the cotton economy, with domestic prices rising to a level roughly equal to international prices over the next three to five years and with the subsidy on cotton pesticides being eliminated over a similar period. This will involve difficult adjustments in the spinning industry, as will changes in the price of sugarcane to the refining industry, but it is critical to achieving the planned growth in the sector that the Government keeps to this timetable.

5.12 Recent Reforms. The key reform measures implemented so far are: removal of crop area allotments and delivery quotas; liberalization of agricultural producer prices (with the exception of cotton and the price support for sugarcane); removal of feed subsidies and significant reductions in fertilizer and pesticide subsidies; higher lending rates in agriculture, which are now more in line with the rest of the economy; sale of reclaimed state-owned land to the private sector; the offering for sale 83 projects owned by state-owned agricultural production companies and the actual sale of 18 projects; a larger role for the private sector in the distribution of inputs, mainly fertilizers, which now accounts for over 90 percent of fertilizer distribution in Egypt; the raising of land rents three-fold during a transitional five-year period, after which they would be liberalized and become market determined; some cost sharing of irrigation and drainage O&M costs in the New Lands and of capital costs of newly installed drainage facilities in the Old Lands; liberalization of trade and marketing of most agricultural commodities; and removal of implicit

exchange rate subsidies applicable to the imports of inputs, mainly fertilizers and pesticides.

5.13 Under SAL-I, the Government successfully implemented the following: (i.) cotton procurement prices for the main eight cotton varieties were raised from 56 percent to 60 percent of international prices for the 1991/92 crop year and to 66 percent of international prices for the 1992/93 crop year; (ii.) fertilizer subsidy reductions exceeded the agreed target and fell from LE 105.3 million in FY91 to LE 32.0 million in FY92; however, fertilizer subsidies were not eliminated in FY93 as budgetary allocations for fertilizer subsidies for that year were LE 41.0 million; (iii.) actual pesticide budget subsidies fell from LE 116.7 million in FY91 to LE 107.0 million in FY92 (an 8.3 percent decrease) and were budgeted at LE 61.9 million in FY93 (a 42 percent decrease).

5.14 The Government has already eliminated all budget subsidies for animal feed and significantly reduced fertilizer and pesticide subsidies. Consistent with its decision to fully liberalize cotton prices for the 1993/94 season, the Government will eliminate by July 1993 all remaining budget subsidies for fertilizers and pesticides in the FY94 budget. The Government is eliminating all feed budget subsidies.

5.15 Institutional Changes. Institutional changes mainly involve the Ministry of Agriculture and Land Reclamation (MALR), which was the Ministry previously responsible for implementing controls. Now that this function has been abolished, MALR is in the process of redefining its role. What is needed is an efficient agricultural administration that can coordinate all the agencies dealing with agriculture. There appears to be broad agreement that MALR should be principally involved in production-promoting activities such as research and extension and should perform only a minimum regulatory function. The provision of veterinary services is also to be left to MALR. This new focus will involve a substantial change in the structure of the Ministry, the details of which are still to be worked out.

5.16 Some changes in the role of the Ministry have already taken place and are reflected in allocations for the Third Five-Year Plan. The very considerable production activities that MALR used to carry out (for instance, farming on reclaimed lands, cattle fattening, poultry and fish production) have either been divested or transferred to holding companies. Most of these production activities financed under the Second Five-Year Plan will not be financed under the Third Plan. MALR will still be left with a few production activities (such as breeder seed of improved crop varieties, day-old chicks for sale to the private sector and fish fingerlings), though most could be privatized.

5.17 Investment in Irrigation. The major limiting factor to agricultural growth is water, and the most important investments in the Third Five-Year Plan should be those that raise the rate of return on water. Water needs arise both in the "old lands" (those cultivated

prior to 1950) and in the "old-new" lands (those reclaimed between 1950 and 1975). The highest priority must be given to investments that improve the maintenance of the irrigation system in the old lands so as to raise the efficiency of water use. Much of the irrigation and drainage system infrastructure and equipment is in poor condition, partly because of age and partly because inadequate funds have been available for maintenance in the past. Aquatic weed infestation is becoming a major problem for the water distribution and drainage systems. In at least one third of the old lands, productivity increases are still constrained by the lack of drainage, and in some old drainage areas the system needs to be replaced.⁴ All of these ought to be areas of top priority for plan investment allocations. The economic rate of return to such investments is high (i.e., 24 percent and upwards).⁵ Plan allocations, however, do not appear to reflect this priority.⁶

5.18 System Improvement. The rate of return to water could also be accelerated by improving the existing water delivery system in the old lands. Although it has served the country well in the past and its overall efficiency level is high, it is an inflexible system because of the limited number of control structures on the main and secondary canals. This means that more water than is required by crops has to be diverted to maintain canal levels. Even so, there is excess in some places some of the time and shortages in other places much of the time. Surpluses are discharged into the drainage system. This problem has been compounded by the rapid mechanization of pumping from the on-farm water delivery channels by farmers themselves over the past 10 years. A pilot irrigation improvement program was begun during the First Five-Year Plan period. It was originally intended to cover 400,000 feddans by the middle of the Third Five-Year Plan but it has had to be drastically scaled back because of the lack of funds and implementation capacity.

5.19 On the old-new lands, better maintenance and the replacement of the irrigation system are also needed. These areas cover just over 900,000 feddans. Much of the irrigation infrastructure has deteriorated and needs rehabilitation; some of the original designs need altering for better and more efficient use of water resources; and many areas need drainage as a result of the rise in watertables. The level of agricultural production is well below the potential. The rate of return on rehabilitation and intensification is much higher here than on the reclamation of new lands because most of the infrastructure already exists to a greater or lesser extent. However, this does not seem to be a priority for plan investment even though intensification could contribute significantly to accelerating the rate of agricultural growth.

⁴ Ibid.

⁵ Ibid.

⁶ As indicated in the Third Five-Year Plan, MOP, Cairo, April 1992.

5.20 Horizontal Expansion. The investment balance between improving the rate of return on water on lands that are either already cultivated or recently settled, and using surplus water to irrigate new areas, is the major issue in any review of plan allocations. On the one hand, the accomplishments of the horizontal expansion program in the Second Five-Year Plan appear impressive. An estimated 236,000 feddans were classified as reclaimed by the public sector in the first 4 years of the plan, with about another 70,000 feddans estimated to have been reclaimed in the fifth year. In addition, 33,700 graduates were settled on 175,000 feddans of reclaimed land and provided with on-farm infrastructure, housing, and basic social amenities. On the other hand, the contribution these new areas make to production is small, at least in the short term.

5.21 Experience gained over the past 30 years has shown that land reclamation is both an expensive and slow means of raising agricultural production. The area reclaimed through horizontal expansion since 1950 now totals just over 1.9 million feddans, representing over 20 percent of the cultivable area. Yet, MOP estimates show that this 20 percent of area produces only about 7 percent of the total gross production value.⁷ This low productivity is borne out by a recent Bank study on the economics of horizontal expansion in Egypt.⁸ These mostly show a low to marginal economic rate of return (about 12 percent and downwards) on investments in land reclamation.

5.22 This low productivity is the result of a combination of factors: the long time lag between the start of reclamation and the start of production due to inadequate coordination between the various agencies involved in the complex process; the low intensity of land use in the new lands due, at least in part, to the mechanical transfer of unsuitable old land technologies; and the low yields per feddan on the new lands as compared with those on the old lands. These are all solvable problems. There is no doubt that, in the long term, the productivity of most of the areas scheduled for reclamation will increase significantly. During a time of such financial stringency, however, it seems less urgent to be investing heavily in an activity with such a protracted payoff period.

5.23 Noneconomic Benefits of Land Reclamation. Horizontal expansion cannot be judged by purely economic criteria. There are a number of noneconomic, but nationally important, reasons why horizontal expansion has such a high national profile:

- 1) Employment creation: national policy is to allocate about half of all newly reclaimed land to unemployed graduates, even though the additional cost involved over and

⁷ Table 105 in "Review of Second Five-Year Plan", Ministry of Planning, Cairo, April 1991.

⁸ For a summary of various views see "Land Reclamation Sub-Sector Review," World Bank Report No. 8047-EGT, February 1, 1990.

above the basic provision of infrastructure is relatively high (i.e., about LE 30,000 per graduate⁹);

2) Social: the development of the hinterland provides for a more balanced regional development, a useful source of employment, and a locally available food supply;

3) Trade: innovative crop production methods are being adopted on the new lands, particularly on the sandy soils alongside the Delta, to cultivate high-value, out-of-season crops that have a high export potential given a liberalized and efficient trade regime; and,

4) Political: land settlement along the Suez Canal and the Sinai Coast is seen as strategically essential to national security.

Thus, the pursuit of sustainable development that maintains a balance between growing population and limited area, as well as the above social and largely noneconomic considerations, necessitates some expansion of reclaimed land. The basic issue, as far as Third Five-Year Plan investment allocations go, is the trade-off between the economic objective of rapidly increasing agricultural production and these other nonquantifiable objectives.

5.24 Need for Supporting Services. Rather than continue to spread reclamation to new areas, now would seem to be the time to concentrate on making those areas already reclaimed more productive. This does not necessarily require large investments. What is needed is better settler services. Despite the large sums spent on internal reclamation for graduate settlement (in order to provide settlers with on-farm irrigation systems and similar infrastructure), settlers are not able to make the best use of this investment. They lack many of the support services needed for a functioning agricultural system. In particular, they lack the financial resources to buy inputs like fertilizers or even hire labor, let alone buy machinery. There is no adequate credit system so they can borrow these resources. The extension system in the new lands is, at best, rudimentary and unable to provide untrained graduates with advice on how best to use the modern irrigation systems that have been installed. Farming techniques learned in the old lands are frequently inapplicable in the new lands; there is no one to teach the settlers what to do and little research is under way to provide this basic information. When farmers have produced crops there is no adequate storage, marketing or transportation system. The Ministry established a Supreme Board for Research, Development and Extension in the Newly Reclaimed Areas in late 1990 to address some of these problems but there is no evidence in the Third Five-Year Plan that this is seen as a priority.

⁹ Based on an incremental cost of LE 6000 per feddan and 5 feddans per graduate.

5.25 Thus, the main issue in the agricultural sector is, ultimately, how to balance vertical and horizontal expansion. In these times of declining public sector investment levels, the nonquantifiable benefits of horizontal expansion are perhaps being given too great a weight, and the benefits of vertical expansion, too little.

B. Sectoral Objectives and Strategy: The Third Five-Year Plan

5.26 The sectoral objectives put forward in the Third Five-Year Plan recognize that the role of the public sector is to continue the liberalization of production, pricing and marketing and the reduction of subsidies. Programs that encourage private sector investment in productivity-increasing technology (such as mechanization, the use of high yielding crop varieties and integrated pest management) are to be put in place. Other objectives of the Third Plan are to increase the efficiency of resource use and continue the land reclamation program at about the same rate as under the Second Five-Year Plan. The use of water resources is to be rationalized, agricultural and drainage projects are to be more efficiently maintained and administrative restrictions are to be removed. Agricultural extension and improved veterinary services are to be provided.

5.27 Upon examination of the actual allocations in the Third Five-Year Plan, however, two things become clear. First, many sectoral objectives are policy-related or institutional in nature and, therefore, are not directly related to the allocation of plan resources. Second, allocations are not primarily directed towards investments that have the highest rates of return or that will contribute most towards accelerating the growth rate of agricultural production. Nor is cost the main consideration in all cases. A major implication of this investment mix is that the Government assigns a very high priority to non-economic considerations.

5.28 Vertical versus Horizontal Expansion. During the past 15 years, public expenditure in agriculture has been distributed approximately 60 percent to vertical expansion and 40 percent to horizontal expansion.¹⁰ Final allocations of the Third Five-Year Plan by MOP reflect this traditional distribution, with horizontal expansion receiving approximately 40 percent share of total sector allocations¹¹ (Table 5.1).

5.29 In aggregate terms, the Third Five-Year Plan sets a production growth target for the sector of 3.2 percent per year and for

¹⁰ See World Bank Report No. 8047-EGT, "Land Reclamation Sub-Sector Review," Table 2.4, Washington, February 1, 1990.

¹¹ The Third Five-Year Plan's original allocations for horizontal expansion totaled LE 5,267 million, of which LE 2,820 million was allocated to MALR, LE 547 million to MPWR and LE 1,900 for North Sinai agricultural development. Allocations for horizontal expansion in the final version of the Third Plan total LE 4,159 million (MALR, LE 2,577 million; MPWR, LE 382 million; and North Sinai, LE 1,200 million).

value added of 3.5 percent per year. This compares with an average 2.5 percent per year during the 1980s. However, the impact of the recent policy reforms are expected to become more evident in the next two to three years and should induce substantial production increases in major crops, particularly cotton.

5.30 This expectation of an increase in cotton production is reflected in the export targets of the Third Five-Year Plan which forecast an average annual increase in agricultural exports of 9.5 percent, of which almost half is attributable to cotton. Agricultural exports are assumed to grow faster than the average for commodity exports as a whole. It should be noted that agriculture's share of commodity exports fell significantly during the Second Plan to 16 percent; the Third Plan target would raise this share to more than 20 percent.

C. Major Projects under Implementation

Vertical Expansion Projects

5.31 Ministry of Agriculture and Land Reclamation (MALR). In the MALR's proposals for the Third Five-Year Plan, there are 105 vertical expansion projects/programs listed, of which 90 are ongoing and only 15 are new projects/programs. Details of the public sector investment program for the agricultural sector are given in Table 5.1.

5.31.1 National Agricultural Research Project: the largest allocation in the Ministry of Agriculture plan is for support to the Agricultural Research Center and its affiliated institutes, LE 716.3 million (US\$216 million). This consists of 38 separate projects. The Center has received substantial support from USAID's National Agricultural Research Project, which started in 1985 and will be completed, except for the training component, by end-FY94. Out of the original allocation by USAID of US\$300 million, about US\$111 million (LE 368 million) will spill over into the Third Five-Year Plan. The allocation proposed by MOP would allow the current rate of annual expenditures to be maintained after the expiration of the USAID project.

5.31.2 Soil Amelioration Program: an ongoing program of land improvement through deep plowing and the application of gypsum to saline-affected areas under the Executive Agency for the Improvement of Agricultural Lands (one of the service authorities of MALR). It is expected to treat 500,000 feddans annually during the Third Five-Year Plan at a total cost of LE 247.5 million (US\$75 million) with another LE 86 million (US\$26 million) on related improvement activities.

**Table 5.1: Public Sector Investments in the Agricultural Sector
During the Second and Third Five-Year Plans
(LE millions)**

	Second Plan ¹ FY88 to FY92 (actual)	Third Plan ² FY93 to FY97		
		MOP (proposed)	World Bank ³	MOP (final)
Ministry of Agriculture⁴				
Administration Sector	244	356	421	421
Service Authorities	295	890	1,596	1,261
Economic Authorities	166	620	530	530
Economic Units	678	-	-	-
Subtotal	1,383	1,866	2,547	2,211
Ministry of Land Reclamation⁴				
Administration Sector		69	51	51
Economic Authorities	1,766	2,751	2,201	2,526
Subtotal	1,766	2,820	2,252	2,577
MALR Total	3,149	4,686	4,799	4,788
Ministry of Public Works and Water Resources⁴				
Administration Sector	1,093	1,754	2,459	2,109
Service Authorities	738	1,249	1,501	1,502
MPWR Total	1,831	3,003	3,960	3,611
North Sinai Development	-	1,900	800	1,200
Sector Total	4,980	9,589	9,759	9,599

Sources: MALR and MPWR Third Five-Year Plan proposals and MOP.

¹ In current prices.

² In constant 1991/92 prices. Ministry of Planning figures under "proposed" column are based on table of "Aggregate Investment Distributed by Ministries" for the 1992-96 plan period provided to the Bank in Cairo on February 25, 1992. The final allocations are based on the figures in the final Third Five-Year Plan document (April 1992).

³ World Bank recommendations made to the Government in March 1992.

⁴ See Annex Table 5.1 for list of the authorities, services, etc., within MALR and MPWR.

5.31.3

Agricultural Storage Project: a World Bank-financed project, which became effective in early 1991. The Third Five-Year Plan allocates LE 348 million for storage projects and silos. The World Bank project will finance strengthening and expanding agricultural storage infrastructure and improving storage handling methods in order to reduce physical losses, minimize deterioration during storage and improve efficiency in transportation of fertilizers and animal feeds. Under the project about 0.9 million tons of warehouse capacity will be constructed on over 200 sites owned by the Principal Bank for Development

and Agricultural Credit (PBDAC), and some 200 existing warehouses will be rehabilitated. A 60,000 ton bulk handling and storage facility will be constructed at Port Said. The construction of all these facilities is unlikely to be completed much before the end of the Third Plan period. The estimated economic rate of return is 29 percent.¹² Other agricultural storage projects of PBDAC total LE 98 million.

5.31.4 Agricultural Production and Credit Project: funded by USAID and more of a program than a project, it started in 1986 with the objective of providing farmers with new technology, improved financial services and better access to inputs so they could take advantage of the higher returns to investment in a deregulated agricultural sector; it also supports policy reforms in the sector and is helping to expand the resources of PBDAC. Its total cost was originally estimated at US\$234 million equivalent. It is successfully meeting the reform objectives and increasing PBDAC resources, and is also developing a model for extension service reform that could be replicated elsewhere. The project will end in 1994. The Third Five-Year Plan allocates LE 75.3 million for this project.

5.31.5 Minya and Fayoum Agricultural Development Projects: two IFAD-financed governorate level projects, one begun in 1983 and the other in 1985, with a combined total cost of US\$85 million equivalent. The estimated rates of return were 31 and 28 percent, respectively.¹³ They had basically similar objectives: supporting the Government's policy of decentralizing the responsibility for agricultural development to the governorate level; reorganizing and merging the extension and research services; introducing a more structured system of extension training and farm visits; and providing additional credit for mechanization and some specific assistance for small farmers and some minor livestock improvement components. Both projects have largely achieved their development objectives, though with considerable delay. They are expected to close during the first two years of the Third Five-Year Plan.

5.31.6 Second Agricultural Development Project: a World Bank financed project that began in 1988, with a revised total project cost of US\$267 million equivalent. The project is scheduled to close in early 1994. The estimated economic

¹² See World Bank Staff Appraisal Report No. 7590, Agricultural Storage, April 23, 1989.

¹³ See World Bank Staff Appraisal Report No. 4132, Minya Agricultural Development Project, December 23, 1982, and World Bank Staff Appraisal Report No. 4532, Fayoum Agricultural Development, November 11, 1984.

rate of return is 30 percent.¹⁴ The project covers the seven main rice-growing governorates. While it had some of the same objectives as the two IFAD projects in Minya and Fayoum as regards research and extension, its principal objective was to introduce improved technological packages through support to agricultural mechanization by providing foreign exchange to private dealers and liberalizing the trade regime for farm machinery imports. The extension/research component has not been successful; nor has the project been successful in obtaining the relaxation of all import restrictions, despite the support it should have received from the first phase of the Government's reform program. Major restrictions still exist on the import of machinery also produced by the Military Production Companies: tractors of 20-85 hp, diesel engines of less than 125 hp and all agricultural mechanical equipment. These restrictions, however, are expected to be removed during the second phase of the reform program.

5.32 Ministry of Public Works and Water Resources (MPWWR). The proposals made by MPWWR for the Third Five-Year Plan list 60 projects/programs for vertical expansion, of which 51 are ongoing extensions of rehabilitation projects/programs and only 9 are new. The five ongoing projects listed below account for about half of the actual plan allocation.

5.32.1 Isna Barrage Project: designed to replace the barrage, which reached the end of its economic life. The opportunity was also taken to add a hydropower plant and an improved lock for shipping. Work began in 1988 and is expected to be completed in 1995. Expenditure during the Second Five-Year Plan was LE 241 million. LE 246.8 million (US\$74 million) is allocated for the Third Five-Year Plan period.¹⁵ The project is being implemented with assistance from the Italian Government.

5.32.2 Irrigation Management Systems Project: a USAID-financed project, originally started in 1981, later extended in 1984 and 1987, with a total project cost of US\$425 million equivalent. The project is expected to close at the end of FY95. This is a complex umbrella project with 10 components whose purpose is to strengthen the capacity of MPWWR to plan, design, operate and maintain the water distribution system. Of particular importance to future investment activities in the sector are: (i.) a pilot Irrigation

¹⁴ For details, see World Bank Staff Appraisal Report No. 4060, Second Agricultural Development Project, May 7, 1985.

¹⁵ From data provided by MPWWR.

Improvement Project in selected canal commands that is planning, designing and constructing an improved and more efficient water distribution system while at the same time developing the institutional capability in MPWWR to sustain the program after expatriate assistance is phased out; (ii.) a Structural Replacement component that began the process of improving or replacing the over 20,000 small to medium irrigation structures that had deteriorated or were no longer functionally appropriate; this program will need to be continued throughout the third and subsequent plans; and (iii.) a pilot Preventive Maintenance component in six directorates that provides equipment and staff training to upgrade MPWWR capability to assure proper and reliable maintenance of the system. This component parallels the World Bank Channel Maintenance Project (see below).

- 5.32.3 Channel Maintenance Project: a World Bank-financed project begun in 1988 and expected to close at the end of FY94 that financed the first 6-year tranche of a 12-year national program. The total project cost is US\$127 million equivalent. No economic rate of return was calculated because the project was justified on the basis of cost savings in canal maintenance.¹⁶ The project objective was to control the major and rapidly increasing problem of aquatic weed growth in the irrigation and drainage system through the introduction of modern practices, replacing the traditional system of excavation by a balanced cycle of weed mowing, herbicide treatment and desilting. This was to be done principally by improving the capabilities of the Public Excavation Companies (PECs), which carry out most of the channel maintenance work on contract to MPWWR, by the provision of modern equipment and herbicides. The project was to institutionalize maintenance procedures so that future maintenance could be carried out on a regular schedule. The project has suffered both from the reluctance of the PECs, under threat of privatization and no longer controlled by MPWWR, to invest heavily in new equipment, as well as by the preference of MPWWR to carry out such activities by force account; more recently, the ban on the use of herbicides has also had a negative impact. New procedures are in the process of being worked out, but a solution is urgently needed since aquatic weed growth has become a major obstacle to the proper operation of the irrigation system. The Third Plan allocates LE 175 million (US\$53 million) for this work, of which US\$39 million is from foreign loans.

- 5.32.4 Irrigation Pumping Station Rehabilitation: a large MPWWR program that began its first phase in the First Five-Year

¹⁶ See World Bank Staff Appraisal Report No. 6044, Channel Maintenance Project, May 29, 1986.

Plan period and whose second phase, starting towards the end of the Second Five-Year Plan period, will extend through the Third and into the Fourth Five-Year Plan periods. Total cost of the two phases is estimated at LE 557 million (US\$168 million). Principal donors of the first phase were USAID and the World Bank. A second World Bank project to finance part of the second phase (the rehabilitation of about 50 pumping stations plus maintenance equipment and facilities) started in late 1991 with financing of US\$49 million and expected closing date of end-FY97. Its expected rate of return is 24 percent.¹⁷ This will cover only about half the needs for pump station rehabilitation during the Third Five-Year Plan. The Third Plan allocates LE 264.2 million (US\$80 million) for the second phase, with a foreign contribution of US\$36 million. Other projects are under preparation for this purpose by the Islamic Bank, KfW, the Japanese Government and EEC.

- 5.32.5 Drainage V Project and National Drainage Program: The World Bank and a number of other multilateral (EEC, AfDB, AfDF and the Islamic Bank) and bilateral donors (the governments of the Federal Republic of Germany and the Netherlands and USAID and CIDA) have been financing drainage projects in the old lands since 1970, with one project overlapping the next in a continuous series. The World Bank's Drainage V Project, which will close early in FY94, will overlap with a new National Drainage Program that will begin during the Third Five-Year Plan and is expected to close by end-1999. Its total cost is US\$290 million equivalent, and its economic rate of return is 24 percent.¹⁸ It will finance a six-year time slice of the National Drainage Program, covering about 720,000 feddans and encompassing the installation and replacement of subsurface drains and the remodelling of existing open drains throughout the Nile Valley and the Delta. Total allocations for drainage in the Third Plan period are LE 1,250 million (US\$377 million).

Horizontal Expansion Projects

- 5.33 Ministry of Agriculture and Land Reclamation. The MALR proposals for horizontal expansion include 35 projects for the provision of basic infrastructure (i.e., roads, power supplies, secondary canals and pumping stations). Of these, 18 projects, with a total area of

¹⁷ See World Bank Staff Appraisal Report No. 8235, Second Pump Station Rehabilitation Project, April 25, 1990.

¹⁸ See World Bank Staff Appraisal Report No. 9792, National Drainage Project, August 14, 1991.

584,400 feddans, are ongoing;¹⁹ 17 other projects, which are essentially new although they are treated for plan purposes as expansions of existing projects, cover 196,000 additional feddans. 274,000 feddans in North Sinai are also proposed to be reclaimed. Roughly 150,000 feddans, spread over 22 of the 35 projects, will be further developed through the provision of on-farm water distribution systems, land reclamation, etc., including housing, to make them ready for the settlement of 30,000 graduates. The remainder of the area will be leased or sold to the private sector. Two of the 18 ongoing projects account for over half the Third Plan provision for ongoing projects for land reclamation:

5.33.1 Wadi El-Nakra Project: a 65,000 feddan area in Upper Egypt near Kom Ombo with a pumping lift of up to 90 meters. Total project cost for infrastructure is LE 259 million (US\$78 million), with a Third Plan allocation of LE 200 million (US\$61 million) for completion. No detailed economic evaluation has been carried out, but in the Land Master Plan the project was rated 81 out of the 90 areas studied, with costs exceeding benefits. Commitment has been made with a supplier (French) for the procurement of 11 lifting stations.

5.33.2 El-Bustan Extension Project: a 75,000 feddan project in the west Delta halfway between Alexandria and Cairo on the desert road with a pumping lift up to 65 meters. Total project cost is LE 312 million (US\$94 million), with a Third Plan allocation of LE 124.5 million (US\$38 million) for completion. As with almost all the land reclamation projects, no economic evaluation has been carried out. In the Land Master Plan, the project was ranked 71 out of 90, with costs exceeding benefits.

5.34 Ministry of Public Works and Water Resources. The role of MPWWR in horizontal expansion is to bring irrigation water to the new project areas by constructing the main infrastructure of canals, bridges and pumping stations with associated power supplies. There are seven MPWWR horizontal expansion projects. Their total cost for completion within the Third Five-Year Plan period is LE 382.1 million. The Ismailiya Canal extension and enlargement accounts for LE 223 million of this.

¹⁹ The Third Plan's agricultural chapter includes a table (table 2, page 19) that details infrastructure completion projects financed by the public sector. In addition to the 17 projects covering 584,400 feddans referred to above is another project, Upper Egypt Agricultural Company, LE 20 million. MOP's final project listing includes this project (project no. 02-5001-202400), Completion of Infrastructure Operations, 52,000 feddans, Upper Egypt Company.

D. New Projects during the Third Five-Year Plan

Vertical Expansion Projects

5.35 Ministry of Agriculture and Land Reclamation. MALR has no new vertical expansion projects listed in its plan proposals. There are, however, at least four major projects at a fairly advanced stage of preparation for which foreign financing is available and which could begin implementation during the second or third year of the plan period. These are described below. In addition, a recent UN/Government of Egypt Sector Strategy Mission has proposed a number of new studies and projects that are likely to be included in the plan at a later date.

5.35.1 West Nubariya Agricultural Intensification Project: would rehabilitate 173,000 feddans of land that were reclaimed in the 1970s but whose infrastructure has deteriorated; much of the area is now also in need of better drainage. The area is located in the west Delta on both sides of the Alexandria-Cairo road. Over half of it has been cultivated in the past by parastatal companies that have been, or are being, divested, and the area is being resettled or sold to private developers. The project would thus support the Government's privatization of public sector companies and, by providing better support services, would help to bring about a rapid increase in agricultural production. Total project costs are estimated at about LE 370 million (US\$112 million) and the economic rate of return, at 21 percent.²⁰

5.35.2 New Lands Agricultural Services Project: aims to provide about 35,500 settlers on 188,000 feddans of newly reclaimed areas with the facilities they need, over and above the infrastructure and on-farm investments already made, to achieve reasonable levels of productivity. Crop production and farm income are constrained by inefficient on-farm water use, by lack of knowledge regarding optimum farming practices in the desert, by the limited availability of capital resources and by the shortage of inputs and of most other services, including credit supply. IFAD, which prepared the project, may be willing to finance it. Total base costs are estimated at about LE 126 million (US\$38 million) with an estimated rate of return of 25 percent.²¹

5.35.3 Matrouh Resource Management Project: a World Bank project financed by IDA credit, it would promote improved

²⁰ See FAO Cooperative Program Project Preparation Report No. 7/91 CP-EGY 48, West Nubariya Agricultural Intensification Project, January 16, 1991. MOP's final project listing in the Third Plan includes LE 159 million to complete reclamation and infrastructure construction on 155,000 feddans in West Nubariya and the Northwest Coast (project no. 02-5001-202500).

²¹ See IFAD Appraisal Report No. 0290-EGT, New Lands Agricultural Services Project, July 1991.

sustainable agriculture and poverty reduction under the rainfed conditions of the northwest coast through better water harvesting techniques, better rangeland management, improvements in animal health and nutrition and the establishment of an institutional framework for agricultural research, extension and credit. Project cost, on a preliminary estimate, is LE 115 million (US\$35 million). The project is likely to be more justified on the grounds of its social and environmental impact than on the grounds of its production impact.

5.35.4 Agricultural Modernization Project: under consideration for World Bank financing at an estimated total cost in excess of LE 1.0 billion (over US\$300 million). Most of this represents investment by the private sector and, thus, would not need to be included in the plan. The project would continue the drive to mechanize agriculture begun under the World Bank's Second Agricultural Development Project, would promote new technology, would strengthen credit services to farmers and rural businesses, especially in the new lands, and would provide institutional support to the extension service. Rates of return for various investments in farm machinery and agro-processing equipment range from 14 to 42 percent.²²

5.36 Ministry of Public Works and Water Resources. There is one major new project in the MPWWR proposals - the development of North Sinai. In addition, there is also another project that is likely to be ready for implementation before the end of the Third Five-Year Plan period, the Naga Hammadi Barrage replacement. A feasibility study is under way by KfW. This project will be given a high priority in the Ministry's program, upon completion of the Isna Barrage replacement.

5.36.1 North Sinai Development Project: involves the development and settlement of 400,000 feddans east of the Suez Canal along the North Sinai coast. Irrigation water will be provided by the extension of the El-Salam Canal, itself still under construction west of the Suez Canal, beneath the Suez Canal eastward for 79 km, and then through a 45 km pipeline to reach the highlands south of El-Arish, with pumping lifts up to 150 meters. Total project costs in 1991 prices are estimated at LE 4,450 million (US\$1,370 million) although these are not based on full detailed designs.²³ The cost of the irrigation and drainage infrastructure alone is estimated at LE 1,862 million, with LE 1,200 million (US\$362 million) being funded in the Third Five-Year Plan.

²² See FAO Cooperative Program Project Preparation Report No. 149/91-EGY 50 PREP, Agricultural Modernization Project, December 19, 1991.

²³ From data supplied the World Bank by the Chairman of the North Sinai Development Authority.

A 1989 preparation report by the FAO Cooperative Program estimated the rate of return on the first two phases covering 250,000 feddans at 10.9 percent. A 1992 Environmental Impact Assessment indicates that the benefits assumed in the FAO/CP report may be too high and that the rate of return may be less than this. A US\$220 million soft loan from the Kuwait Fund will cover the foreign exchange costs of the syphon and the first phase irrigation infrastructure. A US\$25 million soft loan from the Saudi Fund will cover about one third of the foreign exchange costs of the power infrastructure.

Horizontal Expansion Projects

5.37 Of the 17 new horizontal expansion projects in the MALR proposals, two account for almost 40 percent of the plan expenditure in this category. They would also involve MPWWR.

5.37.1 East of Bitter Lakes Project: 40,000 feddans east of the Suez Canal across from Ismailiya to be irrigated via a culvert under the Suez Canal from the tails of the Ismailiya Canal. The total cost is estimated at LE 85 million for the irrigation works and LE 134.6 million for the infrastructure (US\$72 million). This would be partly met by a grant from the Abu Dhabi Fund. There is no estimate of the economic rate of return.

5.37.2 El-Daba and El-Alamein Project: a narrow strip of 148,000 feddans along the northwest coastal plain to be provided with water for winter cropping by an extension of the El-Hamam canal, itself an extension of the El-Nasr canal. There is no feasibility study of the area nor any assessment of economic benefits. Construction of the canal extension is under way. The infrastructure costs are estimated at LE 288 million (US\$87 million), of which LE 159 million will be provided during the Third Plan. The Abu Dhabi Fund is providing US\$55 million equivalent for this project.

Sources of Financing

5.38 On the basis of the proposals prepared by MALR and MPWWR, along with the MOP allocations between Ministries, the Bank's best estimates of the sources of financing for the Third Five-Year Plan expenditures are shown in Table 5.2. These figures indicate that one third of the sector's financing will come through foreign grants or loans of one kind and another; 58.6 percent will come from the National Investment Bank. Only 5.5 percent of the National Investment Bank's financing will be in foreign currency.

**Table 5.2: Sources of Third Five-Year Plan Financing:
Agricultural Sector
(LE millions)**

	Financing				Final Plan Total
	NIB		Grants/ Loans	Other	
	Local	Foreign			
Ministry of Agriculture	975	70	687	480	2,211
Ministry of Land Reclamation	1,821	165	390	200	2,577
Ministry of Public Works and Water Resources	1,844	65	1,572	130	3,610
North Sinai Development	679	10	511	0	1,200
Total	5,319	310	3,160	810	9,599

Source: MOP and staff estimates.

5.39 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Agricultural sector projects have been reduced by LE 0.1 billion in FY93, by LE 0.2 billion in FY94 and by LE 0.2 billion in FY95. At the ministry level, public investment programs have been reduced as follows. Ministry of Agriculture: FY93, from LE 372.2 million to LE 350.3 million; FY94, from LE 374.9 million to LE 364.9 million; and FY95, from LE 419.0 million to LE 409.0 million. Ministry of Land Reclamation: FY93, from LE 414.9 million to LE 373.9 million; FY95, from LE 444.7 million to LE 380.8 million; and FY95, from 491.0 million to 405.0 million. Ministry of Public Works and Water Resources: FY93, from LE 610.7 million to LE 587.7 million; FY94, from LE 681.8 million to LE 590.0 million; and FY95, from LE 744.0 million to LE 654.0 million.

5.40 Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. These reductions (for FY94 targeted investments) include agricultural storage development (by LE 10 million); various infrastructure projects on reclaimed land (by LE 41.6 million) and on reclaimed land for graduates (by LE 22.4 million); Esna Barrage power stations (by LE 10.0 million); Mechanical and Electrical Department station rehabilitation (by LE 5.0 million) and electrical grid modernization (by LE 6.1 million); various drainage projects (by LE 36.4 million); coastal protection (LE 4.2 million); and North Sinai development (by LE 30 million).

Implementation and Management of Projects

5.41 Until recently almost all project administration and implementation has been carried out by public sector agencies, either ministries or departments of ministries, or by public sector companies of various kinds. Thus, there were few effective incentives or rewards for good performance; nor were there penalties for bad performance.

This is a problem common to all the agencies in the sector. There are, however, some considerable differences between ministries (see below).

5.42 Project Planning in MALR. Within MALR, there are differences between that part of the Ministry dealing with agriculture and the part that deals with land reclamation. These sections have different origins and, apart from coming under a single Minister, have little in common. There is considerable scope for strengthening the capacity of the Ministry to plan, administer and implement development projects. Its Planning Department is mainly concerned with the overall ministry plan rather than with individual projects. Its individual departments have their own individual development budgets, most of them concerned with funding the construction of buildings or developing farms in order to carry out their own separate programs, such as research, extension, animal health care and fish breeding. For some departments, non-plan resources are more important than plan resources in their day-to-day operations.

5.43 Most development projects implemented by the Ministry have been prepared under the direction of, and with consultants financed by, foreign donors. The Ministry does not have adequate in-house project preparation capacity, nor does it have structured project administration or implementation departments. Projects tend to be administered by special project implementation units set up on an ad hoc basis as the need arises, frequently with the same staff employed by more than one unit or moved from project to project because the Ministry lacks a strong second echelon of trained and experienced managers. Each project becomes a special case, and there has been little development of institutional capacity for project administration handed down from one project to the next. The result is that each new project has to go through the same learning process, with all the resultant delays this involves. Project implementation invariably takes longer than anticipated, with increases in costs and decreases in benefits.

5.44 MALR land reclamation projects have a somewhat different structure. These are usually prepared and administered by the General Authority for Rehabilitation Projects and Agricultural Development (GARPAD). The authority has a Project Planning Department and, within this, a very small and understaffed Project Preparation Unit, which has carried out feasibility studies, including economic evaluation. Most project preparation within the department is concerned only with engineering design and construction plans and their costs, but not their benefits. Account has to be taken in this type of planning of soil type because this affects the method of irrigation water distribution needed, but economic evaluation could be strengthened. Some foreign-financed projects have been prepared by the intended donors. A Land Master Plan (LMP) was carried out in the early 1980s by consultants. This plan surveyed the potential reclaimable area, divided it into Land Development Units (LDUs) and ranked these by economic criteria. By that time, however, construction had already started on most of the LDUs, which were subdivided into a number of projects. New projects, started since the completion of the LMP, do not appear to take due regard of the

LMP ranking, with some of them not even appearing on the LMP list of priority projects.

5.45 Project Implementation. Within MALR, project implementation is carried out by six (previously public) land reclamation companies now grouped into the Holding Company for Land Reclamation. The construction program for each contract is agreed by GARPAD and the company. Implementation problems arise because project costs are often underestimated, with inadequate allowances for inflation; the company often runs out of money before the agreed work is completed, either forcing the company to borrow to complete the work, which at current interest rates raises costs even more rapidly, or delaying construction until GARPAD has more funds. The result is that GARPAD has been unable to keep up with its planned targets for land reclamation. This problem is compounded because of the large number of projects under construction at any one time and the tendency to start new projects before the ongoing ones are completed.

5.46 Planning and Implementation within MPWWR. Project administration and implementation in MPWWR and MALR share many of the same features, but there are some significant differences. Like GARPAD, there is a Project Planning Department in MPWWR, but project planning is again confined to engineering feasibility and cost estimation with little attention paid to economics, except where projects are prepared for foreign financing and donors require economic studies. The actual preparation of projects is carried out within the respective sector department (i.e., Barrages, Irrigation, Horizontal Expansion and Mechanical and Electrical). There is little monitoring or evaluation capacity within the department, and the Ministry's ability to effectively administer its projects could be strengthened. Project implementation is carried out principally through five (formerly public) excavation companies now grouped under the Holding Company for Public Works on the basis of negotiated contracts and prices at agreed unit rates; private contractors are being encouraged to participate, particularly for structure repair and replacement. Costs are usually underestimated, and work is held up until MPWWR can obtain more funds or the excavation companies can borrow. This results in excessive delays in implementation in major works. New machinery is sold to the companies as needed, but this creates a cash flow problem when the contracts are only for one year at a time. The companies are frequently reluctant to invest in specialized machinery when they have no guarantee of a continuous flow of work. When MPWWR runs short of funds, it may postpone paying the companies. As of end 1992, it owed them about LE 100 million, not including the amounts owed to the Egyptian Electricity Authority. There is major scope for improving the efficiency of the contractors, both large and small, private as well as public, and a better system of financing equipment purchases is needed.

5.47 Coordination between Ministries. The need to integrate irrigation development with agricultural and community development activities requires close coordination between MPWWR, GARPAD and several other related ministries such as for electricity, roads, education and

health. Coordination is accomplished by means of committees; however, there is no effective delegation of authority and these do not always work smoothly. This is reflected in such simple matters as the speed with which they pay each others bills. There is invariably a time lag between the completion of the main irrigation work by MPWWR and the initiation of reclamation works by MALR. In the case of the North Sinai Project, attempts are being made to address this by establishing a special new development authority.

5.48 Drainage Planning and Implementation. The administration and implementation of drainage projects, the responsibility of the semi-autonomous Egyptian Public Authority for Drainage Projects (EPADP), though not without problems, is better organized. The authority has well-established procedures for the design, planning and monitoring of projects, based on economic criteria, although its construction supervision is weak. Contracts for the installation of drains are awarded on the basis of competitive bidding. Of the 5 large (formerly public) companies, now under a holding company, 2 specialize in drain installation, but the bidding process has encouraged small private contractors to participate, and some 30 companies are now involved in the drainage program. Unfortunately, many of the small contractors have a weak financial base, inadequate technical staff and limited support equipment. EPADP may purchase equipment on behalf of the contractors, but, as for irrigation construction, this gives rise to cash flow problems in a typical two-year contract, and many contractors are unable to complete their contracts. Despite this, compared with five or six years ago, when contractors were typically three to four years behind schedule, the situation today is much improved.

5.49 Improving the Planning Process. The capacity for project planning needs to be strengthened and the planning process improved at both MALR and MPWWR in order to avoid poorly planned projects, cost overruns, implementation delays and the selection of uneconomic projects. Even though some sectors have the technical capacity to prepare good projects, the capacity for reviewing projects from an economic point of view should be improved. During the first two plans, donors encouraged both MALR and MPWWR to set up Project Preparation Units by providing finance and technical assistance. Some good individual projects were prepared by these units, but they were less successful than expected in bringing about improvements in project selection because they did not become an integral part of the planning system. Until MOP insists that project preparation meets certain minimum standards and economic criteria, and so long as plan funds are allocated without consideration of project economics alone, noneconomic considerations will continue to influence project selection, at times, unduly.

5.50 There is another dimension to this problem, particularly important in the agricultural sector: the relationship between the recurrent and plan budgets. Some activities, such as agricultural extension, are almost entirely financed out of the recurrent budget; thus, their critical importance is not reflected in the plan. Second,

the plan budget is frequently used to make up shortages in the recurrent budget, either on an ad hoc basis (by transferring plan funds to, say, the maintenance costs of a pumping station) or on a more deliberate basis by projectizing, for instance, maintenance costs to make up for past neglect, itself an expensive way of proceeding. The list of MPWWR projects indicates the extent of this practice. Third, the plan budget can also be used to supplement recurrent salary costs by the inclusion in plan project costs of incentive payments to staff, a short-term remedy not sustainable after the project is completed. The remedy is to amalgamate the finance and the planning functions of each ministry so that the total expenditure needs of the ministry can be looked at as a whole. This would, however, require fundamental changes in the way the Government finances the ministries, with some resources coming from the Ministry of Finance on an annual basis, and some coming from the MOP on a longer-term basis.

Environmental Issues

5.51 The Government of Egypt has decided to prepare a National Environmental Action Plan in collaboration with the World Bank and experts from many donor countries. Work for this plan has highlighted a number of areas of concern. These include: (i.) Water Resource Management: the country is heading towards water scarcity within 10-25 years, as increasing pollution reduces the availability of usable water; and (ii.) Land Resources Management: land being lost through urban encroachment is more productive than land being gained through reclamation.

5.52 Pollution. The pollution of drainage water has become an immediate cause for concern as the importance of water reuse grows. Mixing drainage water with river/canal water is seen as an important method of increasing the amount of water available for irrigation. To be suitable, however, the quality of the water has to meet certain criteria, particularly as it is frequently also used for domestic purposes. Drainage water from agricultural land inevitably collects residues of applied fertilizers and agricultural chemicals. Some drains also receive urban sewage and industrial waste. An existing monitoring network provides some data about conventional pollutants, but little is known about more hazardous pollutants from urban and industrial discharges. A water quality impact assessment study is being financed by USAID to develop better monitoring systems. With respect to pollution of irrigation water and the high degree of salinity in drained water recycled on reclaimed land, MPWWR will be implementing a national project to conserve clean water and to monitor and estimate changes in recycled water by developing the existing monitoring networks, specifying waste priorities and following changes and effects.

5.53 The pollution of river water by molluscicides is another problem. During the 1980s, molluscicides were frequently used in canals and drains to control the snails that carry bilharzia. Its use has now been greatly reduced since its serious environmental consequences were

recognized. While bilharzia is still prevalent in parts of the Delta, molluscicides are now only used when local infection rates exceed dangerous levels.

5.54 The use of pesticides and herbicides is currently another major cause for concern. Cotton crops normally require several pesticide applications. In the past, these were under strict government control and were subsidized. In the future, pesticide application will be the farmers' responsibility. How to control both what pesticide is applied and how it is applied, and at the same time ensure that pests are properly controlled, is a major problem. The abolition of pesticide subsidies should do much to discourage excessive use. The long-term solution is the development of a system of integrated pest management, which will greatly reduce the need for spraying cotton. In the meantime, no easy, short-term solution is in sight.

5.55 Herbicides have been used for many years to control aquatic weed growth. Under the 1988 Channel Maintenance Project, the use of environmentally safe herbicides was extended in order to develop a balanced cycle of weed mowing, herbicide treatment and desilting. Then in December 1990, MPWWR decided to ban the use of all chemicals for aquatic weed control. An alternative solution to controlling aquatic weeds, using only mechanical methods, is being sought. In the meantime, the weed problem is a major threat to the water distribution and drainage systems.

5.56 An environmental impact study has recently been completed for the North Sinai project and is being reviewed by the Government. Reused drainage water provides about half the planned irrigation water supply for the project, and higher salinity requires skillful water and crop management techniques.

Cost Recovery

5.57 Until the middle of the Second Five-Year Plan, the agricultural sector was indirectly taxed through the compulsory procurement of crops at below market prices. The value of the transfer out of the sector (excluding the cost of the irrigation system) is estimated at LE 2.0 billion for 1985, compared with annual public sector investment in the sector at that time of around LE 0.8 billion.²⁴ Thus, cost recovery was not an important issue in earlier plans.

5.58 Land Tax. The only direct taxation of agriculture occurs through the land tax. This averages about LE 20 per feddan and is infrequently revised.²⁵ The tax is levied on owners of holdings in

²⁴ See Derthier, J.J., "Trade, Exchange Rates and Agricultural Pricing Policies in Egypt," World Bank, 1989.

²⁵ See World Bank, Egypt: Agricultural Sector Strategy for the 1990s, (red cover).

excess of three feddans, which accounts for a little over half the land area, and on smaller holdings if the owner has nonagricultural sources of income. The basic land tax is augmented by a variety of additional taxes, including the Governorate Tax (15 percent of the land tax) and National Security Tax (66 percent of land tax), which are levied on the user. An "additional tax," at 50 percent of the land tax, is paid by the owner. The basic land tax was only raising about LE 30 million per year in the mid-1980s and has not risen in line with inflation.

5.59 Cost recovery systems operate for drainage and land reclamation. By law, farmers are required to pay the costs of sub-surface tile drainage investment, without interest, over a 20-year period, commencing 1 year following the completion of installation. This gives a rent recovery index of 0.25. Typically, annual payments on recently completed areas are a little under LE 50 per feddan. Collection rates were about 70 percent in 1991 and are rising. Operation and maintenance costs of the drainage system, estimated at LE 22 per feddan, are not recovered.²⁶ A study on how to increase the amount recovered is under way.

5.60 In the case of land reclamation, cost recovery is made in various ways. Graduate settlers pay for their farms in installments without interest over 30 years, with a 3-year grace period; however, this price does not cover the full costs of land reclamation. Land allocated to investors may either be auctioned or a price negotiated with GARPAD. The payment terms vary, but the most frequent system is a 25 percent downpayment and yearly equal installments for the outstanding sum at 7 percent interest over the following three years. Land prices for investors average around LE 10,000 per feddan, more than covering reclamation costs.

5.61 There is full agreement on the part of the Government that pumping costs in the new lands should be recovered from farmers in full. However, this system has not yet been fully introduced. Cooperatives, which own their own booster pumping stations, do charge their members for pumping.

5.62 Cost Recovery for Water. Water is provided free throughout the whole irrigation system. The full cost of operation and maintenance, and the replacement of the irrigation system, is borne by the Government through the MPWWR budget. The whole issue of recovering these costs from farmers is fraught with political, cultural, social and, simply, practical difficulties. Until recently, it was possible to argue that, with the high level of indirect taxation of the sector, these costs were covered from within the sector and that a direct water charge was not necessary. This is no longer true. In addition, there is an increasingly powerful economic argument for charging for water. Water is becoming more and more a scarce good, and, as horizontal expansion into the new lands reaches a limit imposed by water supply,

²⁶ See the Appraisal Report on the National Drainage Project, op. cit.

its use should carry a cost to encourage farmers to invest in water saving devices/systems. In addition, the decontrol of agriculture in a newly liberalized economic environment, where farmers are free to make their own decisions about what crops to grow, provides no incentive for farmers to grow low water-using crops (or, conversely, not to grow high water-using crops) or, again, to invest in water-saving technologies.

5.63 The latter point is best illustrated by the cost, in terms of water, imposed by the cultivation of sugarcane and rice. These two crops occupy only some 10 percent of the cropped area and produce a similar proportion of agricultural value added, yet they account for an estimated 37 percent of total water consumption. There are technical reasons for growing at least some rice, particularly in the six Delta Governorates close to the coast, related to soil and salinity and water table levels, as well as the relatively poorer quality of water which is being used for rice cultivation. There would be no economic case for growing sugarcane at all if water were priced in terms of its scarcity value. However, a large sugarcane industry, with all its expensive industrial processing infrastructure, has been developed in order to meet past policy objectives related to self-sufficiency. In an era of water surplus, this was not necessarily a wrong decision, but it does present a problem in the 1990s and beyond.

5.64 Short-term solutions to the rice/sugarcane issue are possible. These crops could be made less attractive economically to farmers by levying a special crop tax (i.e., one designed to reflect the economic cost of water used in cultivating these crops). There is also a possible longer-term solution to the sugarcane problem - converting the sugarcane factories to process sugar beet, if sugar beet can be grown on a commercial basis and the rehabilitation of existing mills is viable. Ultimately, however, the only way that an optimal economic allocation of water can be brought about is by charging for its use.

5.65 The Government is currently undertaking studies into irrigation water cost recovery in order to understand better what would be involved in charging farmers both the cost of maintaining the system at present levels of efficiency and of maintaining it at a level nearer to the optimum. The Government has argued that farmers in new lands will be charged sufficient to cover costs of operating and maintaining stations and developed networks but that investment cost recovery would have to be considered later. Until these studies are complete, it is unlikely that any radical measures will be adopted.

5.66 Legal Basis for Cost Recovery. In the meantime, however, the Irrigation and Drainage Law No. 74 of 1971 provides a legal basis for recovering the cost of improvements. The law would not permit all operation and maintenance costs to be recovered, but there is at least a basis for making a start. One such start that the Government has under consideration is to transfer booster pump ownership and operation and maintenance responsibility to farmers and/or farmer groups; a start has been made in the new lands. The Mechanical and Electrical Department of MPWWR operates about 600 booster stations or smaller pumping stations

with a capacity of less than one cubic meter per second, in addition to wells that could be handed over. This would reduce the department's annual budget outlay by about 20 percent. This policy has not been implemented, though in the reclaimed lands, farmers are increasingly meeting these costs, because of the lack of imported spare parts, the lack of maintenance skills in rural areas and the organizational complexity of the handover.

5.67 It is clear from the above that the agricultural sector, once subject to high indirect taxation with large financial transfers out of the sector, now enjoys substantial subsidization of production through the provision of free water. The present cost of maintaining the system at its less than optimum level, without taking into account the continued deterioration of structures and the need for a more rapid rate of replacement, is LE 600 million per year.²⁷ The true cost of providing free water is well in excess of this.

Public Investment to Promote Private Sector Activity

5.68 During the Second Five-Year Plan, half of the investment in agriculture, land reclamation and irrigation came from the private sector, whose investments totalled LE 4.5 billion. The Third Five-Year Plan assumes private investment in the sector, at LE 6.4 billion, will be constant or even lower in real terms. It is not clear what would be the intrasectoral distribution of private sector investment. What detail is available regarding distribution in the Second Plan period indicates that approximately half went towards private land reclamation activities, one third to irrigation, and the rest to agriculture. Government policy in land reclamation has been to encourage private investment by providing the basic infrastructure, leaving to the private sector the task of bringing the land up to cultivable levels.

5.69 In the Third Five-Year Plan, internal reclamation, including the establishment of irrigation networks and internal drainage for surface, sprinkler, or drip irrigation, in addition to pumping stations, access roads, internal power networks, wind barriers, and cultivation with reclamation crops, will be targeted on 800,000 feddans. The public sector will provide 291,000 feddans with basic infrastructure, allowing the private sector to complete the rest of the work needed to bring the land into cultivation. In addition, 359,000 feddans have also been earmarked for development by the private sector without any public infrastructure provision. A further 150,000 feddans that will be made ready for graduate settlers. The estimated cost to the private sector of this reclamation is LE 3.4 billion.

²⁷ This figure represents the average annual expenditure of MPWRR on salaries and operation and maintenance financed through the recurrent budget in 1991/92 prices, plus the average annual expenditure on operation and maintenance financed through the Second Five-Year Plan. It does not include interest on capital invested in the system.

5.70 The Third Five-Year Plan estimates that the private sector will invest a further LE 3.0 billion in other activities. The total estimated private sector investment in the Third Plan period would, thus, be LE 6.4 billion, some 42 percent more in current prices than under the Second Five-Year Plan. Only LE 0.3 billion is for investments that previously were financed through the public sector under the Second Plan, namely the public sector companies now brought under the four holding companies in the sector. The Third Five-Year Plan, therefore, appears to assume that private sector investment will not increase in real terms. Given that it has been agreed under ERSAP to privatize many of the activities previously performed by the public sector companies and to sell the assets of the agricultural companies and the Agrarian Reform Organization, this does not seem realistic. For instance, the divestiture of PBDAC input distribution and crop purchasing activities would involve a very considerable investment by the private companies that took it over, even if this merely represented a transfer of assets from the public to the private sector. A thorough-going privatization of the sector would imply a more considerable increase in the role of private investment than appears to be assumed.

E. Appraisal of the Investment Program and Recommendations

5.71 Macroeconomic Considerations. A basic question faces any appraisal of Third Five-Year Plan allocations: to what extent do the initial allocations represent a definitive list of projects that will be financed? Does the list represent all projects to be financed or may new projects be added, particularly if an aid donor expresses a willingness to finance them? Theoretically, if the plan is to have any macroeconomic validity beyond the very short term, the first position should be the one that the Ministry of Planning embraces. Practically, however, the Bank staff, after talking to the operating ministries and reviewing their proposals, received the impression that the plan framework is regarded as flexible and that new projects can be added (without having to remove something else to make room to accommodate them) if financing is available. This is particularly true where donor-financed projects are concerned. Donor programs are not fully synchronized with the plan. There are a number of major donor-financed projects, for instance, that will close before the end of the Third Plan but that, from the point of view of national development needs, ought to be replaced or extended. In all probability these projects will be extended in some form or other (e.g., the USAID-financed National Agricultural Research Project). Similarly, there are a number of new projects under preparation to which the respective operating ministries give high priority (e.g., the West Nubariya Agricultural Intensification Project) but whose funding is not fully reflected in the plan documents.

5.72 Vertical Expansion. Under the Third Five-Year Plan, MALR allocations for vertical expansion have been greatly reduced in real terms, compared with those under the Second Five-Year Plan, because of the transfer of the budgets of the public sector companies to non-plan financing. The adequacy of the remaining financing has to be judged in

terms of whether it is enough to support the new role of MALR as the supporter of production promoting activities, such as research and extension. The final Third Plan allocation for the Ministry of Agriculture and its Service and Economic Authorities is LE 2211.3 million. The division between activities is reflected in Table 5.3. Research accounts for almost one-third of total allocations. This should provide sufficient funds to allow the research system to adjust to meet the changing demands of agricultural modernization; indeed, given the problems experienced in the Second Five-Year Plan in using available funds, it may be overly generous. The allocation for central and local government covers a wide range of activities, including donor-financed, governorate-level projects. The allocation for credit and storage is adequate to cover the on-going projects in these areas. The allocations for veterinary and fishery activities also seem reasonable.

**Table 5.3: Third Five-Year Plan Allocations
Ministry of Agriculture
(LE millions)**

	Allocation	Pct. Share
Central and Local Government	420.8	19.0 %
Research	716.3	32.4 %
Credit and Storage	445.8	20.2 %
Land Improvement	333.5	15.1 %
Veterinary Services	166.8	7.5 %
Fisheries Development	61.2	2.8 %
Other Funds and Authorities	66.9	3.0 %
Total	2,211.3	100.0 %

Source: Ministry of Planning.

5.73 Even though weak and deteriorated soil represent more than 50 percent of total area, the allocation of LE 333.5 million for land improvement (to finance the activities of the Executive Agency for the Improvement of Agricultural Lands) is questionable on two grounds. First, its economic justification is largely unproven. Second, this is no longer a suitable use of public sector funds: either it should be privatized, or, at least, the cost should be recovered from farmers. It is recommended that this be reduced by LE 200 million by reducing the soil amelioration project component.

5.74 The lack of funds for extension in the Third Plan allocations is most surprising. This happens because most extension costs are financed outside the plan (i.e., salaries). The extension service, however, is grossly undercapitalized (e.g., the lack of vehicles), and a project to strengthen the extension service on a national basis should appear in the Third Plan. At present, efforts to strengthen the extension service are confined to components of other projects scattered in different areas. This worked well in the case of the governorate-level Minya Agricultural Development Project as a pilot

experiment. It now needs to be replicated on a national level. The problem with the extension service is that it grew up as a regulatory agency; the new service role expected of it by senior levels in the Ministry has not yet trickled down to the working level. A project that brought all these scattered efforts under one national effort would be a better, long-run solution. This is particularly true of the extension service in the new lands. It makes little sense to continue the historical division between the extension service in the old lands and service in the new lands. A national extension project could become a means of developing the strong, modernized extension service that Egypt will badly need to face the technological challenges of the 1990s.

5.75 The intensification of the old-new lands is not presently included in the Third Five-Year Plan. A proposed West Nubariya Agricultural Intensification Project that should provide a model for the intensification of the rest of this area is under preparation. This is an important project, and it should be included in the Third Plan. Further projects of this nature will probably have to wait until the next five-year plan.

5.76 The main objectives underlying the Government of Egypt's land reclamation program are social and strategic rather than economic. Nevertheless, it is important that investment in land reclamation should be technically feasible and economically viable. Given the high costs and the low, delayed benefits of reclaiming new lands, and the large investments made in lands already reclaimed, the investment program should give priority to the intensification of reclaimed lands, where investments are smaller and yields quicker to respond to intensification than new lands. Third Five-Year Plan allocations for horizontal expansion, even without considering the North Sinai Project and taking into account the nonquantifiable benefits of land reclamation and settlement, need to be reduced. In a period of financial stringency like the present, all efforts should be concentrated on completing ongoing projects rather than starting on further expansions, particularly ones like Wadi El-Nakra where the economic benefits may not even cover costs. Also, more consideration should be given to making potential investors in such areas provide ex ante finance, both to lessen the financial burden on the Third Plan as well as to guarantee a more rapid disposal of the land once it is reclaimed.

5.77 The Third Five-Year Plan's allocations for irrigation are not adequate to the need of maintaining and improving the efficiency of the water distribution system. Without more detailed information regarding specific allocations, it is impossible to be more precise. Nevertheless, it appears that MPWWR requested allocations do no more than maintain investments at about their current level, and that these requests have been reduced by MOP. Maintenance is financed mostly through the non-plan budget. Improving the efficiency of the irrigation system, however, is a plan item. Even given present resource constraints, this has a very high priority within the sector's own development strategy. Better water control will be the main source of saving water in the old (and also in the old-new) lands. Current

external financing to support this is due to finish by the end of FY95, and it is not too early to consider ways of initiating a more sustained program for irrigation improvement, which is likely to cost many billions of pounds over coming decades. At the present rate of progress and with present plan allocations, it will be decades before the whole system can be modernized. The rate of return to investment in improved water delivery systems ranges from 15 percent up to 30 percent, depending on the type of improvement needed.²⁸ Some investments of this type could also be partly financed by the farmers themselves without recourse to public funds. A start should be made as soon as possible on the preparation of a master plan for irrigation improvement, building on the very considerable work already completed. Proposals for a West Nubaria Systems Operation Project could be revived as a start to this work. MOP has indicated some flexibility on increasing investments in irrigation system improvements and utilities should additional financing become available and should implementation capacity allow such additions.

5.78 Another project not in the Third Five-Year Plan, other than for a nominal amount, is the reconstruction of the Naga Hammadi Barrage. With a feasibility study already under preparation and foreign financing likely to be available, however, there could well be strong pressure to start the reconstruction within the Third Plan. This would be a very large project, probably costing LE 500 million in 1992 prices, which once started would have to be completed as soon as possible. Given the present financial situation, unless the feasibility study presents very cogent reasons for starting the reconstruction immediately, this project should not have top priority for additional funds.

5.79 As far as the National Drainage Program is concerned, foreign financing is already assured through the Third Five-Year Plan period and plan allocations should be adequate to meet EPADP needs. The main obstacle to meeting proposed targets will be implementation capacity.

5.80 North Sinai Project. The inclusion of the first phase of the North Sinai Project, with a Third Five-Year Plan allocation of LE 1.2 billion (US\$362 million) for the irrigation and drainage infrastructure only, raises issues that go far beyond the priorities of the agricultural sector. It is unlikely that the project will contribute to agricultural sector production in the Third Plan period, and probably only modestly in the Fourth Five-Year Plan period. In economic terms, it has, at best, a marginal rate of return. In a period of financial stringency, therefore, it would appear as an obvious candidate for postponement till a more favorable moment. The project, however, is not being built primarily for economic reasons but for national strategic and political ones. It is included in the Third Plan because now, after 12 years of preparation, work on the syphon under the

²⁸ See Sir M. MacDonald and Partners, "Rehabilitation and Improvement of Water Delivery in Old Lands," MPWNR, December 1987.

Suez Canal and on infrastructure in the Sinai can start in earnest. Under present plans, water from the Nile will become available east of Suez by 1996. Some work has already begun, and tenders will be issued within the year for the main structures. Waiting for a more favorable financial moment is not an option that is politically acceptable.²⁹ From the point of view of public sector investment, however, there are a number of measures that might lessen the burden on present and future five-year plans. In the first place, the irrigation proposals are based on developing the maximum area of cultivable land for which water is thought to be available. These plans should be looked at again to see whether the social and political objectives might not be equally well served by, at least initially, developing a smaller area even in the Phase 1 and Phase 2 areas. The Phase 3 area should be subject to a detailed feasibility study, including economic benefits. Secondly, since the first 24 km of the main canal are not being lined, it could be built to a smaller cross-section, and the full pumping capacity need not be installed initially. Thirdly, the initially developed area could be sold to investors/cooperatives rather than allocated to graduates. These proposals could save perhaps LE 400 million within the Third Plan period.

World Bank Recommendations

5.81 Table 5.4, below, shows the main projects proposed for inclusion in the Third Five-Year Plan and the allocations made by MOP. Also indicated are the changes proposed by the Bank on the basis of this analysis of the Third Five-Year Plan and other considerations.

5.82 The main changes proposed in the Ministry of Agriculture plan are to reduce the allocation for soil amelioration projects by LE 200 million, to add the four new projects already proposed earlier (National Agricultural Extension, LE 135 million; New Lands Agricultural Services, LE 120 million; Agricultural Modernization, public sector share of LE 200 million; and Matrouh Resource Management, LE 115 million) and, to take advantage of the reform momentum presently in place, to add provision for an Agricultural Sector Investment Loan, LE 165 million. This would be jointly financed by the World Bank and interested donors. Its primary objective would be to provide assistance to the Government in completing its program of policy and institutional reforms to increase sector efficiency (particularly in irrigation through the introduction of irrigation fees and investments in irrigation improvement), in privatizing the remaining commercial operations of MALR and in strengthening the overall institutional framework.

5.83 Changes proposed in the allocations for the Ministry of Land Reclamation are to postpone completion of the Wadi El-Nakra project (at

²⁹ Moreover, MOP has argued that postponement of the project could result in a substantial increase in costs.

**Table 5.4: Main Agricultural Sector Projects, Third Five-Year Plan
NOP Allocations and World Bank-Proposed Alterations¹
(LE millions)**

	NOP (Final Plan)	Proposed Changes
Ministry of Agriculture and Land Reclamation		
A. Agriculture		
Central and Local Administration	421	-
Agricultural Research Projects	716	-
Soil Amelioration Projects	334	- 200
Storage Projects of PBDAC	446	-
National Agricultural Extension Project	-	+ 135
Matrouh Resources Management Project	-	+ 115
New Lands Agricultural Services Project	-	+ 120
Agricultural Modernization Project	-	+ 200
Agricultural Sector Investment Project	-	+ 165
Other Projects/Programs ²	295	-
Total Agriculture	2,211	+ 535
B. Land Reclamation		
18 Projects for Completion of Infrastructure	776	- 260
17 New Infrastructure Projects	737	- 245
Internal Reclamation on Completed Projects	825	-
West Nubariya Intensification Project	-	+ 180
Other Projects/Programs ²	240	-
Total Land Reclamation	2,577	- 325
Ministry of Public Works and Water Resources		
Administration	12	-
Irrigation Department		
Iena Barrage	247	-
Irrigation Management Projects	724	-
First Channel Maintenance Project	175	-
Second Channel Maintenance Project	-	+ 200
Other Irrigation Projects	185	-
Irrigation Improvement Project	-	+ 150
Mechanical and Electrical Department		
First Pump Station Rehabilitation Project	34	-
Second Pump Station Rehabilitation Project	264	-
Drainage Projects	1,250	-
North Sinai Development	1,200	- 400
Other Projects/Programs ²	719	-
Total Ministry of Public Works and Water Res.	4,810	- 50
Total Agricultural Sector	9,599	+ 160

Source: Ministry of Planning and staff estimates.

- ¹ The World Bank staff have reviewed feasibility studies/proposals for the main investments, as discussed in this chapter. There are, however, a number of proposals (such as the 35 land reclamation projects, among others) for which detailed feasibility reports with ERRs are not available. Bank staff-proposed alterations are based on discussions with the Government. Detailed feasibility studies, with acceptable ERRs, should proceed all investments in the sector.
- ² These include a number of small projects and programs that were not reviewed by the Bank mission that visited Cairo in February/March 1992.

a saving of LE 260 million)³⁰ and to reduce allocations for the new infrastructure projects from LE 745 million to LE 500 million. This would slow down work on projects that would mainly benefit private developers. If these private developers were willing to finance infrastructure work in advance of construction these projects could proceed later.

5.84 It is proposed for MPWWR that two additional projects be accommodated, a second Channel Improvement Project (LE 200 million) and an Irrigation System Improvement Project on the lines suggested in paragraph 5.73 (LE 150 million). These would be offset by a reduction of LE 400 million for the North Sinai Project.

5.85 The overall effect of these changes would be to increase the allocation for the agricultural sector as a whole by LE 160 million, from LE 9599 million to LE 9759 million.

5.86 Another set of recommendations relates to cost recovery. MPWWR should consider levying an irrigation service fee for water and drainage improvement to the extent allowed by Law No. 74 of 1971; it should start charging for pumping costs on pumped schemes; and should transfer booster pump ownership and operational responsibility to farmers. An on-going study on the costs of the irrigation and drainage system should provide the basis for introducing irrigation/drainage service fees. Although the recovery of operations and maintenance costs is vital, nevertheless, the service fee should ultimately include investment costs as well.

5.87 An important issue in cost recovery relates to land reclamation. The subsidy element of newly reclaimed lands sold to the private sector should be reduced during the Third Five Year Plan by raising the share of buyers in investment costs (say to 75 percent). The ultimate objective should be the full recovery of investment costs of land reclamation.

F. Role of Agriculture in the 1990s

Intersectoral Issues

5.88 Contribution to Plan Targets. The agricultural sector, as one of the main productive sectors in the economy, has an important role to play in ensuring the success of the structural reform program. The impact of reforms to date has been considerable. Price liberalization and technological improvements, by increasing the production of wheat, maize and rice, have led to decreased imports (or increased exports in the case of rice) over the last two-to-three years. Agricultural imports fell from US\$2.3 billion in FY90 to US\$1.6 billion in FY91, or

³⁰ NOP argues that postponing project implementation may be difficult as commitment has already been made with a French supplier for procurement of lifting stations.

from 20 to 14 percent of merchandise imports (balanced partly by an increase of commodity [largely agricultural] grants from US\$0.9 billion to US\$1.2 billion). Unless this acceleration in the rate of growth of agricultural production can be sustained, however, the share of agricultural products in total imports will tend to start increasing again. A faster rate of growth could well continue to decrease the value of agricultural imports, or at least reduce their rate of growth. An upturn in agricultural exports, particularly cotton, would also start to reverse the worsening agricultural trade balance. Even though agricultural crop yields are quite high, there is no doubt that Egyptian farmers are capable of raising them much further. This growth, however, will only come about if farmers are given the resources, the incentives and the freedom to maximize profits.

5.89 Regional Development Strategy. The agricultural sector horizontal expansion program, particularly in the Delta and Sinai, also forms part of the regional development strategy of decentralization, by creating employment opportunities away from the main urban areas and dispersing population into new areas. The horizontal expansion program, therefore, has to be looked at from this perspective as well as from the perspective of its contribution to agricultural growth - a low rate of return should not be the sole criterion for judging the merits of a project. A project's contribution to the nation's regional development strategy needs also to be taken into account.

5.90 In practice, however, the regional development strategy has become the major criterion for assessing whether to implement a proposed project, often without any real consideration or economic evaluation of a project's agricultural benefits. The only recent attempt to rank land reclamation projects on economic criteria, the 1985 Land Master Plan, has not become the planning guide that it was intended to be. Indeed, some new projects proposed for inclusion in the Third Five-Year Plan are not even listed.

5.91 Competition for Water. Municipal and industrial water use accounts for just over 5 percent (2.9 billion cubic meters) of the total amount of water released at Aswan, compared with about 61 percent for agriculture (the remainder either flowing to the sea or being lost through evaporation). This demand is growing fast and should double over the next 15 years. With a finite amount available for release at Aswan, and the value of water in municipal and industrial uses higher than in agriculture, this will cut into the share available for agriculture. However, the amount lost to the sea can be reduced by more than the increased municipal and industrial consumption so that the absolute amount available for agriculture need not be reduced.

5.92 Hydroelectric Power. Irrigation and power generation are also closely linked. The main issue here is the replacement of the Naga Hamnadi Barrage, a major objective of which is to add a hydropower plant. In the chapter on energy it is concluded that the hydropower plant is not a least cost source of power and is not needed. The barrage's replacement, therefore, if it is to occur, will need to be

justified on the basis of irrigation and navigation benefits. The determination of these awaits the finding of the feasibility study now under way.

5.93 Industrial Issues: Cotton. Based on the ready availability of subsidized cotton lint and a range of other distorted policy signals in the past (over-valued exchange rates, tariffs and trade restrictions), Egypt has built up a large and inefficient spinning and weaving sector, accounting for nearly one quarter of industrial output, over half of all industrial export earnings, and nearly half of total employment in public sector industry. There is also a growing private sector garment industry benefitting from this cheap yarn. The significant drop in cotton production, caused in large part by price distortions and controls on markets, and the increasing share of raw cotton used by the spinning and weaving industry have drastically reduced the amount of cotton available for export. The proportion of cotton output going to local spinning mills increased from roughly 60 percent in 1980 to more than 80 percent in 1990. Egypt has been switching from raw cotton exports to the export of processed yarns and cloth. This has resulted in a misuse of high grade cotton for the production of coarse count yarns, and the value added by industry (valued at economic prices) has in some cases been negative (i.e., the prices obtained by the end product were less than the cost of the raw materials at international prices).³¹

5.94 The impact of the ERSAP, by raising the prices of raw cotton closer to international levels (in stages) is forcing the cotton spinning industry to undertake badly needed restructuring efforts and to switch to cheaper, imported, lower quality lint or cotton; or to produce and export high quality fine yarn. The inter-relationships are complex, but the end result should be to bring about a sharp increase in the export of raw cotton, offset to some extent by an increase in the import of low quality coarser yarn. As the spinning and weaving industry and the garment industry increase in efficiency and become able to compete in international markets, this should also lead to an increase in exports of textiles.

5.95 Industrial Issues: Sugar. Egypt has built up a considerable sugar industry on the basis of abundant supplies of cheap sugarcane grown with free water and protected by high tariffs and import restrictions. Here again, industrial restructuring will be needed to meet the changed price structure. A possible switch from sugarcane to sugar beet, a much less demanding crop for water, should be explored, which could provide a solution to some of the difficulties. If technically and economically feasible, this would involve converting some of the factory equipment to process beet. The cost of the conversion is unknown. A detailed study of the entire sugar subsector needs to be undertaken to identify the options.

³¹ For more details see World Bank Report No. 9381-EGT, Cotton and Textile Study, May 1991.

The Role of the Private Sector

5.96 The private sector now makes practically all crop and livestock production decisions based on price signals provided by a free market. The Minister of Agriculture sees his Ministry as the servant, not the master, of the farmers; as the provider of services that cannot be provided individually, like research and extension; and as a source of policy guidance and information. The Ministry still also serves as a purchaser of last resort, maintaining floor prices for certain crops, which in most cases reflect market prices. The last controls on cotton and sugarcane will be removed within the next two-to-three years. Public enterprises involved in production activities are being privatized.

5.97 Conversely, the provision of water and the drainage of surplus water will remain a state activity. The management of large irrigation systems requires strong central control. It is not always essential that this control be in public hands, but under conditions such as in Egypt, where the irrigation system is the backbone of the economy, it is inconceivable that this control be privatized. MPWWR will remain in control. It is not, however, necessary for MPWWR to physically own everything to exercise control. It can contract out to the private sector, as it already does to some extent, the maintenance of the irrigation and drainage system, keeping for itself a monitoring role. Similarly, land reclamation could be carried out by private companies. There is no need for any company that does this work to be in public ownership. What MPWWR and MALR still need to develop are contracting procedures that will encourage the growth of a private sector contracting industry, with access to private credit with which to buy its own equipment, not dependent on MPWWR. This process of transfer has begun, and the role of the private sector in contracting for public works should grow rapidly. For a successful transfer, it is necessary that: (i.) the private sector have access to the necessary finance; (ii.) contracting procedures be reorganized in such a way as to make it attractive for private companies to want to invest in equipment; and (iii.) the right equipment be available in Egypt for purchase by the private sector.

CHAPTER VI: ENERGY SECTOR

Summary

Energy conservation is a strategic goal of the Third Five-Year Plan. This is to be achieved by adopting economic pricing and by improving efficiency through the use of natural gas and other indigenous energy sources. Conservation is a sound objective and is appropriate, given Egypt's severe environmental problems and the need to improve the efficiency of its energy usage, particularly in the industrial sector. There are, however, several areas in which the Third Five-Year Plan could be improved in terms of rationalizing the planned investment expenditures, enhancing the role of the private sector and adopting/implementing policies that would enable the country to use investment resources more efficiently in the medium to long term. By the year 2000, Egypt may become a net importer of energy, unless the Government, by allowing a substantial involvement of the private sector, opts to intensify its efforts to develop and utilize natural gas and to continue oil and gas exploration.

A. Role of Energy Sector in the Economy

6.1 The energy sector, which comprises the power, oil and gas subsectors, plays an important role in Egypt's economy. Egypt's balance of payments and the Government's budget are both heavily dependent on revenues from sales of petroleum and petroleum products. Not only is petroleum one of the largest earners of foreign exchange, but other major foreign exchange sources, such as workers' remittances and Suez Canal traffic, are closely related to the conditions in the world oil markets. Crude oil and petroleum product exports accounted for about two thirds of merchandise exports in the 1980s. However, their share has since decreased to below 50 percent due to a slower growth in volume and the decline in prices. With the decline in both volume and prices expected to continue in the mid-1990s and domestic consumption of petroleum expected to increase, Egypt may become a net importer of petroleum products by the end of the century.

6.2 The energy sector has played an important role in Egypt's economic problems. For most of the late 1970s and 1980s the Government maintained low domestic energy prices, with petroleum prices averaging about 20 to 30 percent of international prices. This encouraged rapid consumption growth, reduced the amount available for export and discouraged energy conservation. The subsidies on energy products during 1980-88 amounted to about 30-50 percent of total government subsidies. In 1991, the total implicit subsidy for petroleum products, natural gas and electricity was 9.6 percent of GDP.

6.3 Under the First and Second Five-Year Plans, energy investments (particularly in the power sector) were primarily geared to meeting increasing demand. The sector accounted for about 12.7 percent and 13.7 percent of aggregate investment under the First and Second Five-Year Plans, respectively. Under the Third Five-Year Plan (FY93-97), the share of energy in public investment is expected to increase, primarily because of the high level of investments in power generation needed to meet the demand for power. The energy sector's contribution to GDP averaged 15.2 percent and 12.2 percent under the First and Second Five-Year Plans, respectively. In line with the expected diversification in the country's economic base, the sector's share of GDP is expected to decline further - to about 10.4 percent by the end of the Third Five-Year Plan.

Energy Demand and Supply

6.4 During the period FY82-FY91 domestic energy production increased at an average annual rate of about 4 percent per annum while domestic consumption grew by about 6 percent per annum. At the current rate of consumption Egypt may become a net importer of energy products by the turn of the century. The Third Five-Year Plan assumes that gross domestic production of energy would increase at an annual rate of about 1.6 percent per annum while total domestic consumption would grow at the rate of about 3.8 percent per annum (Table 6.1). The Bank's latest estimates suggest that energy production would in fact decline by about 0.6 percent per annum largely because of the projected decline in crude oil production from about 43.5 million tons in FY92 to about 36.9 million tons in FY97 and that consumption would increase at a slower pace of about 2.1 percent per annum. The Government's more optimistic projections indicate that production of crude oil would remain more or less constant at about 45 million tons per year throughout the Third Plan period. The demand for electricity is expected to increase at the rate of about 5 percent per annum during the Third Plan period in line with the Bank's latest projections. The Government may wish to accelerate the pace of energy pricing reforms in the second phase of its overall economic reforms so as to induce a more rapid economic consumption behavior and to increase the amount of crude oil available for export.

6.5 Role of the Energy Sector in the 1990s. The energy sector's share of GDP is expected to decline from about 12.2 percent in FY92 to about 10.4 percent by FY97, in line with the expected diversification of the country's economic base. The petroleum and gas subsector's contribution would decrease from about 10.6 percent in FY92 to about 8.7 percent in FY97, and the power subsector's contribution would remain relatively unchanged at about 1.7 percent, compared to about 1.6 percent during FY92. In terms of composition, the private sector would account for about 19.6 percent of the petroleum subsector's value added in FY97, compared to about 16.5 percent during FY92. In the power subsector, MOP projections indicate that the private sector would remain a nonplayer, as it is today. In terms of investment expenditures, the sector would

account for about 21.5 percent of total investment, of which 41.5 percent would be expected to be contributed by the private sector. The bulk of private investments are expected in the petroleum and gas subsector (88 percent). In the power subsector, private investments are expected to contribute only about 2 percent of total projected investments.

**Table 6.1: Third Five-Year Plan
Energy Demand and Supply
(million metric tons of fuel oil equivalent)**

	MOP			World Bank		
	FY92	FY97	Annual Growth	FY92	FY97	Annual Growth
Crude Oil						
Production	45.1	45.0	0.0%	43.5	36.9	-3.2%
Export	20.0	18.3	-1.8%	21.7	10.7	-13.2%
Supply to Refineries	25.1	26.7	1.2%	21.8	26.2	3.7%
Natural Gas and Condensates	8.3	13.1	9.6%	11.3	16.1	7.3%
Hydropower Production	2.4	2.4	0.0%	2.4	2.4	0.0%
Total Supply						
Gross, including Crude Exports	55.8	60.5	1.6%	57.2	55.4	-0.6%
Net	35.8	42.2	3.3%	35.5	44.7	4.7%
Consumption						
Petroleum Products	20.4	22.5	2.0%	17.6	16.3	-1.5%
Natural Gas and Condensates	10.7	15.5	7.7%	11.3	16.1	7.3%
Hydropower	2.4	2.4	0.0%	2.4	2.4	0.0%
Total Domestic Consumption	33.5	40.4	3.8%	31.3	34.8	2.1%
of which, Consumed in Elec. Prod.	--	--	--	11.3	14.0	4.7%

Sources: MOP; World Bank, El-Kuraimat Power Project, Staff Appraisal Report, 1992.

6.6 Today, Egypt exports energy. By the year 2000, however, Egypt may become a net importer of energy, unless there are substantial new energy discoveries. It is, therefore, essential for the country to diversify its economy away from its present dependence on oil revenues. The Government needs to adopt economic pricing policies and other energy conservation measures to promote economic consumption, to intensify efforts to develop and utilize natural gas and renewable energy (where economical), to explore the possibilities for constructing gas pipelines to bring natural gas from neighboring countries and to continue oil and gas exploration efforts. The private sector could make a substantial contribution to these efforts by providing capital for investment and for improving sector efficiency. Future projects also need to pay increasing attention to environmental issues by carefully designing power plants and locating them away from densely populated areas, increasing the use of environmentally clean fuels, such as natural gas, and improving the efficiency of operations to minimize the amount of fuel consumption needed to meet given levels of demand.

Institutional Framework

6.7 The Ministry of Petroleum and Mineral Resources (MPR) and the Ministry of Electricity and Power (MEP) are responsible for Egypt's energy sector. In addition, the Organization for Energy Planning (OEP) was established in 1983 to develop and implement rational energy programs that lead to rational energy utilization. OEP is an autonomous organization under the Supreme Energy Council (SEC), which includes all ministers concerned with production and consumption of energy in Egypt.

6.8 In the power subsector, MEP manages operations through: (i.) Egypt Electricity Authority (EEA), a government-owned enterprise responsible for almost all the power generated and transmitted in Egypt; (ii.) the Electricity Distribution Authority (EDA), which coordinates the distribution activities of eight regional electricity distribution companies (EDCs) responsible for the distribution of electricity to low- and medium-voltage consumers;¹ (iii.) the Hydropower Plants Executive Authority (HPPEA), responsible for the construction of new hydropower plants in coordination with the Ministry of Irrigation; (iv.) the Rural Electrification Authority (REA), responsible for the construction of distribution networks in urban and rural areas; (v.) the Nuclear Power Plants Authority (NPPA), the Atomic Power Authority (APA), and the Nuclear Material Authority (NMA), responsible for the planning, construction and operation of nuclear power plants; (vi.) the Renewable Energy Development Authority (REDA), responsible for the introduction of renewable energy projects in the country; and (vii.) the Organization for Construction and Manufacture of Electrical Equipment (OCMEE), which is involved, through its four affiliates, in the manufacture of electrical equipment and the construction of transmission and distribution lines.

6.9 In the oil and gas subsector, the government-owned Egyptian General Petroleum Corporation (EGPC) functions as a holding company under the control of MPR. The primary responsibility for all exploration, production, refining and transportation of petroleum and natural gas rests with EGPC, which carries out these functions through its subsidiaries. (Some of these subsidiaries have formed partnerships with foreign companies for the production of oil.) The marketing and distribution of oil and natural gas is largely carried out by EGPC and its subsidiaries, but private companies are involved in the distribution of petroleum products and LPG.

B. Main Sector Issues

6.10 The main issues in the energy sector that need to be addressed are: (i.) low energy pricing; (ii.) the inadequate financial

¹ At present, plans are to privatize the distribution activities with the formation of a holding company: Egypt Holding Company for Distribution Companies.

performance of sector institutions; and (iii.) the insufficient attention paid to energy conservation programs and practices.

Energy Pricing

6.11 For the last 10-12 years, energy prices have been massively subsidized. The ratio of domestic petroleum product prices to international equivalents declined from an average of about 75 percent in the 1970s to only 20 percent in the early 1980s, principally due to the Government's failure to adjust prices in response to the 1978/79 oil price increases. The Government's reluctance to adjust energy prices was based, in part, on the perception that indigenous energy resources were plentiful. The Government's energy pricing policy promoted rapid increases in the domestic consumption of energy such that during the First and Second Five-Year Plans, total commercial energy consumption increased at a higher rate (about 5.8 percent per annum) than domestic commercial production of petroleum, natural gas and hydropower (about 3.9 percent). With such imbalances between consumption and production, and in the absence of substantial new discoveries, it is estimated that Egypt could become a net importer of energy by the turn of the century.

6.12 Further consequences of low energy prices included: (i.) the depletion of the domestic energy resource base and reduced export capacity; (ii.) inadequate energy conservation and demand management measures and the underutilization of renewable and other indigenous energy resources (i.e., natural gas); (iii.) increases in environmental pollution; and (iv.) the weakening of the sector's financial performance, thus making sector agencies dependent on the government budget (particularly power subsector companies). The low energy prices also encouraged the establishment of energy-intensive industries dependent on electricity, such as the Naga Hammadi aluminum plant and the Kima fertilizer plant, and discouraged rational fuel substitution policies.

6.13 By the mid-1980s, the Government had recognized the high costs of its energy policy and started to evolve a pricing strategy to encourage the economic use of resources and the development of indigenous natural gas supplies. Thus, during 1984-91 electricity prices were increased by about 470 percent in current terms. During the same period, natural gas, fuel oil, kerosene, gas oil, gasoline and LPG were increased (in nominal terms) by about 1,106 percent, 913 percent, 600 percent, 567 percent, 536 percent and 285 percent, respectively. However, the progress made in energy price adjustments was eroded by the rapid rate of inflation, which increased from single digit numbers to about 25 percent a year by 1991.

6.14 In 1990, in the context of the Economic Reform and Structural Adjustment Program (ERSAP), the Government agreed to raise, by June 30, 1995, the weighted average domestic prices of petroleum products and natural gas to their internationally traded equivalents and to raise electricity prices to cover their long-run marginal costs.

Eliminating the difference between the 1990 domestic prices and the 1995 target prices for petroleum products, natural gas and electricity will be accomplished by five equal, annual percentage point increases. In the first step (implemented in May 1991), average petroleum product prices were increased by about 53 percent and the average electricity price was increased by about 50 percent. Effective January 4, 1992, the Government increased the prices of gas oil and kerosene by about 50 percent. As a result of these increases, the weighted average price of petroleum products rose to about 64 percent of the international equivalents and the weighted average electricity price rose to about 59 percent of long-run marginal cost (LRMC). In June/July 1992, electricity prices were increased to 69 percent of LRMC and the weighted average of petroleum product prices exceeded the 67 percent target agreed earlier, reaching about 80 percent of international prices. By July 1993, the ratio of domestic petroleum products prices to international prices increased to about 83 percent and the weighted average of electricity tariffs, as percentage of LRMC, reached 73 percent, which fell short of the 80 percent target agreed on under SAL-I. On the pricing scheme of natural gas, an input in the calculation of LRMC of electricity, the Government and the World Bank are having technical discussions. On the basis of these technical discussions, the Government will make a final decision on gas pricing by March 1994. Under the SAL-I formula, electricity tariffs are targeted to reach 89 percent and 100 percent of LRMC by June 30, 1994 and 1995, respectively. The weighted average of petroleum product prices is targeted to reach 89 percent and 100 percent of internationally traded equivalents by June 30, 1994 and 1995, respectively.

6.15 Also, as part of its new strategy for the exploitation and utilization of indigenous energy resources, in FY86 the Government introduced a new gas clause in its exploration contracts with international oil companies that requires the Egyptian General Petroleum Corporation (EGPC) to purchase gas from companies on the basis of internationally traded fuel oil prices. This should provide the incentive for gathering, processing and distributing more natural gas and lead to the increased substitution of liquid petroleum products and LPG by consumers with natural gas.

Sector Financial Performance

6.16 Power Subsector. EEA, while having managed to record marginal profits in recent years, has consistently failed to generate adequate cash to service its debts. Thus, debt service payments made by the Government for EEA and carried on EEA balance sheets, have increased from about LE 183 million in 1985 to about LE 1,775 million at the end of 1991. EEA financial performance problems arise primarily from low electricity prices and inefficient operations. Both these problems are being addressed: electricity pricing through the pricing reforms agreed with the World Bank under the ERSAP and operational efficiency improvements through upgrading the cost accounting and management reporting systems under the El-Kuraimat Power Project (Loan 3441-EGT).

Further efforts are needed to reduce line losses and rehabilitate electrical networks, which would enable a given level of demand to be met with lower energy generation. These efforts could be supported through future projects in the subsector.

6.17 Taken as a whole, the financial position of EDCs is much stronger than the financial position of EEA as EDCs are routinely able to meet their operating costs and service their debts. Unlike EEA, EDC investment requirements are largely met by the local market, thus minimizing the need for foreign exchange borrowing and the exposure to foreign exchange risks. However, to implement the Government's apparent policy of removing the EDCs from its budget, the financial performance of EDCs needs to be strengthened to attract private sector sources of capital. A major opportunity for improvement exists through rehabilitation and the reduction of transmission line losses for EDCs, which currently average about 11 percent, but could be reduced to about 9 percent within 6-7 years. At present, USAID and the Government of Finland are helping EDA with rehabilitation and line-loss reduction studies.

6.18 Oil and Gas Subsector. The financial organization of the oil and gas subsector is essentially that of a single profit center (EGPC) with numerous subsidiaries operating on a cost basis. EGPC acts as a financial coordinator and implicitly sets transfer prices between subsidiaries, which cover costs plus commission. The subsectors' financial performance critically depends on two factors: international and domestic prices and the costs of production under concession agreements. Historically, EGPC financial performance has been secure because of low costs relative to revenues; however, EGPC profit levels have deteriorated over the past six years due to declining crude oil prices. The low level of crude oil prices, compounded by the expected decline in oil production levels and the rising costs of gas supply (payable in foreign currency), could result in a net loss in the EGPC foreign exchange account during the coming decade. This issue needs to be addressed by raising domestic energy prices to increase revenues and reduce demand and by expanding the gas supply to substitute for exportable petroleum products.

Energy Conservation

6.19 Per capita energy consumption in Egypt was estimated at about 600 kg of oil equivalent by 1991, or 56 percent above the average for countries in the US\$500-1,500 GNP per capita range. The rapid growth in energy consumption has been largely attributable to the Government's past energy pricing policies. With the implementation of the ERSAP, and its program for raising energy prices to economic levels by 1995, the rate of energy consumption growth is expected to slow down. In the power subsector, measures to install modern, efficient power stations and to reduce line losses should be implemented to minimize the amount of generation and fuel consumption needed to meet a given level of demand. Also, a differentiation in peak and non-peak pricing for

large consumers would lead to more efficient power consumption patterns. Ways to increase the utilization of natural gas and of renewable energy sources, such as the use of solar energy for water heating and selective domestic power generation in remote areas, should contribute to energy conservation. Apart from the conservation effects of the new pricing policies, the Government has also established an Industrial Energy Conservation Center within the Tebbin Institute for Metallurgical Studies. The center focus on energy conservation and efficiency improvement measures for public sector industries, while the Development Research and Technological Planning Center at Cairo University focuses on similar measures for private sector industries.

C. Major Projects Under Implementation

Power Subsector

6.20 In the power subsector, the portfolio of ongoing projects comprises seven generation projects, which are expected to be completed between 1992 and 1994, and several transmission projects. When completed, the generation projects would add about 1,400 Mw to EEA generation capacity, or about LE 5.5 billion to its total assets. The main objective of the generation projects is to enable EEA to meet, reliably and efficiently, the growing demand for power. A number of these projects are for the conversion of existing power plants to combined-cycle operation, which is more efficient than conventional open-cycle systems.

**Table 6.2: Third Five-Year Plan
Power Subsector: Major Projects under Implementation**

<u>Project Name</u>	<u>Description</u>	<u>Benefits</u>	<u>IERR*</u>
1. Damietta	3x360 Mw combined-cycle power plant	Meet incremental demand	16%
2. Talkha 2	2x210 Mw thermal power plant	Meet incremental demand	14%
3. Assiut 2	300 Mw power plant	Meet incremental demand	10%
4. Damarhour	50 Mw combined-cycle power plant	Meet incremental demand	26%
5. El-Mahmoudiya	2x50 Mw combined-cycle power plant	Meet incremental demand	29%
6. Cairo South	165 Mw combined-cycle power plant	Meet incremental demand	15%
7. Cairo West Extension	2x300 Mw thermal power plant	Meet incremental demand	15%

Source: MOP.

* Incremental economic rate of return.

Note: IERRs presented in this table were calculated by EEA and/or its consultants. As such, individual IERRs may have used different assumptions and may not, therefore, be comparable to each other. Projects 1, 4 and 5 have the same names as the components included in the time slice financed by the Bank's Fourth Power Project. However, as defined by EEA, these are not the same projects and do not have the same IERRs as the components of the Fourth Power Project.

6.21 Implementation Performance. EEA is a reasonably well-managed utility that has grown considerably from 1952 when it had a total generation capacity of only 110 Mw; today, EEA has about 11,707 Mw

in its interconnected system. The organization has been strengthened through technical assistance provided under successive IDA/World Bank projects, bilateral programs and its own internal training programs. It has also been successful in attracting cofinanciers to help establish training centers at Cairo North, Cairo South, Abu Qir, Fayid, Talkha and Aswan. Although more institutional improvement is required in the areas of procurement, project cost monitoring and disbursements, EEA has adequate implementation capacity to manage its ongoing investments and those proposed under the Third Five-Year Plan.

6.22 Cost Recovery Issues. As noted in para. 6.16 above, EEA financial performance was poor for most of the 1980s, primarily because of the low level of tariffs. As a result, EEA had to depend on the Government for debt service support and, until recently, on a direct fuel subsidy for its operations in remote areas. EEA and EDCs also benefited from access to loans from the National Investment Bank (NIB) at rates below market levels. With the adjustment in energy prices, EEA is expected to become financially independent of the Government and EDCs are expected to be privatized.

Oil and Gas Subsector

6.23 Implementation Performance. EGPC has the primary responsibility for all the exploration, production, refining and transportation of petroleum and natural gas and carries out these functions through its subsidiaries and affiliates. At the senior level, EGPC management is competent and experienced in various aspects of the oil and gas industry. It has, over the last two decades, expanded its marketing organization to meet growing demands, set up and rehabilitated a number of refineries, and laid an extensive network of crude oil, petroleum products and gas pipelines. The physical implementation of all the World Bank-financed projects in the subsector - the Gulf of Suez Project (Credit 1732-EGT), the Cairo Distribution Project (Credit 1024-EGT), Western Desert Gas Exploration (Credit 1928-EGT), and the Abu Qir Gas Development (Credit 2103-EGT) - has been satisfactory with EGPC demonstrating a noteworthy capability for efficiency in this area. A Gas Investment Project (Loan 3354-EGT), approved by the World Bank in 1991 to support extension of the existing gas distribution network in the Greater Cairo area and the delivery of an additional 70 mmcfd of natural gas from the Gulf of Suez/Sinai area to the national grid, is currently under implementation.

6.24 Cost Recovery Issues. As noted in para. 6.18, cost recovery is not an issue in these subsectors at the present time. The decline in profit performance that has resulted from lower crude oil prices and decreasing volumes of export sales could be reversed through more appropriate energy pricing on domestic sales and through the substitution, in domestic markets, of natural gas for exportable petroleum products.

D. Projects Proposed for the Third Five-Year Plan

6.25 The energy sector investment plan for the Third Five-Year Plan is summarized in Table 6.3 below. The plan shows the amounts proposed by the two ministries responsible for sector management, MEP and MPR, compared to the amounts proposed by the Ministry of Planning and those recommended by the Bank. Summaries of the major proposed projects are given in Tables 6.3 and 6.4 for the power and oil and gas subsectors, respectively.

6.26 The proposed plan has been reviewed to determine the extent to which a clear linkage exists between proposed sector investments and sector issues and priorities, as described above. The impact of price adjustments and conservation measures on the demand for electricity and petroleum products and, therefore, on new capacity requirements was also considered.

Table 6.3: Third Five-Year Plan (FY92-97)
Summary of Proposed Investments
(LE billions)

Subsector	MEP/MPR Proposal	Original MOP Proposal	World Bank Recommendation	Final Plan
Power	22.47	16.00	16.67	17.70
Oil and Gas	10.80	1.08 ^a	1.50 ^a	2.68 ^a
Total	33.27	17.08	18.17	20.38

Source: MOP.

^a Excluding private sector investment.

Power Subsector

6.27 **Plan Size and Composition.** The total power subsector investment plan proposed by MEP, excluding inflation contingencies, totals LE 22.47 billion, compared to about 17.7 billion allocated by MOP. The bulk of the investments (66 percent) are for EEA. In functional terms, about 55 percent of EEA expenditures are planned for generation, 42 percent for transmission lines and control centers and the balance for general expenditures.

6.28 The main generation projects in the final Plan include, in current terms, LE 6.98 billion for the completion of ongoing projects, LE 1.17 billion for the rehabilitation of existing power stations and LE 7.83 billion for new power plants. The major new generation projects proposed are: (i.) a 1,200 Mw dual gas/oil-fired power plant at El-Kuraimat, to be commissioned in FY97, final plan allocation, LE 2,600 million; (ii.) a 1,200 Mw dual gas/oil-fired power plant at Sidi Krir, to be commissioned in two phases by FY99, final plan allocation, LE 500

million; (iii.) a 1,200 Mw power plant at Ayoun Mussa in South Sinai, to be commissioned in FY99, final plan allocation, LE 300 million, for a 2x320 Mw dual gas/oil-fired plant; (iv.) the El-Arish power plant in northern Sinai, planned for commissioning in FY94, final plan allocation, LE 330 million; (v.) the 600 Mw El-Daba nuclear power plant, final plan allocation, only LE 12 million on a project whose total cost is projected to reach LE 7,854 million; and (vi.) the 56.5 Mw Naga Hammadi hydropower plant, final plan allocation, LE 54 million, projected total cost, LE 317 million. The El-Daba nuclear and the Naga Hammadi hydropower plants would be implemented by the Nuclear Power Plants Executive Authority and the Hydropower Plants Executive Authority, respectively. The main features of these projects are summarized in Table 6.4.

**Table 6.4: Third Five-Year Plan
Power Subsector: Details of Major Planned Generation Projects**

Project	Description	Benefits	IERR*
El-Kuraimat	supply and install a dual fuel-fired (fuel oil and natural gas) thermal power plant at El-Kuraimat with a net installed capacity of 1,200 Mw	increased efficiency and reliability of electricity generation, enabling EEA to meet demand in 1997	10% 10%
Sidi Krir	supply and erect a dual fuel-fired (fuel oil and natural gas) power plant in two phases with a net installed capacity of 1,200 Mw	increased efficiency and reliability of power generation, enabling EEA to meet demand from 1998 onwards	14%
Ayoun Mussa	supply and install a 2x300 Mw dual fuel-fired (fuel oil and natural gas) power plant in southern Sinai	help EEA meet demand in southern Sinai and possibly export power to Jordan upon completion of planned interconnection	14%
Al-Arish	erection of two 30 Mw units, each based on fuel oil or natural gas, east of Port Said in northern Sinai	help EEA meet demand starting in 1993/94	10%
Naga Hammadi	56 Mw hydropower project to be based on a barrage at Naga Hammadi planned by Ministry of Public Works	help meet demand	n.c.
Pumping Storage, Gulf of Suez	600 Mw pumping storage to be used for peaking purposes	reduce consumption of costly diesel fuel used in turbines for meeting peak demand	n.c.

Source: MOP.

* Incremental economic rate of return.

n.c.: Not calculated.

Note: IERRs reported in this table were calculated by EEA and/or its consultants. As such, individual IERRs may have used different assumptions and may not, therefore, be comparable to each other. The IERR of the El-Kuraimat project is based on the World Bank-financed project of the same name.

6.29 The transmission lines component of the EEA program consists of, in current terms, LE 6.5 billion for new projects, LE 3.9 billion for the completion of ongoing projects and LE 1.33 billion for the

rehabilitation of existing facilities. The transmission line investments are closely related to the generation component, and a substantial portion of these investments is required to reinforce the existing networks. A further LE 0.3 billion is allocated for regional control centers for dispatching electrical supplies.

6.30 Viability of Planned Projects. To develop the power subsector investment plan, the following tasks were undertaken: (i.) an analysis to estimate both power and energy demand over the next 10-15 years and to determine the timing of the next generation blocks; and (ii.) a least-cost analysis to identify the potential candidates (power plants) needed to meet the required generation additions. Several feasibility studies, based on an earlier least-cost analysis, were also used to assess, among other things, the economic viability of the individual projects using internal rate of return methodology.

6.31 The power and energy demand analysis was carried out using several industry standard forecasting models (including a model for energy demand analysis and an econometric model). Three scenarios for GDP growth (low, medium and high) suggest energy demand growth rates on the order of 5-7 percent per annum. The low energy demand growth rate scenario of 5 percent per annum was used for determining the timing of the next generation blocks. To determine the potential candidate power plants for the generation blocks, EEA carried out a least-cost analysis.² The least-cost analysis encompassed all the generating options being considered in Egypt, including steam turbines using coal, nuclear units, combined cycles using natural gas, combustion turbines and hydroelectric schemes.

6.32 The generation component of the investment program matches an average annual load growth rate of about 5 percent over the next plan period; this is in line with the projections established under the recently appraised (July 1991) El-Kuraimat Power Project. Such a growth rate takes into account the expected slower GDP growth, the impact of raising electricity prices to economic levels by FY95 and the effect of conservation programs. This scenario calls for a net increase in generation capacity of about 4.6 percent per annum, compared to about 8.8 percent during the First and Second Five-Year Plan periods, and would add 2,938 Mw (net of replacement of 750 Mw) to the national unified power system and a further 75 Mw to the isolated system. The investments proposed for the generation component correspond to the minimum (low) scenario for load growth and are within EEA implementation capacity. It is unlikely that a load growth rate below the GDP rate of growth could be achieved.

² Using a software package that combines probabilistic simulation of power station operation (to calculate fuel costs) and dynamic programming to determine the optimal mix of new generation plants, and subject to user-imposed constraints, the model minimizes an objective function consisting of the sum of the fuel and other operating costs of all generating plants plus the investment costs of capacity additions, less the salvage value of plants remaining at the end of the study period.

6.33 The incremental economic rates of return (IERR) for the major generation projects based on EEA's feasibility studies appear to be satisfactory (above the normal cutoff rate for acceptable projects of 10 percent).³ IERRs for several major projects are shown in Table 6.4. These rates, given by MOP/EEA, are, however, not directly comparable since basic assumptions for benefit streams may not be the same. While no economic rates of return were available for the El-Daba and Naga Hammadi power plants, the least-cost analysis has demonstrated that these are not immediate investment priorities.

6.34 Project Financing. Final plan documents indicate that the power subsector investment plan would be financed from a combination of foreign loans, local loans from the National Investment Bank (NIB), grants and self-financing. Of the final MOP allotment of LE 17.7 billion for the power sector, LE 16.3 billion is for MEP investments, with the balance spread over other ministries and agencies whose projects contain power components. Table 6.5 shows that foreign loans would contribute about 46.0 percent, local loans about 31.5 percent,⁴ foreign grants about 10.6 percent and internal sources about 8.6 percent of total MEP financing.

**Table 6.5: Third Five-Year Plan
Ministry of Electricity Financing Plan
(LE billions)**

Agency	Total	NIB Loans	Self- Finance	Foreign Loans	Foreign Grants	Other
Egypt Electricity Authority	13.50	2.97	1.39	7.33	1.67	0.15
Rural Electrification Authority	1.80	1.29	0.02	0.10	0.01	0.40
Hydropower Plants Executive Authority	0.26	0.18	0.00	0.07	0.01	0.00
Nuclear Power Plants Authority	0.13	0.13	0.00	0.00	0.00	0.00
Renewable Energy Development Authority	0.22	0.19	0.00	0.00	0.03	0.00
Other	0.39	0.38	0.00	0.00	0.01	0.00
Total	16.30	5.13	1.40	7.50	1.72	0.55

Source: MOP.

Note: The Third Five-Year Plan also includes an additional LE 1.4 billion in power subsector projects outside the Ministry of Electricity and Power.

6.35 The World Bank staff considers the financing plan to be unrealistic in two respects. First, the proportion of financing to be provided from internal sources (about 10 percent for EEA) is

³ IERR is defined as the discount rate that equalizes the project's benefit stream with its investment costs. The benefit stream is normally based on financial tariffs, while the investment costs are based on economic prices of equipment. In cases where the financial tariffs are lower than the long-run marginal cost of supplying electricity, as is the case in Egypt, incremental rates of return understate the true benefits of the projects.

⁴ Local loans include foreign exchange borrowings secured through the National Investment Bank and on-lent to EEA in local currency terms.

inconsistent with EEA financial objectives (agreed with the World Bank under Loan 3441-EGT) of raising self-financing levels to about 30 percent in FY93 and 35 percent in each year thereafter. Such levels of self-financing should be possible given the Government's commitment to raise electricity prices to economic levels by FY95. With these electricity price increases, EEA should be able to reduce new borrowing on the domestic market and rely more on its own sources for the local currency costs of its investment program. Second, the proportion of the program to be financed from grants (10.6 percent) is too high compared to historical levels of about 2.5 percent.

6.36 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Electricity sector projects have been reduced by LE 0.1 billion in FY93, by LE 0.2 billion in FY94, and by LE 0.2 billion in FY95. At the ministry level, public investment programs have been reduced as follows. Ministry of Electricity and Power: FY93, from LE 1846.8 million to LE 1753.9 million; FY94, from LE 2158.7 million to LE 1958.7 million; and FY95, from LE 2158.0 million to LE 1948.0 million.

6.37 Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. These reductions for FY94 targeted investments include: rehabilitation of Assiut power plant (by LE 30 million); rehabilitation of Cairo South power plant (by LE 20 million); rehabilitation of Damanhour power plant (by LE 10 million); completion of Cairo West station (by LE 65.0 million); and expansion/new projects at El-Arish generating station (by LE 40.0 million), Damanhour generating station (by LE 30.0 million), El-Mahmoudiya generating station (by LE 50.0 million) and Cairo South generating station (by LE 5.0 million).

6.38 Role of the Private Sector. Under the new law for public enterprise reform (Law 203 of 1991), the construction and distribution companies are eligible for privatization. However, as an economic authority, EEA is not subject to that law. Under the Third Five-Year Plan, investments proposed by sector authorities, amounting to LE 0.8 billion for the EDCs and LE 0.2 billion for the construction companies have been excluded from the public sector investment plan by MOP on the basis that new investments in these companies would be supported by the private sector. At present, there is virtually no private sector participation in the power sector. With the passing of the new law, a holding company for the privatization of the distribution companies has been formed. The Government should consider attracting private sector involvement in the generation and distribution of electricity as a means of improving sector efficiency and mobilizing the substantial resources required by this highly capital-intensive industry.

6.39 Changes in the laws that regulate the sector are needed, allowing private investors to undertake electricity generation and distribution projects and giving sector authorities autonomy for pricing

and investment decisions.⁵ Electricity prices should be raised to economic levels as soon as possible to improve the financial performance of the sector and strengthen its ability to attract private sector capital. Financial and cost-accounting systems need to be strengthened and information on costs made available to potential investors. Further steps that must be taken to prepare the sector agencies for private sector participation are:

(i.) enforcing the requirement that the companies operate commercially and competitively, at least in the capital markets;

(ii.) granting the companies investment and operational autonomy and removing them from the government budget; and

(iii.) commissioning a study to determine financial and operating restructuring measures to make the companies competitive in attracting private sector capital.

6.40 Recommendations. Recommendations for the power subsector fall into two categories. The recommendations regarding the size and composition of the investment plan are summarized in Table 6.6 (below). Sector policy recommendations, with implications for future investment and sector efficiency, are summarized below. (The benefits of these policy recommendations have not been quantified because of uncertainty regarding resource availability.)

6.41 The recommendations for delaying the EEA thermal power plant at Ayoun Mousa, HPPEA investment at Naga Hammadi and NPPA investments at the El-Daba nuclear power plant are based on an EEA least-cost analysis, which does not show these projects to be of high priority because of their high investment costs. On the basis of the minimum load growth of 5 percent (para. 6.31), and taking into account EEA efforts to reduce line losses from 6.8 percent in FY91 to about 5.9 percent by FY97, Egypt should be able to meet its power needs without these additional power schemes. Given the constraint imposed on the overall level of expenditures, the Government may wish to defer these schemes beyond the Third Five-Year Plan period.

6.42 In addition to the above recommendations, in the medium to long term, the Government may be able to keep future investment expenditures to the minimum by adopting the following measures:

⁵ Under the second phase of the Government's reform program, to be supported by the World Bank, a joint World Bank/Government of Egypt study on the establishment of an independent utilities regulatory framework will be conducted. It is expected that by end-1994 an independent utilities regulatory commission would be established.

(i.) increasing the efficiency of energy production by using combined-cycle technology in future power plants if adequate natural gas resources can be made available;

(ii.) giving high priority to rehabilitation and line-loss reduction programs to minimize the amount of energy generation needed to meet a given level of demand;

(iii.) removing electricity subsidies to energy-intensive industries, such as fertilizer and aluminum, to encourage conservation measures; and

(iv.) limiting allocations for renewable energy development to research activities for solar, wind, biomass and geothermal energy and deferring commercial production of wind energy given the high cost of the technology.

**Table 6.6: Third Five-Year Plan
Summary of Power Subsector Investment Proposals
(LE billions)**

Sector/Agency	MEP	World Bank	MOP Final	Comments (Difference between World Bank and MOP Final)
Egypt Electricity Authority	14.80	12.56	13.50	less: (i.) LE 0.30 billion allocated for Ayoun Mousa plant; (ii.) LE 0.33 billion allocated for the El-Arish power plant; and, (iii.) LE 0.307 billion allocated for seven regional control centers
Electricity Distribution Authority	0.80	-	-	financing expected from the private sector
Rural Electrification Authority	2.00	1.80	1.80	
Hydropower Plants Executive Authority	1.40	0.17	0.26	less: (i.) LE 54 million allocated for Nag Hammadi power plant; (ii.) LE 15 million allocated for Gulf of Suez pumping storage; and, (iii.) LE 23.4 million allocated for El-El-Houn power plant
Nuclear Power Plants Authority	1.70	0.12	0.13	less LE 12 million allocated for the El-Daba nuclear power plant
Renewable Energy Development Authority	0.50	0.22	0.22	
Other*	1.27	1.79	1.79	
Totals	22.47	16.67	17.70	

*Includes LE 1.4 billion in power subsector projects not under the direction of MEP.

Source: MOP.

Oil and Gas Subsector

6.43 The main priority in the oil and gas subsector is to develop and use domestic natural gas resources as a substitute for other fuels, thus releasing both crude oil and other petroleum products for export. The increased use of natural gas would also increase the efficiency of power generation and reduce the environmental problems associated with burning fuel oil in power stations. At present, there is an imbalance between the product mix from refineries and the pattern of domestic demand. The excess production of low-value fuel oil and naphtha, relative to market demand, is being exported. With increased use of natural gas, the excess supply of these low-value products would be even greater. At the same time, Egypt is importing other petroleum products, such as lube oil, which could be economically produced locally.

6.44 Plan Size and Composition. The investments proposed for the Third Five-Year Plan reflect measures to address the above policy issues. The plan proposed by MPR totals about LE 10.8 billion, compared to about LE 15.0 billion proposed by MOP. The allocation of the investments proposed by MOP among different types of projects is shown below.

Table 6.7: Oil and Gas Subsector
Summary of Investments by MOP
(LE billions)

Investment Type	Total	Private	Public
Crude Oil and Gas			
Exploration and Production	11.18	10.00	1.18
Petroleum Refining	2.13	0.94	1.19
Petrochemical Production	1.28	1.20	0.08
Other	0.23	--	0.23
Total	14.82	12.14	2.68

Source: MOP.

The bulk of the projects will be undertaken by the private sector, and only about LE 0.3 billion is allocated for government sector work of MPR and its economic authorities. The proportion representing ongoing projects appears to be very small (about 6 percent). The major (LE 3 million or more) planned projects fall into five categories:

- (i.) gas gathering and processing: LE 0.9 billion;
- (ii.) gas distribution: LE 2.0 billion;
- (iii.) refinery operations: LE 0.6 billion;
- (iv.) petroleum pipelines: LE 0.2 billion; and,
- (v.) petrochemicals: LE 1.28 billion.

The subsector investment plan is based on a modest average annual growth rate in the demand for petroleum products of about 1.8 percent during the Third Five-Year Plan period, compared to about 1.6 percent per annum during the Second Five-Year Plan. The consumption of natural gas increased at an annual rate of about 10.4 per percent from FY88 to FY90.

6.45 Gas Gathering and Processing. The objective of these projects is to enhance the utilization of associated gas (some of which is currently being flared) and non-associated gas; to extract LPG and naphtha, which are tradeable commodities; and to transport gas to large potential consumers. The increased use of natural gas, a clean burning fuel, would also have a beneficial impact on the environment by replacing fuel oil. The two projects included in the plan cover the installation of main gas supply lines in different areas and the extraction of LPG from the Badr El-Din and Abu Sinan gas fields. These appear to be sound projects consistent with a key element of the sector investment strategy, the increased development and use of natural gas. These projects, particularly the LPG extraction, could be profitably implemented by the private sector.

6.46 Gas Distribution. The two gas distribution projects include the extension of the supply capacity of the existing gas distribution network in the Cairo area and the erection of a new gas distribution network in the Alexandria area.

6.47 Refineries. Proposed refinery project expansion projects are limited in scope and amount to a modest LE 270 million for gas oil treatment and distillation vapor production, LE 250 million for lube oil import substitution, and LE 67.5 million for an isomerization unit to increase the production rate of high octane gasoline (an environmentally sound project). The investment plan, according to the Third Five-Year Plan documents, does not include modernizing refineries, which would help in facilitating the shift from fuel oil to middle distillates and in upgrading individual product specifications. As natural gas is increasingly substituted for other fuels in the domestic market, modernization would allow for the export of higher-value products. A study should be commissioned to determine the technical, market and financial feasibility of relevant projects. If project feasibility is established, the Government may wish to seek foreign private sector participation, in view of the substantial capital resources required for such modernization schemes.

6.48 Petrochemicals. The four proposed petrochemical projects are classified as available for implementation by the private sector. Two of the projects, one for the production of terephthalic acid (a raw material for polyester) and one for the production of paraxylene (a raw material for terephthalic), also depend on demand materializing from expected private sector polyester industrial production.

6.49 Project Financing. Information obtained from EGPC suggests that the local costs would be financed entirely from government contributions, although the subsector's financial performance would

enable these to be covered internally. The World Bank recommends that subsector implementing agencies be required to cover the local cost components of their projects.

6.50 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Petroleum sector projects have been reduced by less than LE 0.1 billion in both FY93 and FY94, and not at all in FY95. At the ministry level, investment programs have been reduced as follows. Ministry of Petroleum and Natural Resources: FY93, from LE 272.4 million to LE 262.4 million; FY94, from LE 272.6 million to LE 250.0 million; FY95, unchanged, at LE 200.0 million.

6.51 Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. The only MPR project identified as a candidate for reduction in FY94 target investment is a project to extract butane gas (by LE 12.7 million). Other projects to be reduced in FY94 or other years have not been identified.

6.52 Role of the Private Sector. Private sector participation is already present in oil and gas exploration. A number of the projects proposed in the Third Five-Year Plan are suitable for private sector participation, and the Government expects the private sector to play an important role. However the results of feasibility studies suggest that the economic viability of these projects is questionable (economic rates of return of 8-9 percent). The World Bank staff understands from EGPC that several inquiries regarding these projects have already been received from potential private investors. The World Bank recommends that the Government not invest in these projects but rather provide potential private investors with all the information they require to assess a project's viability. The market should be the ultimate test of whether a project should be undertaken. The Government may also wish to consider the privatization of some refinery facilities or the introduction of private capital for the modernization of these facilities. Overall, the Government's strategy should be to enable private investors to participate in sector projects with minimum bureaucratic requirements.

E. Summary of World Bank Recommendations

6.53 The strategic goals encompassed in the Third Five-Year Plan include energy conservation, through the adoption of economic pricing and improved efficiency through the use of natural gas and other indigenous energy sources. This is a sound objective and is in line with Egypt's need to improve the efficiency of energy use. There are, however, several areas in which the Third Five-Year Plan could be improved in terms of rationalizing the planned investment expenditures, enhancing the role of the private sector and adopting/implementing policies that would enable the country to use investment resources more

efficiently in the medium to long term. Recommendations in these areas are summarized below and given in detail in the rest of the chapter.

6.54 Rationalization of Investment Expenditures. Total investment expenditures could be further reduced from LE 20.38 billion to LE 18.17 billion by eliminating or postponing several projects in the power subsector that are not essential in meeting demand in the mid- to late-1990s. (See Table 6.6 and paras. 6.38-39.) Among the projects which can be delayed or eliminated are the 1200 Mw power plant planned at Ayoun Mousa, the 56 Mw hydropower plant at Naga Hammadi, the El-Daba nuclear power plant and several regional control centers.

6.55 Measures to Enhance the Role of the Private Sector. There exists significant potential for improving sector efficiency and for mobilizing the substantial resources required in this highly capital-intensive industry, through private sector participation in the generation and distribution of electricity as well as in the petrochemical and oil exploration and refining industries. The Government should amend the electricity laws that regulate the sector to permit private investors to undertake electricity generation and distribution projects; grant autonomy for pricing and investment decisions to sector authorities; accelerate the rate at which electricity prices are raised to economic levels; improve financial and cost accounting systems and provide information on costs to potential investors; and ease the bureaucratic requirements for projects established by private investors.

6.56 Policies to Improve Sector Efficiency. The Government should consider implementing the following policies/actions to improve sector efficiency and reduce investment requirements in the medium to long term:

- (i.) Reduce line losses and rehabilitate electrical networks, thus enabling a given level of demand to be met with lower energy generation;
- (ii.) Raise domestic energy prices to discourage excessive levels of energy consumption;
- (iii.) Increase the efficiency of energy production by using combined-cycle technology in future power plants if adequate natural gas resources can be made available;
- (iv.) Remove electricity subsidies to energy-intensive industries, such as fertilizer and aluminum, to encourage conservation measures;
- (v.) Encourage private sector projects for the modernization of refineries so as to achieve a substantial shift from fuel oil to middle distillates and upgrade individual product specifications for exports as natural gas is increasingly substituted for other fuels in the domestic market; and,

(vi.) Pay increasing attention to environmental issues by carefully designing power plants and locating them away from densely populated areas and by increasing the use of environmentally clean fuels such as natural gas.

CHAPTER VII: URBAN SECTOR

Summary

Public investments in regional and urban areas is a prerequisite to ensuring the proper functioning of economic activities. The Third Five-Year Plan acknowledges the importance of such investments. It allocates about 18 percent to public utilities (water and wastewater) and 1 percent to housing out of the total public investments allocation in the Third Plan. The allocations are sufficient to satisfy the immediate needs of the sector except for water and wastewater, where the allocated amounts are neither sufficient to cope with the needs of the expanding population nor to avert the dangers associated with the pollution of water resources. The public funds allocated in the Third Five-Year Plan, because of their limited amounts, should be directed first towards the completion of ongoing projects and then towards viable rehabilitation and priority new projects. The Third Five-Year Plan continues its emphasis on the development of new communities and new cities. This could have some merit in the long run, but it is strongly recommended that the Government be cautious in embarking on any new development; it should proceed only after ensuring that the suggested new communities are feasible demographically, economically and financially. An assessment and evaluation of the past experience with new cities is badly needed before embarking on new projects. The Government has been involved in the construction of housing and in the provision of loans at below market interest rates; this activity should be kept to a minimum. Loan subsidies should be reduced and targeted to the poorest segments of the population. The private sector is able to provide needed housing more efficiently and at less cost, provided that distortions in housing markets and the major obstacles that reduce private sector participation (i.e., rent control, the unavailability of serviced land and the lack of long-term finance) are removed. Investments in water and wastewater projects are barely sufficient to cope with existing requirements and are insufficient to reduce the health hazards and the dangerous environmental aspects of water pollution. Institutional reforms, improved management of available resources, introduction of cost sharing and increased cost recovery will ultimately reduce the burden on the government budget and, at the same time, allow for an expansion of existing programs.

A. Background and Recent Developments

Background

7.1 Egypt's estimated population of 55.0 million has been growing at a relatively rapid pace. Between 1900 and 1990 population rose from 10 million to 52 million, implying an average rate of growth of 1.9 percent per year. The average pace of growth in the last ten years has been 2.6 percent. Over the past few years, the population growth rate has dropped to about 2.2 percent. However, even at a relatively low growth rate of 2.0 percent per annum, Egypt's population is expected to reach 65 million by the year 2000.

7.2 The increase in population, and its unbalanced distribution, is considered by the Government of Egypt to be the cause of many of the problems affecting the country. About 98.7 percent of the Egyptian population is concentrated in less than 4 percent of the country's total land area. With nearly 1,300 persons per square kilometer, Egypt has one of the highest population densities in the world. Moreover, about half of Egypt's population lives in urban areas, with 13 million (50 percent of the urban population) in the Cairo region.¹

7.3 Egypt's Second Five-Year Plan, covering the period from 1987/88 to 1991/92, continued to stress the importance of regional development. The creation of new urban outposts on desert land was thought to be essential in achieving regional balance in population and to ensure the preservation of limited agricultural land.

7.4 The Third Five-Year Plan continues this emphasis on regional population balance by developing new communities and new cities away from the Nile Valley even though balanced regional development was not successfully achieved during the Second Five-Year Plan. The new communities failed to attract a substantial number of people, despite the huge investments allocated to them.

7.5 The Third Five-Year Plan has rightly de-emphasized the role of the public sector in housing construction. Moreover, it has reduced investments in middle-income housing and is proposing to concentrate a bigger financial share of its housing allocation on low-income housing. As in the Second Five-Year Plan, the subsidization of loans to middle- and low-income housing still prevails. This policy should be reviewed, and subsidies should be targeted to low-income families only.

¹ Data on population are compiled from information obtained from MOP and the Central Agency for Public Mobilization and Statistics (CAPMAS).

Role and Relative Importance of the Urban Sector in the Economy

7.6 The urban areas in Egypt are the main centers for nonagricultural production, learning, and social and cultural activities. These areas contribute to employment opportunities, help in the alleviation of poverty and provide opportunities for education and health services. The efficient functioning of the urban areas is critical to economic development. Public investments in the urban sector² are, therefore, essential for such development. Adequate infrastructure³ helps reduce the constraints affecting the efficient operation of the economy. Inadequate infrastructure services also constrain the development of private sector investments, which are dependant on these services. The economy in general suffers; as investments deteriorate, development cannot be sustained.

7.7 It is difficult to estimate the effects of investments in the urban sector on employment generation due to the lack of data. Employment in the construction industry has, however, been growing at the rate of 2.2 percent per annum. Most construction activities are related to the provision of public utilities networks and facilities as well as the construction of housing; it appears, therefore, reasonable to assume that investments in the urban sector make a measurable contribution to overall growth in employment.

7.8 Housing and public utilities, excluding investments in development areas, new communities and new cities, contributed about 2.3 percent of GDP and accounted for about 17.5 percent of total investment expenditures (public and private) in the First and Second Five-Year Plans. In the Third Five-Year Plan, 20 percent of the total public investment allocations are proposed for the public utilities and housing sectors (Table 7.1). The amount of investments in the First, Second and Third Plans by the public and private sectors for housing and public utilities are also shown in Table 7.1.

Main Sectoral Issues

7.9 The concentration of the urban population in Cairo, Alexandria, the cities of the Delta, the Suez Canal area and the Nile Valley's narrow strip of land in Upper Egypt have, inter alia, led to

² In this chapter, investments in the urban sector are understood to be investments in the development of new communities, the construction of new cities, housing activities, and water and wastewater treatment and discharge facilities. These investments include both investments in the proper urban areas (cities) as well as investments related to regional areas and new communities. The investments reflect the activities of MDHPU and its two associated ministries, the Ministry of Development and New Communities and the Ministry of Housing and Public Utilities, as well as the organizations and authorities under their jurisdiction. Investments in new communities and new cities include the provision of water and wastewater networks, electrical networks, roads, public and community buildings and housing.

³ In this chapter, infrastructure should be construed as all works related to the water and wastewater subsectors, as well as roads, electricity and telephone service implemented by MDHPU in the new communities and new cities programs.

overcrowding, widespread encroachment on agricultural land and severe shortages in affordable housing for low-income segments of the population, in particular, shortages in available housing earmarked for rent. Government intervention in housing did not succeed in solving the housing problems; moreover, rent control legislation is still affecting the proper functioning of the housing market and discourages private sector investments in rental units.

**Table 7.1: Investments for Housing and Public Utilities
in the First, Second and Third Five-Year Plans
(actual and planned; LE millions)**

	First Five-Year Plan FY82/87 Actual Investments (in current prices)				Second Five-Year Plan FY87/92 Actual Investments (in current prices)				Third Five-Year Plan FY92/97 Planned Investments (in current prices)			
	Public Sector	Private Sector	Total	As Pct. Total Plan	Pct. Total Plan	Public Sector	Private Sector	Total	As Pct. Total Plan	Public Sector	Private Sector	Total	As Pct. Total Plan
Housing	1,023	5,266	6,289	11%	583	11,879	12,462	11%	775	16,430	17,205	12%
Public Utilities	3,262	0	3,262	6%	8,738	0	8,738	8%	12,453	0	12,453	8%
Total	4,285	5,266	9,551	17%	9,321	11,879	21,200	18%	13,228	16,430	29,658	20%

Note: Investments in public utilities are for greater Cairo, Alexandria and regional local authorities. They do not include investments in new development areas, new communities or new cities.

Source: Ministry of Planning and staff estimates.

7.10 During the past ten years, the new communities and new cities programs, intended to create new centers for reducing population pressures, have failed to have a noticeable impact on population distribution. Therefore, scarce financial resources could be better utilized by improving infrastructure services in densely populated areas rather than by allocating such resources towards new or sparsely populated areas.

7.11 Currently, the provision of public utilities (water, sewerage) in most densely populated areas, especially in low-income neighborhoods, is inadequate. The degradation in water quality and the associated pollution of surface and ground water due to the discharge of wastewater in drainage canals poses severe environmental and health dangers. New sewerage treatment facilities, as well as the rehabilitation, maintenance and upgrading of existing facilities, are badly needed.

7.12 Adjustments in the mandates and responsibilities of the institutions under the Ministry of Development, New Communities, Housing and Public Utilities (MDHPU) is needed to avoid duplication and improve

coordination in the provision of services. At present, the responsibilities of the several institutions operating in the sector are not well defined and frequently overlap, particularly in the greater Cairo region where several organizations are involved in similar activities related to the water and wastewater subsectors.

7.13 The insufficient financial resources and the limited managerial and absorptive capacity of the implementing public institutions point towards the need to use funds wisely and allocate them primarily to priority projects. Measures should be introduced to better manage and coordinate infrastructure works, increase the mobilization of private funds, improve cost recovery and encourage private sector participation. These measures need to be considered in implementing the Third Five-Year Plan.

7.14 The governorates and local authorities in Egypt rely on the central government for over 80 percent of their financial resources. Locally raised taxes and property taxes account for the remaining 20 percent. It is essential to reform the system and allow more financial and administrative autonomy to local authorities, as well as to improve the quality of services rendered by these authorities.

Public Sector Investment

7.15 Institutional Set-up. Investments in the urban sector is the responsibility of the MDHPU and its affiliated authorities and organizations. MDHPU was established by combining the activities of two related disciplines: housing and public utilities, and regional and urban development. MDHPU investments are targeted to four main categories: new communities programs and development areas, new cities programs, housing construction and public utilities (water and wastewater). MDHPU is composed of two associated ministries: the Ministry of Development and New Communities (MDNC), responsible for regional planning and development, including planning, constructing and managing the new communities and new cities; and the Ministry of Housing and Public Utilities (MHPU), responsible for construction activities, housing and water and wastewater systems.

7.16 MDNC has under its jurisdiction several public authorities, including the General Organization for Physical Planning (GOPP), responsible for conducting regional physical planning studies; the New Communities Development Agency (NCDA), responsible for studying and implementing the new communities and new cities programs; and several other authorities responsible for building materials and construction research.

7.17 MHPU is responsible for formulating housing policies and constructing public housing; it also provides low-interest loans through two of its affiliated organizations: the Housing and Development Bank (HDB) and the General Organization for Construction and Housing Cooperatives (GOCHC). MHPU is also responsible for establishing the

national policies for the provision of potable water and the disposal of wastewater. Its implementation arms are the National Organization for Potable Water and Sanitary Drainage (NOPWASD), which is responsible for providing potable water and for wastewater disposal throughout Egypt, except in the greater Cairo and greater Alexandria areas; the General Organization for Greater Cairo Water Supply (GOGCWS), which is responsible for supplying Cairo with water and managing its water system; the General Organization for Greater Cairo Sanitary Drainage (GOGCSD), which has the same responsibilities as GOGCWS only relating to sewage; and the Executive Organization for Greater Cairo Sewerage Projects (EOGCSP), which is responsible for the construction of the Greater Cairo Wastewater Project. The Alexandria Water Authority (AWA) and the Alexandria General Organization for Sanitary Drainage (AGOSD) are responsible for water provision, wastewater disposal and water and sewage systems in the Alexandria region.

7.18 The total public investments requested under the Third Plan for urban development, housing and public utilities by the concerned ministries and authorities, the corresponding proposed allocation by the Ministry of Planning (MOP) and the suggestions by the World Bank staff are indicated in Table 7.2. The table indicates that MOP's final allocations have reduced the amount requested by MDHPU by about 46 percent; this cut is justified except for the water and sewage subsectors as discussed earlier. The World Bank's recommendations, on the other hand, indicate a cut of 37 percent instead to allow for more investments for water and wastewater. The lack of treated water and sewerage systems in many areas of Egypt warrants a substantial increase in investments in the two subsectors to cope with the increase in population and to avert detrimental health and environmental effects. In case the Government fiscal outlook turns out to be less favorable than expected, investments in the urban sectors could be reduced from MOP's planned level of LE 13.2 billion to a core investment of about LE 10 billion. Such investments should concentrate mainly on priority water and wastewater projects, while investments allocated to the New Communities Authority and to new cities' programs would have to be cut drastically.

7.19 The reduction in the investments approved by MOP for new communities and housing is justified. The public sector should decrease its involvement in the provision of housing, in the development of new communities and in the construction of new cities. Housing is better and more economically provided by the private sector. Investment in new communities and new cities programs consumes a large amount of resources per resident; any new investment should be contingent on a complete and satisfactory evaluation of already implemented programs.

7.20 The MOP-proposed cuts in investments would have a considerable impact on the programs of the ministries and authorities. Investments would have to be prioritized, with ongoing projects completed first; new and non-essential projects would have to be discarded or postponed.

**Table 7.2: Third Five-Year Plan Investments
in New Communities, Housing and Water and Sewage
(LE millions)**

Ministry & Authority	Preliminary Proposal By MOP	Requested By MDHPU	World Bank Recommendation	Final Plan Allocation
Ministries				
Ministry of Housing and Public Utilities (MHPU)				
NOPWASD	3,100.0	6,500.0	5,000.0	4,000.0
EOGCSP	2,153.3	2,676.0	2,153.3	2,154.2
GOCHC	0.0	16.0	5.0	7.9
Central Administration	130.0	313.0	130.0	183.0
Joint Project Organization	0.0	16.0	0.0	15.8
Public Housing ¹	775.0	875.0	100.0	775.0
Total MHPU	6,158.3	10,396.0	7,388.3	7,135.8
Ministry of Development and New Communities (MDNC)				
NLDA	2,040.7			
GOPP and Other	59.3			
Total MDNC	2,100.0	4,049.0	1,509.0	2,100.0
Total MDHPU	8,258.3	14,445.0	8,897.3	9,228.0
Authorities and Organizations				
New Cities' Authorities²				
Cairo Sanitary Drainage	584.0	1,447.0	1,100.0	684.0
Alexandria Sanitary Drainage	320.0	801.0	500.0	320.0
Cairo Water Supply	579.0	1,689.0	1,100.0	579.6
Alexandria Water Authority	218.0	500.0	218.0	218.0
Cairo Cleaning and Beautification	73.0	73.0	73.0	73.0
Giza Cleaning and Beautification	29.0	29.0	29.0	26.0
Total Authorities and Organizations	4,103.0	8,724.0	3,870.0	4,000.6
Grand Total	12,361.3	23,169.0	12,767.3	13,228.6

Source: MDHPU and MOP; World Bank staff.

¹ The investments in Public Housing are being made through the Housing Development Bank and are not specifically referred to in Third Plan documents or project listings.

² Under the jurisdiction of the Cabinet.

7.21 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Housing sector projects have not been reduced at all in FY93, and by less than LE 0.1 billion in both FY94 and FY95. Public utilities sector projects have been reduced by LE 1.0 billion in FY93, by LE 0.1 billion in FY94, and by LE 0.1 billion in FY95. At the ministry level, public investment programs have been reduced as follows. Ministry of Housing and Public Utilities: FY93, unchanged at LE 862.3 million; FY94, from LE 1167.3 million to LE 1072.3

million; FY95, from LE 1187.0 million to LE 1092.0 million. Ministry of Construction, including NCDA: FY93, from LE 342.1 million to LE 332.1 million; FY94, from LE 363.7 million to LE 343.7 million; FY95, from LE 373.0 million to LE 353.0 million. The Council of Ministers, whose budget includes investment by the new cities' authorities: FY93, from LE 565.3 million to LE 526.3 million; FY94, from LE 610.0 million to LE 585.0 million; FY95, from LE 617.0 million to LE 594.0 million. Local Administration, including governorate budgets and Cairo and Alexandria transport, water and wastewater authorities: FY93, from LE 926.0 million to LE 919.3 million; FY94, from LE 1025.3 million to LE 950.3 million; FY95, 1068.5 million to LE 993.5 million.

7.22 Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. These reductions in FY94 targeted investments include: the Gabal Asfar purification station (by LE 35.0 million); MHPU administrative buildings (by LE 5.0 million) and interest, compensations and insurance payments (LE 10.0 million); improved drainage (by LE 10.0 million); sanitary drainage projects in Port Said (by LE 11.0 million), Ismailiya (by LE 12.0 million) and Suez (by LE 12.0 million); Cairo ring road (by LE 10.0 million); El-Sharqiya border road (by LE 10.0 million); local development administration (by LE 5.0 million); development projects in 10th Ramadan (by LE 3.0 million), 6th October (by LE 11.0 million), Damietta (by LE 1.5 million), Badr (by LE 2.5 million) and Abour (by LE 2 million); reductions of LE 2.0 million for local administration in Cairo, Alexandria and Giza governorates, of LE 1.1 million in Sharqiya, and of LE 1.0 million in Port Said, Ismailiya, Suez, Qalubiya, Dakahliya, Damietta, Minufiya, Gharbiya, Kafr El-Sheikh, Beheira, Fayoum, Beni Sweif, Minya, Assiut, Sohag, Qena, Aswan, Matruh, El-Wadi El-Gadid, Red Sea, North Sinai and South Sinai governorates and El-Aqsar city; fleet modernization for Cairo Transport (by LE 30.0 million) and Alexandria Transport (by LE 10.0 million); and expansion of Cairo Water Utility's reservoirs (by LE 5.0 million).

B. New Communities Development Authority (NCDA) Programs

7.23 With the promulgation of Law no. 59 in 1979, new cities became an integral part of the Government's spatial development policies. The New Communities Development Authority (NCDA), under the jurisdiction of MDHPU, has the responsibility to select, acquire and develop sites for new communities and new cities in accordance with the general development plans of Egypt. Law 59 also provides for property tax exemptions for a period of 10 years from the completion date of a building, as well as measures and tax incentives to encourage investments in the new cities. The new cities are developed mainly on desert land belonging to the State that has been specifically allocated for the establishment of these cities.

7.24 The achievement of a demographic and spatial balance and the development of new urban communities and cities were the main objectives of the two previous five-year plans. The Third Five-Year Plan continues

to stress the importance of regional balance in the distribution of population and the enhancement of social and economic activities in the less developed governorates. NCDA programs envisage the creation of four main development axes to absorb the population from the Nile Valley: the east-west axis from the Libyan border to the east of the Sinai; the north-south axis from Port Said to Quseir on the Red Sea; and two vertical axes in the desert, from Alexandria to Giza and from the Mediterranean to the Oases and the New Valley.

7.25 Notwithstanding the past failure of the new communities to attract settlers in large number,⁴ the Government's further sponsorship of new communities could be justified provided that demographic, economic and financial considerations can demonstrate the viability of the proposed new developments. Nevertheless, in the Third Five-Year Plan, the limited investment funds that are available need to be restricted to completing the new communities already under construction. There is a great need to prioritize and redirect investments, concentrating the limited funds in those communities with the greatest potential to attract residents at the least cost. Investments in out-of-the-way, sparsely populated communities must be postponed. NCDA programs should advance cautiously and on an incremental basis to minimize investment risks during a time of severe budgetary constraints.

7.26 Moreover, the experience with current NCDA programs should be evaluated in an objective way to assess the impact of these programs on population, housing, industry, employment, production and investments. This assessment should be a precondition before embarking on large programs in new areas. The evaluation should be an in-depth, critical analysis, supported by solid research and data.

NCDA Investment Allocations within the Five-Year Plans

7.27 NCDA programs have already received LE 1.6 billion during the First and Second Five-Year Plans. MDNC originally requested LE 7.08 billion for the NCDA programs to be implemented during the Third Five-Year Plan, with LE 3.11 billion for the completion of ongoing projects and LE 3.97 billion for new projects (Table 7.3). The amount requested was subsequently reduced by MDHPU to a total of LE 4.0 billion, an amount which is still very large but more in line with NCDA implementation capabilities and the availability of funds. During the Second Five-Year Plan, the total allocation for NCDA programs was LE 0.96 billion, out of which only LE 0.77 billion was actually spent due to implementation constraints and delays in construction.

⁴ The National Urban Policy Study (financed by USAID) in 1982 analyzed government policies towards new communities and concluded that the available resources are not sufficient to implement all of the new communities programs, that the decentralization of the population will lead to a higher per capita investment, and that it would be difficult to induce population to move to the new communities. A rough estimate by NCDA of the current population of the new cities is 150,000 persons.

Table 7.3: Original Investment Levels Requested by MDNC and Final MOP Allocations for New Communities Programs, Third Five-Year Development Plan (by region; LE thousands)

Region	Original MDNC Proposal			Final Plan Allocations and Funding			
	Completion of Ongoing Projects	New Projects	Total Request	NIB	Self-Financing	Foreign Grants	MOP Allocation
Greater Cairo	741,000	239,900	980,900	271,000	0	330,000	601,000
Alexandria and North Coast	262,110	1,026,000	1,288,110	277,850	0	0	277,850
Sinai	1,340,500	1,420,000	2,760,500	519,500	0	42,000	561,500
New Valley	229,165	41,850	271,015	146,300	0	0	146,300
Red Sea	338,200	121,950	460,150	272,000	0	0	272,000
High Dam Lake	197,480	756,350	953,830	112,000	0	0	112,000
South Upper Egypt	0	89,500	89,500	0	0	0	0
Islamic Cairo	0	277,105	277,105	10,000	60,000	0	70,000
Total	3,108,455	3,972,655	7,081,110	1,608,650	60,000	372,000	2,040,650

Note: Total MOP allocations for MDNC programs are LE 2.1 billion.

Source: MDHPU Central Planning and Follow-Up Directorate.

7.28 MOP has allocated LE 2.1 billion to NCDA programs under the Third Five-Year Plan, an amount more in line with past NCDA implementation capabilities although more than twice the allocation during the Second Five-Year Plan. It is essential that these investments be directed towards the completion of ongoing projects in regions where investments could have the greatest impact, either because of population concentrations (greater Cairo) or the possibility of generating foreign exchange (as in tourist zones along the Red Sea and in parts of the Sinai). Investments in remote areas should be temporarily postponed. The World Bank staff estimates that investment requirements in areas of high population concentration (i.e., excluding remote areas) total LE 1.5 billion (see Table 7.4, below).

NCDA Projects Under Implementation

7.29 A project-by-project analysis of the 645 individual NCDA projects included in the final plan is beyond the scope of this review. The information on the proposed projects provided to the World Bank was in the form of a listing of proposals and an estimate of their costs.⁵

⁵ A complete list of projects is published by MDHPU. The listing includes the proposed works by region, the total cost, the amounts already executed during previous Five-Year plans, and the amounts requested by NCDA in the Third Five-Year Plan. No details, descriptions or justifications of individual projects are included. The number of projects is exceedingly large, though the cost does not exceed LE 30 million per project for most of the projects in this subsector.

7.30 The MOP investment allocation of LE 2.1 billion is more than sufficient to complete the roads, water and sewerage projects in Greater Cairo (LE 740 million), at the Red Sea (LE 295 million) and in part of the Sinai (LE 860 million). These projects, which account for 90 percent of MOP allocations, are discussed in the following paragraphs. The remaining LE 200 million is allocated for the completion of the ongoing priority projects along the north coast and in other ongoing NCDA programs. As previously mentioned, new projects in new remote development areas such as the New Valley and the High Dam region should be postponed and carefully evaluated before being approved.

7.31 Greater Cairo. The NCDA priority project in greater Cairo is the completion of about 33 kilometers of the Cairo ring road, considered the backbone of the structural planning for greater Cairo. The eastern part of the ring road has already been completed and is being extended to the airport; both the southern part in Giza and the western and northern portions are still under construction. The bridge over the Nile, which is part of the southern portion of the ring road, has been tendered. The total cost of the ring road is estimated at LE 1.045 billion, out of which about LE 245 million has already been invested and LE 740 million was requested by MDHPU for inclusion in the Third Five-Year Plan. Final plan allocation is LE 600 million. NCDA estimates the internal rate of return at 27.7 percent.

7.32 Red Sea Region. The main investments in the Red Sea region are a water line with a total length of 420 kilometers from Kreimat to Zafarana (total cost, LE 349.9 million; final allocation, LE 174.4 million) and the paving of about 145 kilometers of roads between Safaga, Hourgada and Sidi Shazli. Both projects are needed to serve the existing population, the industrial communities and, eventually, a part of the tourist zone being developed along the Red Sea. The results of economic feasibility analyses justifying these projects, if they have been performed, have not been reviewed by World Bank staff.

7.33 The Sinai. The priority NCDA investments in the Sinai are for the completion of already started roads, water and sewerage projects, including water supply lines to be completed at Qantara East, El-Arish (total cost, LE 341.5 million; final allocation, LE 80 million) and the second phase of the Abu Rudeis-Tour-Sharm El-Sheikh water line (total cost, LE 150 million; final allocation, LE 70 million) and the Hassanah-El-Qusaymah road (total cost, LE 222 million; final allocation, LE 100 million). Additional investments totalling about LE 400 million were recommended by NCDA to complete ongoing water lines, well drilling, sewage disposal, roads and electrical transformer stations at different parts of the Sinai; MOP has allocated LE 273.5 for other Sinai investments. Investments in the Sinai have the potential of increasing receipts from tourism as well as providing needed access roads, water and sewerage to the population of the area. Feasibility studies of the impact of such investments on tourism are needed. Table 7.4 (below) indicates the cost of the main NCDA projects in Cairo, the Red Sea and the Sinai.

7.34 Sources of Finance for NCDA Projects. As indicated in Table 7.3, the finance required for NCDA's program would be mainly through the National Investment Bank (LE 1,664 million, out of total NCDA investments of LE 2,100 million). MOP has indicated that the equivalent of LE 376 million would come from foreign loans, of which LE 330 million would finance parts of the greater Cairo ring road, and LE 42 million the drilling of new wells and ferry installations in the Sinai. LE 60 million, for projects in Islamic Cairo, would be self-financed.

Table 7.4: Final MOP Allocations for the NCDA Priority Programs (LE millions)

<u>Cairo Region</u>	600
Completion of Greater Cairo Ring Road	
<u>Red Sea Region</u>	194
Kreimat-Zaferana Water Line	
Safaga-Hourgada-Sidi Shazli Road	
<u>Sinai Region</u>	515
Gentara East Water Line	
El-Arish Water Line	
Abu Rudeis-Sharm El-Sheikh Water Line	
Hassanah Road	
Completion of Several Ongoing Priority Water Lines, Wells, Sewage and Electrical Projects in the Sinai ¹	
<u>Other Ongoing Priority Projects</u>	200
Recommended Total	1,509
<u>Other Projects²</u>	591
Total NCDA	2,100

Source: MDHPU and MOP; World Bank staff.

¹ MOP's final allocation for these projects is LE 257 million.

² Projects not considered priority projects by World Bank staff.

World Bank Recommendations

7.35 In summary, it is essential to concentrate investment funds in the most viable regional areas: Cairo (LE 600 million), the Red Sea (LE 194 million) and the Sinai (LE 515 million), as well as to complete several small ongoing priority NCDA projects (LE 200 million). Investments in remote development areas are not top priority; the potential for these areas to contribute to development and absorb large numbers of people is minimal due to a number of constraints, especially shortages of water. Moreover, the per capita cost for such development is high compared to the cost in more densely populated regions. Nevertheless, the total amount of LE 2.1 billion allocated in the final Third Five-Year Plan for NCDA programs is not unreasonable when compared to the original requests. The World Bank's recommended total is LE 1,509 million (see Table 7.4).

7.36 The emphasis on Cairo is appropriate because of the city's dominance in the economic activities of Egypt. The Cairo ring road should definitely be completed, as it will play a key role in diverting transit traffic from the Nile corniche road and parts of congested downtown Cairo. However, in order to make an informed decision on the feasibility of completing the southern, northern and western parts of the ring road and to assess the road's actual impact on traffic patterns within the greater Cairo region, it is essential to have a complete study of the ring road and the projected traffic flow and counts. Investments for the construction of the bridges and the completion of the western and northern parts of the ring road should commence only after this detailed impact study is performed. The study should evaluate the traffic patterns, the cost and expected rates of return, as well as the environmental impact of the road. The study should also assess the impact of the road on the adjacent agricultural land, which would inevitably be lost to urban development after the road was completed.⁶ It is not clear if the NCDA's estimate of the roads' internal rate of return (27.7 percent) takes into account the adverse impact on agricultural output.

C. New Cities

7.37 The Government considers the New Cities Program an integral part of its policies aimed at limiting the size of large metropolitan areas and at creating new urban outposts to attract the ever-growing population away from fertile agricultural lands. The new cities are to be self-contained and are designed to include industrial and commercial activities. The emphasis on new cities in the Third Five-Year Plan is a continuation of previous policies and investments during the First and Second Five-Year Plans. The creation of new cities has been entrusted to NCDA.

7.38 The New Cities Program has been controversial since its inception about 10 years ago; some experts are ardent defenders of the program while others are totally opposed to it. Given the large number of projects/programs (435 new cities' projects) a detailed assessment of the degree of success or failure of individual programs is not possible within the limitations of this report.⁷ However, it is clear that a number of Government policies and regulations inhibit the development of the new cities and need to be revised if these cities are to succeed.

⁶ According to the MOP data provided to the World Bank, only about 10 km (of a total length of 95 km) will pass through agricultural land. Moreover, MOP reckons that the ring road would encourage urban expansion towards the desert, particularly into areas situated behind the "Mokattam" hill.

⁷ A review and evaluation of the demographic, economic, financial and environmental aspects of new cities, along with an assessment of the economic feasibility of proposed investments, would need a detailed, extensive study that goes far beyond the resources and time available for this exercise. The intent of this report is to give a brief description of the new cities programs and MOP-allocated investments within the Third Five-Year Plan, as well as to formulate some priorities for these investments.

Listed below are some problems associated with these policies and regulations:

- 7.38.1 (i.) Rent controls in Cairo make it difficult for the new cities to attract residential population, as the rental of housing in Cairo is less of a financial burden than is the cost associated with housing accommodations in the new cities. In addition, transport subsidies further lower the cost of living in Cairo.
- 7.38.2 (ii.) Design standards and zoning regulations discourage mixed use and inhibit the development of small-scale businesses. Hence, the needs of a large group of middle- and low-income people who depend on such economic activities are not accommodated.
- 7.38.3 (iii.) Insufficient social and educational amenities reduce the attractiveness of the new developments, thereby discouraging people from moving to the new communities.
- 7.38.4 (iv.) Existing housing types and standards are too high in relation to the income of the potential population. Densities are too low, while the dispersal of settlements within each new city contributes to a high cost of infrastructure and forces the population to depend on automobiles. The new cities' design is, in general, inimical to pedestrians.
- 7.38.5 (v.) Selling developed land and housing units at below market value and often at subsidized prices attracts speculative purchase that has led to the acquisition of housing units and land plots as a hedge against inflation. Property-based taxation would encourage a better use of empty apartments and plots.
- 7.38.6 (vi.) The new cities' administrative authorities do not have the power to institute changes or to be more responsive to the needs of the inhabitants. They cannot raise local funds and are not accountable to the population of the new cities.
- 7.39 The implementation of new cities has advanced to such a degree that it would be difficult to curtail further development. Furthermore, the Government's emphasis on the creation of new cities appears to have some merits in the long run: the new cities are located on desert land thus helping to reduce the loss of agricultural land; they provide serviced land for the establishment and expansion of industrial parks; and they would eventually absorb about 4 million

people,⁸ according to Government estimates. Despite the advanced state of implementation, it is still possible to reallocate some of the investments and financial resources to those new cities where such investments could be more efficiently utilized, particularly to complete projects in those new cities built during the First Five-Year Plan.

7.40 NCDA constructs two types of new cities: freestanding cities and satellite cities. Freestanding cities, such as Sadat City and 10th of Ramadan, are located far from developed urban areas. Their initial capital investment costs are high; attracting businesses and settlers to relocate there is difficult without subsidies and incentives. Satellite cities or communities, such as 15th of May and 6th of October, are easier to justify because their location near urban agglomerations (primarily Cairo) makes them less expensive to develop and better at attracting population and businesses. These cities could, in the long run, help alleviate the problems associated with housing shortages.

New Cities Allocations Under the First and Second Five-Year Plans

7.41 Investments in new cities have already totalled more than LE 3.0 billion during the First and Second Five-Year Plans. Up to June 1991, the total investments for those new cities begun during the First Plan - 10th of Ramadan, Sadat City, 15th of May, 6th of October, Bourg El-Arab, and Salhiah - reached a total of LE 2.5 billion. The largest share of investment, over 37 percent, was allocated to public housing either through direct budgetary contribution or through subsidized loans, followed by 28 percent for main infrastructure and 19 percent for secondary infrastructure (Table 7.5).

7.42 Investments for new cities begun during the Second Five-Year Plan - New Damietta, El-Obur, Badr, New Nubariya, New Minya and New Beni Sweif - are indicated in Table 7.6. The allocations of invested funds among the different categories indicate again the predominance of investments in housing, followed by main infrastructure and secondary infrastructure. Investments for the "third generation" of new cities have not yet started, except for the site in Katamieh. These cities could comprise Achmim/Sohag, New Assuan, Shourouk, Katamieh, Sheikh Zaid and a number of projected settlements around greater Cairo.

⁸ The Government's estimate of the new cities population assumes that four million persons would be absorbed by the new cities by the end of the century; the estimate appears to be optimistic if judged by the growth of the new cities during the past 10 years. The World Bank has been unable to obtain a current estimate of the present population in the new cities. It appears that the new cities were not counted as a separate entity in the last census (1986), mainly because the cities were sparsely populated and still in the very first stages of implementation. A rough estimate of the existing population in the new cities after 10 years is 150,000.

**Table 7.5: Cost of Completed Works up to June 1991
New Cities Started during First Five-Year Plan
(LE thousands)**

	10th of Ramadan	15th of May	Sadat City	Bourg El-Arab	6th of October	Salhiah	Total	Pct. of Total
Main Infrastructure	193,241	117,556	43,449	87,694	242,050	22,773	706,763	28.1
Secondary Infrastructure	95,241	47,710	90,634	55,944	173,066	17,417	480,012	19.1
Services	47,484	116,425	60,035	25,763	50,309	5,002	305,018	12.1
Housing	201,441	257,274	118,730	100,260	266,571	0	944,276	37.5
Landscaping	10,651	4,027	11,308	5,166	4,297	753	36,002	1.4
Other Services	3,217	10,096	1,191	1,141	1,065	0	16,710	0.7
Studies	5,807	3,794	10,072	3,552	5,034	672	28,931	1.1
Total	557,082	556,882	335,419	279,520	742,392	46,617	2,517,712	100.0

Source: NDHPU.

**Table 7.6: Cost of Completed Works up to June 1991
New Cities Started during Second Five-Year Plan
(LE thousands)**

	New Damietta	Nubariya	Obur	Badr	Beni Sweif	Minya	Total	Pct. of Total
Main Infrastructure	36,772	9,966	20,150	14,089	24,347	8,347	113,671	19.9
Secondary Infrastructure	44,884	1,312	11,735	19,628	15,162	7,338	100,059	17.5
Services	23,748	2,108	3,204	1,095	3,112	76	33,343	5.8
Housing	83,304	19,505	57,433	34,432	33,223	6,076	233,973	40.9
Landscaping	565	33	775	124	740	92	2,329	0.4
Other Services	5,736	29	74,718	383	722	1,484	83,072	14.5
Studies	2,487	135	520	918	591	417	5,068	0.9
Total	197,496	33,088	168,535	70,669	77,897	23,830	571,515	100.0

Source: NDHPU.

New Cities Projects Under Implementation

7.43 NCDA proposed investments in the Third Five-Year Plan are for roads, water supply, sewage disposal, telephone and communication, electricity networks and transformer stations. Education, health, community facilities, agriculture and landscaping are also included. The cost of each of the individual projects in the investment program within each city is small, rarely exceeding LE 60 million. Table 7.7 indicates the investments allocated under the Third Five-Year Plan (LE 2.1 billion) and those requested by NCDA (LE 4.0 billion) for the new cities. This allocation would be sufficient to complete all ongoing projects in those new cities begun during the First Plan as well as ongoing priority projects in cities begun during the Second Plan (Beni Sweif, New Damietta and Badr) where implementation is considerably advanced. Since new cities programs are implemented in phases, completing only the ongoing projects will not have detrimental effects

on the operation of the new cities. Specifically, LE 1.4 billion has been allocated for the completion of ongoing projects and LE 0.67 billion for new projects. Table 7.8 (following page) gives the breakdown of investment estimates up to the end of 1991 for the implemented components of the city of 10th of Ramadan; this table is presented here only as an example of the nature and composition of investments in the new cities.

Table 7.7: New Cities Program
Investment Funds Allocated by MOP under the Third Five-Year Plan
and Funds Requested by NCDA
(LE thousands)

City	Financing		Completion of Ongoing Projects	New Projects	Total MOP Allocation	Amount Requested by NCDA
	Local Funds	Foreign Funds				
10th of Ramadan	198,000	32,000	170,000	60,000	230,000	721,619
15th of May	75,000	5,000	30,000	30,000	80,000	262,443
Sadat	97,000	3,000	90,000	10,000	100,000	157,100
6th of October	197,500	40,000	207,500	30,000	237,500	378,800
Bourg El-Arab	0	0	0	0	0	226,850
Saihih	30,000	0	20,000	10,000	30,000	172,000
New Damietta	120,000	0	120,000	0	120,000	228,120
Ameria	146,000	4,000	150,000	0	150,000	0
Beni Sweif	80,000	0	22,000	58,000	80,000	279,527
Minya	38,700	1,300	15,300	24,700	40,000	67,950
Assiut	10,000	0	0	10,000	10,000	0
Damietta Port	30,000	0	27,700	2,300	30,000	0
New Sohag	5,000	0	0	5,000	5,000	5,000
New Assuan	5,000	0	0	5,000	5,000	5,000
Other Cities	374,567	25,433	0	400,000	400,000	850,000
General Administration	582,500	0	582,500	0	582,500	830,177
Total	1,989,267	110,733	1,435,000	665,000	2,100,000	4,185,006

Source: MDHPU Central Planning and Follow-Up Directorate; MOP.

Note: Other Cities includes the following (amounts in LE thousands): Badr (79,750); Obur (115,000); Sheikh Zaid (40,000); Nubariya (14,663); Shourouk (50,000); Katamieh (40,000); and two developments around Cairo (61,480).

Sources of Finance for New Cities Programs

7.44 The new cities are financed through government allocations, the sale and rental of property belonging to NCDA, revenues from commercial operations in the cities and loans from the National Investment Bank (NIB) for infrastructure and from the Housing and Development Bank (HDB) for housing. Within the Third Five-Year Plan, all investments are locally financed, except the equivalent of LE 13.4 million, which would be provided in foreign exchange funds as a grant from Finland for the Badr new city.

**Table 7.8: Cost of Implemented Components
for the City of Ajlun of Ramadan
Through June 1991**

Item	Cost in LE thousand	As percent
Studies	5,807	0.86
Main Infrastructure		
Roads	30,672	5.17
Water Supply	62,174	10.49
Sewage	38,101	6.43
Electrical	66,952	11.29
Communication	4,892	0.83
Subtotal, Main Infrastructure	202,771	34.21
Secondary Infrastructure		
	103,270	17.42
Services		
Public Services	2,095	0.35
Education	13,380	2.26
Health	14,478	2.44
Commercial	15,485	2.61
Cultural and Religious	1,420	0.24
Administrative	2,412	0.41
Agriculture and Landscaping	11,271	1.90
Others	3,375	0.57
Subtotal, Services	63,916	10.78
Housing	217,036	36.61
Total	592,782	100.00

Source: NCDA.

World Bank Recommendations

7.45 As the new cities programs started over 10 years ago, it is essential to review and evaluate the achievements of the program before committing large investment funds to new programs. The effects of the new cities on population decentralization, housing and industry must be carefully evaluated. It is not sufficient to enumerate the physical production and achievements, i.e., the number of new housing units constructed or new roads, water and sewerage lines completed. A full evaluation of the first generation of cities should be performed from an economic, financial and social point of view. It is also important to evaluate the performance of the newly created industrial parks and the cost effectiveness of their associated subsidies. The policies towards housing construction and loan subsidization in new cities must also be critically assessed. New programs should be curtailed until the existing cities are amply evaluated and existing infrastructure fully utilized. Additional new cities should be constructed only where an economic base exists and where the cities have a comparative economic

advantage, demonstrated by the private sector's willingness to invest in housing, services and industry.

7.46 Given the above consideration, and taking into account the investment already sunk in the new cities as well as the economic situation of the country, it is recommended as a matter of urgency that a framework be established that would allow the continued development of the new cities solely on the basis of their potential comparative advantage. It is, therefore, essential to:

- 7.46.1 (i.) Adopt zoning regulations that are more responsive to the needs of the potential inhabitants. Planning regulations should be changed to respond to incremental growth generated by the demands and preferences of the inhabitants. Zoning should not discourage less formal economic activities and should be led by demand rather than by incentives.
- 7.46.2 (ii.) Reduce subsidies to transport, housing and industry. The new cities cannot continue to be sustained by subsidization. Moreover, subsidies discourage movement from cities such as Cairo.
- 7.46.3 (iii.) Modify the design of new cities in a way that reduces Government investment and adopt standards that will encourage construction of housing by the private sector at a cost closer to the income of potential inhabitants.
- 7.46.4 (iv.) Increase density to reduce the cost of infrastructure and to lessen the dependency on cars.
- 7.46.5 (v.) Allow the administrative authorities of the new cities to operate in an entrepreneurial spirit, in accordance with the actual desires and needs of the inhabitants. The authorities should have sufficient autonomy to adapt new cities' plans in response to changing circumstances and they should be financially autonomous, allowed to raise funds and make expenditures on items that would stimulate the new city as a community and, thereby, enhance its social and economic functions.
- 7.46.6 (vi.) Institute cost recovery procedures to relieve the burden on Government budgets and to allow the transition to self-financing.

7.47 The Third Five-Year Plan allocation of LE 2.1 billion to new cities programs should not be exceeded. It is recommended that priority be given to the completion of ongoing projects within those cities begun during the First Five-Year Plan and where large sums (LE 2.5 billion) have already been expended. The completion of these ongoing works (for

a total of about LE 518 million⁹) would minimize the losses of leaving infrastructure systems only partially operational in the six cities begun during the First Plan and would ensure that their development proceeded with less contribution from the Government. The completion of ongoing projects in cities begun during the Second Five-Year Plan (at an estimated cost of about LE 335 million) should proceed only after conducting feasibility studies and only in economically and financially viable communities. Furthermore, these investments should be undertaken in incremental portions so as to keep within the funds available. Investments should be targeted to those cities with the capacity to create the most jobs in manufacturing, construction and services at the least cost. It is also important to limit Government investments to areas where the private sector is unwilling to invest, such as for the provision of infrastructure networks. The construction of houses, which consumed the largest percentage of investment in previously implemented programs, and commercial markets and other revenue-producing projects should primarily be the responsibility of the private sector, which is better suited than the public sector to such endeavors.

7.48 Experience with new cities in the last 10 years has shown that government efforts alone are not sufficient to develop the new cities. Motivating the private sector to participate more fully in the activities of the new cities is essential to further development. Efforts to increase cooperation between the public and private sector and to remove public sector administrative and regulatory constraints are essential for such participation to materialize.

7.49 Investments in a "third generation" of new cities should be stopped completely or slowed down substantially. Concentrating investments on completing projects in those cities already under construction and where large sums have already been expended is likely to yield the highest returns. Starting new developments with insufficient demographic, economic and financial analysis is risky and may lead to the inefficient use of very limited investment resources.

D. Housing

7.50 The availability of affordable dwellings is a major problem, especially in metropolitan Cairo. The problem is intensified by excessive land and building costs, limited available long-term formal finance, rent control, the lack of affordable serviced land, the low productivity of construction companies and the lack of maintenance on the existing housing stock. There are also tremendous distortions in the housing market. There is insufficient affordable housing for the low-income segments of the population, while, at the same time, there are an estimated 1.8 million vacant units. This phenomenon is partly a

⁹ Amount needed to complete priority ongoing projects in First Five-Year Plan new cities according to MOP (see Table 7.7). MOP has also allocated LE 160 million for expansion and new projects in those six cities begun during the First Plan. NCDA had requested a total of LE 1.9 billion for these six cities.

result of the rent control law that discourages owners of rental units from offering their housing units for rent and the early boom in housing investments, which was considered as a hedge against inflation and was fueled by the scarcity of other investments venues.

7.51 About 95 percent of the new houses are constructed by the private sector. The remaining 5 percent are constructed by MDHPU, the governorates, cooperative societies and public sector companies; most are sold at subsidized terms to their beneficiaries.¹⁰ Government subsidies (through low interest loans and selling of units below their production cost) to low- and middle-income earners constitute a large drain on the budget and cannot continue given the tight budgetary situation.

7.52 MDHPU carried out a study on housing requirements¹¹ that concluded that 1.5 million new housing units would be needed during the Third Five-Year Plan. It also indicated that private sector investments in housing construction would decrease during the Third Five-Year Plan period to about 60 percent of the requirements (900,000 units). Investments in housing would become less profitable because of the distortions in the market (rent control, the scarcity of serviced land, high construction prices, the opening of other more profitable areas for investment and high interest rates on deposit that contribute to a diversion of funds away from the housing sector). The study also indicated that the public sector would fill the gap by constructing 600,000 units. However, public sector construction may not be able to meet this shortfall for several reasons: the changing attitude of the Government towards public housing construction, an overall lack of funds and institutional constraints impeding the ability of MDHPU to construct such a large number of housing units. During the Second Five-Year Plan, a period when financing was available and the official policy of the Government encouraged public sector participation in housing, the public sector managed to construct only 47,496 units.

7.53 Private sector investments are mainly directed either to middle-income housing, financed through private savings, the proceeds of advance sales and indirect government subsidies, or expensive houses built for sale, which offer greater financial return. The market fails to provide affordable new rental units for the low-income population or to maintain the existing stock of apartments in satisfactory condition. Lack of maintenance and the resulting deterioration of the rental stock is evident in all categories of housing and is becoming the norm.

¹⁰ According to MDHPU statistics, public housing units are the units belonging to or added to its stock of housing units. The units constructed by the public sector companies for private sector use are considered "private" housing. This method of categorization accounts for the low percentage of "public housing." In reality, the public sector involvement in housing is far greater than the statistics indicate.

¹¹ Reference is to an internal study of MDHPU that assessed housing needs during the Third Five-Year Plan period. The World Bank has only been given the figures relating to the number of housing units expected to be constructed by the public and private sectors during the plan period.

7.54 The private sector has become reluctant to engage in the construction of new rental houses, which can only lead to a worsening of the housing situation. This situation must be reversed.

Housing Investment in the Third Five-Year Plan

7.55 The number of constructed housing units and the investments by both the private and public sectors during the First and Second Five-Year Plans, as well as the anticipated investments for the Third Five-Year Plan are indicated in Table 7.9.

Table 7.9: Number of Housing Units and Investments in Housing During the Five-Year Plans (investments in LE million)

	Number of Units				Investments			
	Private Sector	Public Sector	Total	Percent Public	Private Sector	Public Sector	Total	Percent Public
First Five-Year Plan	772,592	39,808	812,400	5	5,266	1,023	6,289	16
Second Five-Year Plan	921,804	47,496	969,200	5	11,879	583	12,462	5
Third Five-Year Plan	1,092,000	58,000	1,150,000	5	17,760	775	18,535	4

Source: MOP and MDHPU.

7.56 Total investments in housing (public and private) as a percentage of the five-year plans, have remained constant at between 11 and 12 percent (Table 7.1). Private sector investment accounts for about 96 percent of that amount, while public sector investment accounts for only 4 percent. During the Second Five-Year Plan, the total public and private investments in housing amounted to LE 12.5 billion. The total investments envisaged for housing (urban and rural) during the Third Five-Year Plan are about LE 18.5 billion, which is equivalent to roughly 12 percent of total investments of the plan. Public sector investments, on the other hand, have been decreasing as a percentage of total housing investments. Although the Government is reducing its involvement in the construction of housing, it has not yet addressed sufficiently those issues related to the liberalization of the housing market necessary for the creation of an atmosphere favorable to private sector participation and involvement, especially in the areas of rental units and low-income housing.¹² Government intervention has, therefore, been unsuccessful in resolving housing problems.

7.57 The Third Five-Year Plan allocated LE 775 million to public investments in housing. Nevertheless, the actual burden on the budget is much greater, due to the direct and indirect subsidies received by

¹² Under the second phase of its reform program, supported by the World Bank, the Government is considering to decontrol rents on vacant and new buildings and on housing by end-June 1994 and to begin decontrol of older housing units in phases, starting by end-December 1994.

the housing sector through low interest loans provided through the Housing and Development Bank (HDB).

7.58 The estimate of the number of housing units to be constructed and the investments by the public and private sectors are indicated in Table 7.10. It should be noted that the figures in Table 7.10 do not give an accurate picture of the burden on the government budget because housing units built by the public sector and sold to the private sector are considered as private sector investments. The Government statistics do not provide a separate account for such housing. These residences are mostly sold to the private sector at subsidized prices and below market rates.

**Table 7.10: Proposed Housing Units and Investments
During the Third Five-Year Plan
(units in thousands; LE millions)**

	Public Sector		Private Sector	
	Units	Investment	Units	Investment
Urban Housing				
Low Cost ^a	53	700	697	8,811
Average Cost ^b	0	0	230	4,819
Above Average Cost ^c	0	0	70	2,800
Subtotal, Urban	53	700	997	16,430
Rural Housing	5	75	95	1,330
Total	58	775	1,092	17,760

Source: MOP.

^a LE 13,000 average.

^b LE 21,000 average.

^c LE 40,000 average.

Sources of Finance for Public Housing

7.59 Public sector financing of housing is through the following sources: (i.) the Housing and Development Bank (HDB)¹³; (ii.) the National Investment Bank (NIB); (iii.) self-financing through downpayments and reserve budgetary allocations; and (iv.) local and foreign loans. HDB loans are granted at an interest rate not exceeding 6 percent for a maximum term of 30 years with 3 years of grace. The loans are provided to governorates, companies, housing cooperatives and individuals to construct low- and middle-income housing units. HDB also channels funds to finance housing construction developed by NCDA and

¹³ HDB was established as a joint-stock company under Law No. 43. Both NCDA and the Low-Cost Housing Fund shared in its establishment.

GOCHC.¹⁴ The interest rate charged by HDB for its "soft loans" for construction of housing is 13 percentage points below the present prevailing market rates of about 19 percent. It is difficult to calculate the burden on the budget arising from the interest rate subsidies due to the lack of statistics, the numerous institutions involved and the changing inflation rates. MOP estimates the interest rate subsidies to housing through the "soft loans" to be about LE 650 million per year.

World Bank Recommendations

7.60 The scarcity of serviced land available for development is a major factor in the high cost of housing in Egypt. The Government and MDHPU should concentrate their efforts on the provision of infrastructure to service more land and the development of small plots within and near the population centers. Construction of most dwellings should be left to the private sector. Moreover, the acceptance by the Government of housing solutions similar to those produced by the informal market is a prerequisite for the production of affordable housing for the poorer segments of the population. It is also essential to rationalize the existing regulations and standards used in housing construction to reduce costs.

7.61 The Government should reduce its involvement in the construction of public housing, further reduce its investments and limit these investments to the poorest segments of the population. The private sector is better able to provide housing so long as the investment climate is favorable and the obstacles to its participation are removed.

7.62 Housing loans and interest rate subsidies should be reduced, as they constitute a huge financial burden on government finance and contribute to distortions in the housing market. All loans for average and above-average housing should be subject to the prevailing market interest rates. Only loans to low-cost housing should be assisted through government subsidies, provided that the assistance is transparent and well targeted.

7.63 The allocation of LE 775 million to housing in the Third Five-Year Plan should be reduced to about LE 100 million. This amount should be earmarked by MDHPU to construct low-cost housing for emergency cases and for the extremely poor (about 8000 units). Other low-income housing needs should be met by targeting subsidized loans to those segments of the population most in need, and by rental units provided by the informal sector.

¹⁴ The General Organization for Construction and Housing Cooperatives (GOCHC) was established in 1971 with the following objectives: to establish the policies for housing cooperatives societies, to supervise their activities and to provide subsidized loans for the construction of dwellings. Since 1987, GOCHC has constructed subsidized low-income housing units. These units are financed primarily through government-subsidized loans, the savings of individual members and the savings of cooperative societies.

7.64 In summary, it is essential to (i.) provide the necessary incentives to increase the private sector's involvement in the construction of houses by increasing the supply of affordable serviced land and small plots to individual buyers; (ii.) increase the availability of construction material; (iii.) relax rent control legislation (the immediate removal of controls on vacant units and new construction, and the gradual removal of controls affecting other categories of rental units is highly desirable); (iv.) encourage private sector investment in housing by mobilizing savings and establishing financial institutions and mechanisms to provide the private sector with long-term loans for housing construction; (v.) rationalize standards and ease regulations; and (vi.) reduce the Government's involvement in the construction of housing and limit interest rate subsidies and investments to the poorest segments of the population. With the liberalization and reform of the housing market, much of the estimated 1.8 million vacant units would be available for occupancy, thus helping to relieve the shortage and reducing the need for additional government investment.

E. Water and Wastewater (Sewerage)

7.65 Most of the urban population (90 percent) have access to piped water (either directly connected or from standpipes). In rural areas, only 45 percent have similar access and the quality of the water provided is much inferior to that in urban areas. The provision of sewerage is less adequate (50 percent in urban areas and a mere 3 percent in rural areas). Table 7.11 indicates the percentage of the population served by water and sewerage by main region of the country.

Table 7.11: Population Served by Water and Sewerage by Region

Region	Population		Percent Served	
	Million	Percent	Water	Sewerage
Cairo	12.0	22.1	95	70
Alexandria	3.3	6.1	98	40
Canal Cities	1.1	2.0	96	35
Other	8.5	15.7	80	30
Subtotal, Urban	24.9	45.9	90	50
Rural	29.3	54.1	45	3
Total	54.2	100.0	65	24

Source: World Bank, Arab Republic of Egypt: Water Sector Report, 1992.

7.66 Population increases and industrial development have led to the ever-worsening pollution of the Nile drainage canals, where the wastewater is discharged mostly without treatment. The situation is becoming extremely dangerous, especially for the rural population, who

frequently use the canals in their daily chores. The discharge of wastewater in the drainage canals constitutes an immediate health and environmental danger. Effort and investments to provide water and sanitation services throughout Egypt are essential to avert such danger. All investments have to be conducted within the context of a comprehensive plan for pollution control.

7.67 Water and wastewater distribution systems are subject to serious leakage, thus increasing the loads on both the water and sewerage treatment facilities. Moreover, low rates charged for consumption, poor metering and inadequate billing to consumers encourage the excessive consumption of water. Cost recovery through water tariffs is insufficient even to recover the operation and maintenance costs.

7.68 Despite the LE 3.3 billion invested during the First Five-Year Plan and LE 8.7 billion during the Second Five-Year Plan to upgrade the water and sewerage networks, the level of services is still inadequate. Services are barely able to keep up with existing levels of demand and the pressures of a rapidly increasing population. Table 7.12 indicates the total amounts of previous investments by region during the First and Second Five-Year Plans.

**Table 7.12: Investments in Water and Wastewater
During the First and Second Five-Year Plans
(LE millions)**

	Water	Wastewater	Total
Greater Cairo	800	4,100	4,900
Alexandria	300	600	900
Other Regions	3,800	2,400	6,200
Total	4,900	7,100	12,000

Source: MOP.

7.69 MDHPU, along with the authorities and organizations under its jurisdiction, is responsible for providing water and wastewater services. The principal institutions involved in the sector are: (i.) the National Organization for Potable Water and Sanitary Drainage (NOPWASD), responsible for planning and the management of services in all governorates except for greater Cairo, greater Alexandria, and the Canal cities; (ii.) the Executive Organization for Greater Cairo Sewerage Project, responsible for sewerage disposal and treatment projects in the greater Cairo region; (iii.) the General Organization for Greater Cairo Sanitary Drainage; (iv.) the General Organization for Cairo Water Supply; (v.) the General Organization for Alexandria Sanitary Drainage; (vi.) the Alexandria Water Authority; and (vii.) local water and sewerage authorities in cities like Suez and Port Said.

7.70 It is estimated that in order to maintain the current level of water and sewerage services during the Third Five-Year Plan period, new services capable of coping with an additional 6.0 million people and 2.8 million people, respectively, would be needed. The Third Five-Year Plan aims to provide water service to 85 percent of the total population and to provide sewerage services to control pollution and health hazards.

Water and Wastewater Investments

7.71 Investments in the sewerage sector are predominantly directed towards upgrading existing sewerage systems (networks and pumping stations) and the provision of sewerage treatment facilities. The poor state of the water and sewerage network, plants and facilities clearly demonstrates that sufficient resources have not been devoted to proper operation and maintenance. The allocation of more resources to the maintenance, upgrading and upkeep of the system is essential.

7.72 The Second Five-Year Plan allocated LE 8.7 billion, and the Third Five-Year Plan would allocate about LE 10 billion, to the water and wastewater sectors (water provision, sewerage treatment and disposal), which is not sufficient to provide all the necessary new services or keep up with the increase in the population. The amount of investment is still large enough, however, to raise doubts about sustainability if the performance and managerial capabilities of the responsible institutions and the operation and maintenance of the water and wastewater systems are not improved. Better recovery of the operating costs related to water services and the establishment of a mechanism for the recovery of the cost of sewerage services is an essential element for ensuring the proper operation and maintenance of the system.

7.73 The allocated investments are distributed among subsectors as follows: LE 3.6 billion (36 percent) for water; LE 6.3 billion (62 percent) for sewerage networks, disposal and treatment plants; and LE 0.2 billion (2 percent) for other purposes. Geographically, about 58 percent of all investments are allocated to Cairo and Alexandria, where about 30 percent of Egypt's population is concentrated; only about 42 percent of investments are allocated to the rest of the country, where some 70 percent of the population resides. The distribution of investments, therefore, raises the question of equity between serviced and unserved areas. (The Third Five-Year Plan investment allocations for each authority involved in the water and wastewater sectors and the corresponding amounts requested by MDHPU, have been indicated in Table 7.2.)

7.74 In order to keep up with the investment constraints, priority in the provision of services should be given to large cities and villages and to areas where the environmental hazards are greatest, as well as to the completion of projects already started. Servicing

scarcely populated areas and new urban remote extensions should be postponed temporarily.

Investments for Water and Wastewater Projects by NOPWASD

7.75 The total investment requested by NOPWASD for its water subsector program is LE 3,116.15 million distributed as follows: LE 484.5 million for replacement and renovation; LE 1,111.65 million for completion of ongoing projects; and LE 1,520 million for new and expansion projects. The investment requested for the wastewater disposal programs amounts to LE 6,761.90 million, out of which LE 412.2 million is for the replacement and rehabilitation of existing systems; LE 4,843.70 million for the completion of ongoing works; and LE 1,496 million for new or expansion works (see Table 7.13). The investment for each of the proposed projects within the program is small, seldom reaching LE 50 million per project, except for Ismailiya and the Suez Sewerage Station, which require LE 337 million and LE 367 million, respectively.

Table 7.13: Investments Requested by NOPWASD for Water and Wastewater (LE millions)

	Requested Investment	Local Funds	Foreign Funds
Water Projects			
Rehabilitation and Renovation	484.50	484.50	0.00
Completion of Ongoing Projects	1,111.70	634.90	476.80
New Projects	1,520.00	1,313.00	207.00
Subtotal	3,116.20	2,432.40	683.80
Wastewater Projects			
Rehabilitation and Renovation	412.20	412.20	0.00
Completion of Ongoing Projects	4,853.80	2,912.60	1,941.20
New Projects	1,496.00	871.40	624.60
Subtotal	6,762.00	4,196.20	2,565.80
Total Requested Investments	9,878.20	6,628.60	3,249.60

Source: NOPWASD.

7.76 NOPWASD investment allocations were based on perceived project needs.¹⁵ (Table 7.14 summarizes the requested investment levels.) MDHPU reduced the total amount to LE 6.5 billion, an amount more in line with the available funds. MOP then introduced a further cut and allocated only LE 4.0 billion to NOPWASD, to keep the amount

¹⁵ NOPWASD has listed by governorate the projects it envisions during the Third Five-Year Plan. The list includes the total cost, the expected investments during the first year of the Third Five-Year Plan and the total investments during the Third Five-Year Plan.

within its total investment resources. (However, the World Bank staff have not been able to review the feasibility studies to determine whether the intended investments (or the proposed reductions) are justified.) A breakdown of the amount of reduced allocations for each project was also not available, which makes it impossible to individually evaluate the 294 NOPWASD investments included in the final plan.

Table 7.14: Main Elements of Investments Requested by NOPWASD for Water and Wastewater in the Third Five-Year Plan (LE millions)

Water Projects	
Rehabilitation and renovation of 70 water treatment plants and 1700 filtering stations	484.50
Construction of 13 new water treatment plants, networks and pumping stations at different governorates	720.00
Extension of 22 water supply and treatment plants, water networks, storage tanks and pumping stations in several governorates	196.25
Construction of 16 new water treatment plants	800.00
Completion of 10 water treatment plants	460.40
Local industrialization of 300 water filtering units and 2500 pumping units	455.05
Subtotal, Water Projects	3,116.20
Sewerage Projects	
Rehabilitation of 18 sewerage pumping plants	412.20
Wastewater disposal projects and pumping stations at different governorates	3,782.70
Second phase of sewerage project for Suez, Port Said and Ismailiya	1,071.00
New sewerage system projects, including pumping stations, 29 oxidation ponds and systems for 36 villages	1,496.00
Subtotal, Sewerage Projects	6,761.90
Total, Water and Wastewater	9,878.20

Source: NOPWASD proposal for the Third Five-Year Plan.

7.77 It appears that the total amount allocated by MOP, LE 4.0 billion, of which LE 2.32 billion is for completion of ongoing projects, is not sufficient. NOPWASD estimated that project completion would

require about LE 5.9 billion. In addition, an increase in MOP allocations of about LE 1.5 to 2 billion would enable NOPWASD to better serve the increasing population, reduce the health and environmental hazards associated with poor water and wastewater services and complete its ongoing projects.

Investments by Executive Organization for Greater Cairo Sewerage Projects (EOGCSP)

7.78 EOGCSP is the authority responsible for constructing the huge wastewater projects serving greater Cairo. It is involved in:

7.78.1 (i.) a rehabilitation program to improve the performance of Cairo's existing wastewater system. The foreign component of the program was financed by USAID. The investment for the program amounted to LE 38 million and US\$95 million. The works are almost complete and have contributed to dramatic improvement to Cairo's existing waste water systems;

7.78.2 (ii.) the East and West Bank Greater Cairo Sewerage Projects, which include main and branch sewage collector tunnels, culverts, pumping stations, sludge lagoons and treatment plants. The East Bank projects are mainly financed by the British ODA and, to a smaller extent, by USAID and the Italian Government, while the West Bank projects are partially financed by USAID. The projects on the East Bank are estimated to cost LE 860 million, pounds sterling 320 million, and US\$58.0 million, while the West Bank projects (excluding the still unestimated costs of the pyramids collector, the Abu Rawash stations and the Cheops pumping stations) are estimated to cost LE 26 million and US\$427.3 million. The projects are to help transport wastewater from the Cairo region to proper treatment plants and provide branch collectors to areas lacking proper sewerage disposal systems; and

7.78.3 (iii.) the Helwan Sewerage Project, which includes a main sewage collector, pumping stations and treatment plants. The project is a continuation of the sewage system serving the southern part of greater Cairo and extends from Maadi to the south for 26 kilometers. It will serve the industrial zones, the new city of 15th of May and a population of about one million people. The project's total cost is estimated at the equivalent of LE 523 million, out of which works costing LE 230 million have been completed. The project's foreign components are estimated to cost DM 91 million, 19 million Italian lire, and 9 million Dutch gilder and are to be financed by the EEC, the Italian Government and the Dutch Government.

7.79 All the wastewater projects being implemented within the greater Cairo region are essential for servicing a large metropolitan area such as Cairo. The Third Five-Year Plan has allocated LE 2.15 billion to EOGCSP for these projects. The investments are intended to complete the treatment plants at Gabal Asfar, Belquis, Bahtim and Abu Rawash; they will finance 37 kilometers of main collector lines and 93 kilometers of branch lines. The investments will also complete the second phases of the sludge lagoons at Gabal Asfar and the pyramids sewerage lines and branch tunnels in different regions of greater Cairo. Final allocations are almost the same as those requested by MDHPU; these allocations are indispensable to completing the ongoing phases of the greater Cairo sewerage project.

Local Organization Projects

7.80 The water and wastewater projects in Cairo and Alexandria are implemented in Cairo by GOGCWS and GOGCSD, and in Alexandria by AWA and AGOSD (para. 7.17). MOP has allocated LE 1.8 billion for these projects. The projects include sewage networks, pumping stations, water networks and wastewater pipelines. The projects are generally small and cover a full range, including the completion of ongoing works, the extension of networks, and the replacement and renovation of existing facilities. A sample of the projects to be implemented by the Cairo Sanitary Drainage Organization, and their costs, are indicated in Table 7.15. The projects for the other three organizations are of a similar nature.

**Table 7.15: Sample of Projects
by Cairo Sanitary Drainage Organization
in the Third Five-Year Plan
(in LE million)**

Dar El-Salam sewage network	62.8
Nasr City collector	5.4
Pyramids pumping stations	19.6
Pyramids sewage networks	18.7
Bahtem pumping station	20.4
Shubra pipelines	32.6
Shubra pumping stations	15.5

Source: Governorate of Cairo Third Five-Year Plan.

7.81 Table 7.16 indicates the allocations by MOP to the four local water and wastewater organizations. The projects are needed to complete and upgrade the networks within the populated areas of the two cities. (As indicated earlier in Table 7.2, requested investments for the four organizations totaled LE 4.44 billion and the World Bank staff recommended a total allocation of LE 2.92 billion.) MOP allocations, representing a cut of LE 1.1 billion below World Bank recommendations,

are insufficient to implement the essential ongoing projects for the four organizations. Thus, an increase of about LE 1.0 billion would be needed to enable the organizations to complete their priority ongoing projects.

**Table 7.16: Investments Allocated by MOP
and World Bank Recommendations
for Local Water and Wastewater Organizations
in the Third Five-Year Plan
(in LE million)**

	MOP	World Bank
Cairo Water Supply Organization	579.6	1100.0
Cairo Sanitary Drainage Organization	684.0	1100.0
Alexandria Water Supply Organization	218.0	218.0
Alexandria Sanitary Drainage Organization	320.0	500.0
Total	1,801.6	2,918.0

Source: MOP; World Bank staff.

Environmental implications

7.82 Chronic institutional and project implementation problems, nonmarket pricing and other financial problems affect the urban, water and wastewater subsectors in Egypt. Most of the project proposals in these sectors originate within the framework of the current institutional structures. The Government is contemplating much needed institutional reforms designed to improve the performance of these three subsectors and to supply water on a more commercial basis. Unless such reforms are carried out, it is unlikely that the environmental hazards associated with poor services could be mitigated, thus reducing the chance of success in implementing the agenda set out in the Bank's 1992 World Development Report and endorsed at the UNCED environment meeting held in Rio de Janeiro in 1992. Moreover, most of the health and environmental hazards associated with poor service would prevail.

7.83 Investments in providing clean water and sanitation have some of the highest economic, social and environmental returns anywhere. Current inefficiencies in the use of irrigation water are often so great that substantial reductions in use are possible with only modest reductions in agricultural output. Urban water must also be used more efficiently. The vast majority of urban residents want in-house supplies of water and are willing to pay the full cost. However, by assuming that people cannot afford to pay the full costs, limited public funds have been diverted in order to provide poor service to restricted numbers of people. A vicious cycle of low-level and low-reliability service and correspondingly low willingness to pay ensues. It is possible to break this pattern: those willing to pay must be provided

with good commercial service and creative measures must be devised to bring services to those unable to pay (who are much less numerous than was once thought). Similarly in sanitation: evidence in a number of developing countries suggests that consumer willingness to pay for household sanitation at all income levels is much higher than had been thought and is roughly equivalent to what people will pay for water and for electricity.

World Bank Recommendations

7.84 As mentioned previously, total investments allocated by MOP to water and wastewater projects are not sufficient to enable the implementation of MHPU-proposed programs. Nevertheless, increasing the amount to be invested is constrained by the implementation capacity of the responsible organizations and their limited operation and maintenance capabilities. It is, therefore, essential to improve the operation, maintenance and administration of existing facilities; to strengthen the staffing; to increase self-financing and cost recovery; and to involve the private sector in providing some services. It is also essential to improve the operation of the institutions involved in the sector and to allow them to operate and be constituted as commercial enterprises. These reforms are essential to ensure the proper and efficient utilization of the large allocated investment funds.

7.85 If the Government begins to implement the suggested reforms in the sector, it is recommended that the amount allocated to NOPWASD be increased by LE 1.0 billion and the amount allocated to the four local water and wastewater organizations be increased also by LE 1.0 billion. The increase would make it possible for NOPWASD and the four organizations to implement a larger portion of their requested program and, hence, better serve the population in dire need of water and wastewater services.

CHAPTER VIII: TELECOMMUNICATIONS AND POST

Summary

In spite of substantial investments for telecommunications during the last decade, the continued, massive, unsatisfied demand for telephones and the congestion resulting from the overusage of facilities clearly indicate that the production and distribution of products and the provision and administration of services are inadequate, resulting in a serious bottleneck in the development process. The key objective of the proposed program for ARENTO is to satisfy the massive expressed demand in a network where the average waiting time for a new connection to basic services is about 8 years. Although the proposed investment program is justified, it is more than three times the allocation that MOP is able to make given the tight budgetary conditions and financial pressures from other high priority areas in the economy. On the other hand, a large, upfront reduction or deferment in the investment program could have adverse effects on the longer-term growth potential of the economy. During each of the First and Second Five-Year Plan periods, the telecommunications sector was able to add about one million lines. The financial rate of return on ARENTO's fixed assets remained above 10 percent during the 1980s and the economic rate of return under two World Bank loans to the sector during this period was estimated at about 40 percent. Given this situation, the Government could pursue a three-pronged strategy: the investment program could be reduced and tranced by deferring the less urgent parts of the program; revenues could be raised through better cost recovery, providing a larger amount of self-financing for investment; private sector involvement in the financing of new installations through Government-sponsored arrangements such as buy, lease and transfer for some large installations or licensing agreements for terminal and specialized facilities could be elicited. At the same time, the Government should carefully consider allowing ARENTO to evolve toward complete financial autonomy. To this effect, a comprehensive sector restructuring study should be undertaken. The study should also assess the feasibility of expanding the role of the private sector in the operation and development of telecommunications services.

I. TELECOMMUNICATIONS

8.1 Organization. Public telecommunications facilities in Egypt are state-owned. The Arab Republic of Egypt National Telecommunications Organization (ARENTO), under the Ministry of Transport, Communications

and Maritime Transport (MTCMT), is responsible for the operation, management, provision and development of all public telecommunications services (domestic and international) in the country. Under the communications monopoly, ARENTO provides all facilities and terminal equipment between and on users' premises, with several exceptions such as for private branch exchanges, telephone and facsimile stations and, recently, mobile telephones, which may be installed and operated by the users or private operators in accordance with ARENTO agreement or licensing procedures. Some ministries, such as defense, the interior and security services, and economic authorities, such as the Suez Canal, railways, radio and television broadcasting and civil aviation authorities, maintain telecommunications facilities for their own specialized needs.

8.2 ARENTO was established in July 1980 under a charter of the Public Sector Economic Organization, with a large degree of fiscal and administrative autonomy. It was organized, with the assistance of consultants, as a commercially run and operationally efficient organization with strong technical, administrative and financial management systems. Under the First and Second Five-Year Plans (FY82-FY92), the Government, realizing the importance of telecommunications to economic and social growth, supported the development of ARENTO.

A. Role of Telecommunications in the Economy

8.3 Telecommunications services are a major factor in socioeconomic activity and growth. Access to adequate telecommunications equipment and services is an essential input to productive sectors generally and, specifically, to private business. The efficiency with which the Government and business operate in Egypt is highly dependent upon adequate communications, particularly in the Cairo-Alexandria-Port Said-Suez "hub," the center of Egypt's domestic and foreign commercial activity. Given its vital role, telecommunication is classified as a "strategic sector" by the Egyptian Government, as was formerly the case in many other countries.

8.4 In spite of substantial investments by ARENTO for telecommunications during the last decade (1981-1991), the continued, massive, unsatisfied demand for telephones and the congestion resulting from over-usage of insufficient facilities, particularly in the densely populated areas of the country, show that the production and distribution of goods and the provision and administration of services are highly adversely constrained. This results in a bottleneck in the development process and causes wastage of resources.

8.5 The final Third Five-Year Plan document indicates that in terms of value added, the telecommunications subsector is projected to grow by about 5.4 percent a year, which is only slightly faster than the projected rate of growth of the economy. Accordingly, the share of the telecommunications subsector in GDP (in 1991/92 prices) is projected to rise from 0.95 percent in FY92 to 0.98 percent in FY97. According to

the Third Five-Year Plan all of the value added and investment in this subsector is accounted for by the public sector, which implies that no significant privatization scheme is envisioned for telecommunications, at least over the next five years.

8.6 Relative Importance of Telecommunications in Public Investment. In developed and developing countries, the indicators used when assessing the status of the telecommunications sector and the adequacy of its development are the telephone density per hundred inhabitants and the levels of telecommunications investments and revenues, in a given year, as a percentage of GDP. Telephone penetration in countries with US\$650 GDP per capita ranges between 3 and 12 main telephones per 100 inhabitants. Egypt is currently at 3.5, which is at the low end of the range and is a clear indicator of underinvestment in the sector.¹ Telecommunications investments and revenues range from 2 to 4 percent and 0.5 to 2.0 percent of GDP, respectively, in most developing countries in the Mediterranean region. Current estimates indicate that Egypt is near 2 percent with regard to investment and below 0.5 percent for revenues.

8.7 The Government's objectives of promoting modernization, economic efficiency and growth, particularly through the gradual privatization of the productive sectors, and the integration of Egypt into the regional and international economy will require a far more responsive and efficient telecommunications sector in the 1990s. An adequate and sustained level of investments will have to be programmed to this effect. However, given the severe budgetary constraints faced by the Government, the role of the private sector (as financing partner in investment or operator of parts of the networks) will have to increase in order to avoid negative effects on productivity growth and, consequently, on the overall growth of the economy.

B. Recent Telecommunications Developments

8.8 Achievements Under the First and Second Five-Year Plans. The major achievements under the First and Second Five-Year Plans concerning telephone service, which represents about 85 percent of telecommunications revenues and activities, were as follows:

- (i.) increases in telephone capacity (automatic, semi-automatic and manual) from 580,000 lines in 1982 to 1,480,000 in 1987 and to 2,507,000 by end-June 1992, i.e., staged increases of 255 percent and 169 percent, representing 0.9 and 1.1 million additional lines for each plan period, respectively; and

¹ For example, about 25 percent of existing switching and transmission equipment is still of the less efficient electromechanical/analog type.

(ii.) increases in total number of connected main telephone lines from 450,000 in 1982 to 1,118,000 in 1987 and 2,029,000 in 1992, i.e., staged increases of 248 percent and 181 percent, respectively.

The physical targets of each plan were met. Quality targets, however, are still being achieved through the implementation of ongoing works and the continued replacement of old, less productive installations. However, rapid expansion and high usage due to unsatisfied demand render the quality targets difficult to fulfill.

8.9 Large prorated increases were also realized in other services and facilities, such as telex, facsimile, mobile communications, data transmission and new services offered to subscribers. In particular, mobile radio telephone services were established and expanded up to a 10,000 subscriber capacity (to be completed in 1993), covering the Cairo-Alexandria axis and the Canal Zone. A packet-switching network (EGYPTNET) was started in 1989 using broad-band fiber optic transmission systems. It currently serves about 1,000 subscribers in the Cairo, Alexandria and Suez regions; the annual growth of subscribers and traffic is about 40 percent and users are pressing to accommodate a greater volume of international traffic.

8.10 This represents substantial and sustained growth in operations of about 15 percent per year on average during the 1980s and a major effort toward modernization and more efficient operation of the systems. ARENTO is becoming a large, modernized business, with assets representing more than US\$2.6 billion at replacement cost and annual revenues from operations in FY91 of about US\$360,000.

8.11 Productivity. With regard to operating efficiency, one key indicator in telecommunications operation is the staff ratio, or number of staff per 1,000 connected main lines. The ARENTO ratio decreased from 73 in 1982 to 51 in 1987 and 27 in 1992. This is a noticeable improvement and compares very favorably with other countries in Africa where the ratio ranges from 35 to 120 in extreme cases. Recruitment has been practically frozen since 1987, except for essential new positions, and internal recycling and staff training has been actively implemented to adapt skills and capabilities to the new systems.

8.12 Demand for Service. An interesting aspect of the evolution of the demand for service in Egypt under the First and Second Five-Year Plans is that the telephone availability (i.e., the ratio of the number of connected lines to the total expressed demand) was continuously lower than 50 percent from 1982 to 1988 but has increased to 61 percent, in spite of the recent rapid growth in available services. Current unsatisfied demand is on the order of 1.3 million applications, with the number of working lines reaching 2.1 million. The users of these connected lines are estimated to be 7 percent Government, 37 percent residential and 56 percent business. This, together with other studies of demand made by ARENTO, justifies the need for continued development and modernization of the networks under the Third Five-Year Plan. A

sustained growth of about 12 percent a year in the number of lines is needed, which is slightly lower but similar to the growth achievements under the First and Second Plans.

Table 8.1: Indicators of Telephone Productivity and Wait

	Employees/ '000 DELs ^a	Wait Period Years
Egypt	27 ^b	8.0
Indonesia	50	7.8
Malaysia	50	0.6
Tanzania	69	10.9
United States	0.21 ^c	0.0

Source: IFC, "Privatizing Telecommunications Systems," Discussion Paper No. 10, 1990; ARENTO.

^a Direct Exchange Lines.

^b Was 51 in 1987.

^c New England Telephone.

8.13 Main Sectoral Issues. A review of ARENTO achievements during the 1980s under the First and Second Five-Year Plans and of the current status and development requirements of the telecommunications sector in Egypt indicates that ARENTO, in its monopolistic set-up, is technically and commercially capable and efficient. Under its current status as an Economic Authority, ARENTO, a public utility, is part of the public sector. The Government has been supporting this strategic sector by authorizing it to reuse large parts of its operating surpluses and internal cash generation capability for investment and approving tariff increases. However, to cope with demand, a new strategy for maintaining the needed level of sector investment and providing adequate resources without overloading public investments will have to be developed. In this respect, enhancing the role of the private sector in telecommunications would go a long way in achieving the required targets without exerting too much pressure on the budget of the central government.

8.14 In recent years, telecommunications investment programs have been cut back because of budgetary problems in both developed and developing countries where these services are generally entrusted to public authorities. As a result, privatization is more and more considered to be a viable alternative to deal with such limitations, but that would require a careful assessment of the ongoing budgetary processes, regulatory environment, market structure and economic and operational impact. In line with this, a study is recommended below, with the view of informing the Government and ARENTO of the main issues and the justification and feasibility of a privatization program for the sector.

8.15 In particular, the main operational and financial issues currently facing ARENTO are: (i.) network congestion and lower service quality due to high usage; (ii.) the need for a medium-term master plan coordinating the utilization of new technologies; (iii.) the limited capability of ARENTO to plan, implement and operate a sustained large investment program; (iv.) rationalizing domestic tariff levels and structure; and (v.) the need for sufficient investment financing, access to separate investment resources and financial autonomy, particularly with regard to the high level of self-financing for new investments.

8.16 With regard to sector policy, institutions and overall setup, the principal issues are: (i.) conflicts inherent in the Government being operator, owner and regulator; (ii.) the need to update sector policy; (iii.) regulatory constraints to private sector participation; (iv.) promoting the efficiency and autonomy of the local manufacturing industry, separate from the main operator. These issues should be further studied by the Government and ARENTO and should be considered within an overall sector strategy, which would be applied under the Third Five-Year Plan.

C. Public Investment in Telecommunications Projects

8.17 Proposed Telecommunications Development Program. Under the Third Five-Year Plan, ARENTO and MTCMT have proposed that MOP consider the following program for the telecommunications sector:

- 8.17.1 (i.) the construction of balanced switching facilities for about 1.6 million exchange lines, including 400,000 lines for the replacement of obsolete crossbar exchange installations, mostly in large cities, which cannot be modified to fully interact with new digital exchanges, 200,000 lines of ongoing installations for the expansion of existing exchanges and 1,000,000 lines in new exchanges at all levels of demand (urban, regional and rural) and traffic routing (urban, interurban and international);
- 8.17.2 (ii.) the construction of appropriate transmission subprojects for inter-exchange and long-distance linkages, the expansion of international facilities through satellite and submarine cable systems and the construction, extension and replacement of local cable networks, buildings, operation and maintenance systems and support and specialized training facilities, as well as appropriate strengthening of management practices; and
- 8.17.3 (iii.) the extension of a cellular mobile telephone system to cover all Egypt, the enlarging of the data transmission system (EGYPTNET) to serve increased information systems requirements and the provision of service to new rural areas and communities.

8.18 The objective of the proposed program is, principally, to satisfy the massive expressed demand in a network where the average waiting time for new connection to basic services is currently about eight years. The program, which has been prepared by ARENTO staff and consultants, aims at progressively introducing and using up-to-date new technologies, including the digitalization of the networks, the use of broad-band fiber optic transmission supports and the setting up of efficient computerized network management and maintenance systems. Basic data on these plans, though lacking details on specific components, have been made available to the Bank.

8.19 Projects under Implementation. Telecommunications systems are an integrated set of interrelated switching, transmission, terminal and maintenance components. Final delivery and projects completion take place about a year after provisional acceptance. Projects from the Second Five-Year Plan under implementation that remain to be completed consist of about 200,000 lines of digital switching equipment in new or existing exchanges and the associated local line networks and subscribers installations, the expansion of ARENTO mobile radio telephone service on the north coast and in lower Egypt for about 2,000 new subscribers, and the addition of new types of access and protocols to carry out enlarged applications of EGYPTNET. This represents about 13 percent (LE 0.61 billion) of the ARENTO program proposed under the Third Plan.

8.20 Program Cost. According to estimates made available by MOP, MTCMT and ARENTO, the total cost of ARENTO's proposed program for telecommunications during the Third Five-Year Plan is LE 4.82 billion, consisting of: (i.) LE 1.03 billion for the replacement of old equipment; (ii.) LE 0.61 billion for ongoing and continued works from previous Plans; and (iii.) LE 3.18 billion for new works. Cost estimates are reportedly based on current actual costs of similar equipment under ongoing contracts or valid proposals available to ARENTO. Some usual physical contingencies were included, but inflation or price contingencies apparently were not factored in. Compared with cost estimates in similar telecommunications programs in the region, the above cost estimates would appear slightly on the low side, although in line with investment cost under recent ARENTO programs. Egypt's program, however, with 1.6 million lines, is larger than those identified in neighboring countries and discussed within the second UN Transport and Communications Decade in Africa (UNTACDA) for the 1990s. It may benefit from economies of scale, as well as a relatively important local cost component. It is advisable that a cost-updating program take place at mid-plan period, say in 1994, and be made on the basis of the actual cost of the works during the first years of the Third Plan.

8.21 Program Financing. Of the total estimated program cost of LE 4.82 billion, LE 1.86 billion is in local currency and LE 2.96 in foreign exchange. ARENTO estimates in its financial forecast at constant prices that it could self-finance from internal cash generation about 70 percent, or LE 3.36 billion, of the proposed program. This

would cover local costs (LE 1.86 billion) and about half of the foreign exchange needs for the external component of the local production of cables, switching and terminal equipment being produced in Egypt. The LE 1.46 billion balance of foreign exchange costs would require borrowings or grants from various ODA or commercial sources. This would cover imported goods and services under bilateral, multilateral or commercial lending. No particular source is identified at this stage, but ARENTO has indicated that bilateral concessional loans, and grants in some cases, are likely to be available from traditional ARENTO suppliers or other lenders or donors. Experience from the First and Second Five-Year Plans indicates that such financing could be secured for telecommunications under ARENTO competitive procurement procedures.

8.22 Cost Recovery and Related Issues. ARENTO is a profitable service industry. Operating results were continuously positive during the 1980s. During the First and Second Five-Year Plans, the World Bank supported ARENTO's investment programs with the Second and Third Telecommunications loans to Egypt, which were implemented from 1980 to 1989. ARENTO's financial situation was satisfactory under both projects. The related Projects Completion and Performance Audit Reports indicate that the financial rates of return (FRR) from ARENTO's operations ranged between 14 and 24 percent on book value of the assets from 1980 to 1984, and between 10 and 16 percent on revalued assets valued from 1984 to 1990, with the exception of 1987, when the FRR was 9 percent. Net self-financing resources available (after debt service) authorized by the Government for project financing under the Second Five-Year Plan increased from LE 150 to LE 370 million between FY87 and FY91. In 1987, for example, ARENTO's LE 150 million self-financing was about 25 percent of total capital construction cost, but represented only about 60 percent of its internal cash generation (LE 225 million). The LE 75 million balance was transferred to the central government for other purposes. The ARENTO financial forecast indicates that the self-generation of funds during the Third Five-Year Plan period would be about LE 5.5 billion, which exceeds the LE 4.8 billion cost of the proposed investment program. There is apparently no direct recovery issue in the sector.

8.23 However, as in many evolving and rapidly growing networks with a uniform pricing policy, there may be imbalances or cross-subsidies in the rates charged and the revenue collected compared to the operating or economic cost and value of the services provided. In particular, international calls are priced at the full international accounting rate (which is not the case in many countries), but tariff levels for domestic telephone service are low compared to those applied elsewhere in Africa and the region, or in industrial countries. For example, a three-minute excess call charge in a city, or "pulse rate," is LE 0.05 (1.7 US cents), compared to 11 US cents in Tunisia and several EC countries for the same call (usually timed at 6 minutes) and about 8 US cents in the US (untimed). Only limited tariff increases took place in 1986 and 1991, and these were insufficient to maintain real price levels for telecommunications services. Also, the tariff structure is complex and intricate. Though partly understandable from

past policies, which held consumer charges low on equity and inflation-fighting grounds, the current situation requires an in-depth tariff study. The study should consider the changes needed in the tariff rates and structure due to evolving services and the nonavailability of sufficient facilities and to satisfy the growing demand. The study should be geared toward balanced cost recovery and take account of the users' ability to pay, as well as of the continued large investment financing requirements. The burden of this financing should be shifted, in large part, to the new users. This is likely to result in substantial increases in resources and transfers to the Government from ARENTO.

8.24 Appraisal of the Telecommunications Investment Program. The proposed ARENTO program is supported by the large expressed demand for existing and new services, and by the need to render Egypt's public telecommunications network more efficient and responsive to the requirements of the country. Under the Second and Third World Bank Telecommunications loans for ARENTO development during the First and Second Five-Year Plans, the combined estimated economic rate of return was 43 percent, without taking into fully account the consumer surplus and positive externalities received by non-users of telecommunications services. Given such a high rate of return, and the fact that demand for ARENTO's services has continued to increase rapidly, ARENTO's proposed investment program under the Third Five-Year Plan is justified. The proposed allocation by MOP for public investment in telecommunications amounts to only about LE 1.5 billion. This allocation falls far short (i.e., less than a third) of the LE 4.82 billion requested by ARENTO. In determining such reductions, the proposed investment items to consider for deferment would be: (i.) the replacement of obsolete equipment, in particular the newest equipment installed in the mid-1980s; and (ii.) prorated reductions in the number of new exchanges, though this would be detrimental to the economy by further delaying the availability of new lines and, in particular, the introduction of service into rural areas. Slowing down ARENTO installations may also aggravate traffic congestion and related technical difficulties with regard to the quality of service and maintenance/operations improvement, as well as medium-term planning. MOP has indicated that an effort to restrict foreign borrowing was a key factor taken into consideration; the import content of the final plan program is 19 percent compared to the 32 percent level implied by the authority's suggested program.

8.25 Final Plan Allocations for Telecommunications. According to the final document of the Third Five-Year Plan, a total of LE 1,464.5 million has been allocated for telecommunications projects. The main projects as described in the Third Plan are as follows:

8.25.1 (i.) increasing telephone lines from 2.029 million working lines at the beginning of the Third Plan period to 3.029 million working lines by FY97, which would raise the number of operating lines per thousand persons from 45 to 49;

- 8.25.2 (ii.) increasing the number of telex lines from 7,820 to 9,020;
- 8.25.3 (iii.) serving all towns and main villages nationwide with automatic dialing telephone service;
- 8.25.4 (iv.) executing subterranean cable networks compatible with existing or new switchboard capabilities to fully utilize existing capacities;
- 8.25.5 (v.) expanding cellular telephone service;
- 8.25.6 (vi.) completing a fiber optics marine cable project (as an alternative to satellite communications) linking Asia, the Middle East and Western Europe;
- 8.25.7 (vii.) introducing modern automatic switchboards by implementing a program for replacing all old models; and,
- 8.25.8 (viii.) improving overall quality of service by introducing a nationwide centralized modern maintenance, control and network monitoring system and by enlarging public access to services by developing modern teleservicing centers.

8.26 Under the Third Five-Year Plan, the approved ARENTO investments of LE 1.465 billion are divided as follows: LE 430 million for completion of ongoing projects, LE 485 million for replacement/renovation and LE 549 million for expansion and new projects. They would be financed by LE 281 million in foreign borrowing (about 20 percent of total), with the balance of LE 1.184 million self-financed. It should be noted that the proposed self-financing is roughly half of ARENTO's estimated internal cash generation capability (para. 8.21), thus providing the Government with important resources for use in other sectors. Though not expressed in the form of return or dividend on equity capital to the Government, such resources should be formalized through adequate rules and regulations.

D. World Bank Recommendations for the Telecommunications Sector

8.27 An up-front reduction or deferment in the ARENTO proposed program for the sole purpose of reducing public investment would not be suitable, either for the entity or for the economy. The final Third Five-Year Plan allocation of LE 1.5 billion falls far short of the requested amount by ARENTO, and it is not clear if the targets of the Third Plan (see paras. 8.16 and 8.17) are achievable, given the approved investment budget. Financial solutions to maintain the current rate of growth of telecommunications facilities should, instead, be explored. Pending an in-depth institutional reform of the sector that would provide ARENTO with complete economic and financial autonomy, mechanisms to finance sector development could be appropriately introduced. These

could involve: (i.) an increased contribution toward installation costs by new subscribers, the public sector and by businesses through advanced deposits or intermediate loans repayable, in part, by the provision of service; and (ii.) the further involvement of the private sector in financing new installations through buy, lease and transfer arrangements or licensing agreements.² The preparation and setting-up of appropriate measures to this effect would require time, and the proposed ARENTO program could be tranchéd accordingly. A mid-plan review would decide upon the implementation of deferred investments.

8.28 The only item that is currently being considered by the Government for implementation by the private sector at this time is the cellular phone systems. These, however, would have to be installed and operated under appropriate licensing and in cooperation with ARENTO to ensure the availability and the maintenance of the universal service for new mobile users. Assuming that the ARENTO program encompasses 50,000 mobile cellular subscribers in the medium term, corresponding investments would be on the order of LE 500 million, which could be deleted from public investment.

8.29 Need for a New Sector Policy for ARENTO. Due consideration is being given worldwide by governments and public telecommunications operators to possible changes in the structure, set-up and organization of the telecommunications sector, in particular with the view of: (i.) separating the regulatory, operational and equipment production functions; (ii.) giving the operating entities increased financial and operational autonomy, for example under the statute of semi-public corporations, so that they are managed and operated on a fully commercial basis under fully pledged, competitive corporate and fiscal status; and (iii.) seeking and favoring increased participation from the private sector, thus benefitting from competition in the cost of investment, operation and equipment production and, consequently, in the cost of services. No progress seems to have been made, or is envisioned, regarding these changes by the Government of Egypt or ARENTO. The telecommunications sector, thus, remains fully monopolistic and, furthermore, vertically integrated, with the production/assembly of equipment for several types of installations taking place in plants owned by the Government and ARENTO. It is advisable that careful attention be given to these aspects, in particular with the view to meeting ARENTO financing requirements on a more autonomous basis (para. 8.28).

8.30 From the above analysis, it is recommended that planned ARENTO investment, as a part of the public sector investment program during FY93/FY97, be provisionally reduced. But if the key targets of the Third Five-Year Plan are to be met, total investment in this strategic subsector should not fall significantly below a range of LE 3 to 3.5 billion, i.e., about 2.5 to 3 percent of GDP, during the

² Regarding private sector participation, MOP has informed the World Bank that a joint venture company has been set up in 6th October City to manufacture modern telephone exchanges.

next five years. It would cover an immediate three-year tranche of the sector requirements. Concurrently, sector policy, institutions, overall setup and statutory aspects should be discussed and studies undertaken through appropriate high-level committees and working groups, with the assistance of consultants as needed, to determine, among other things: (i.) how the financing of the complementary tranche of the program could be secured independently from government resources; and (ii.) how the participation of the private sector could be gradually increased, beyond the concession or licensing of peripheral or overlay services. The proposed studies and institutional exercises would be made with the view of progressively privatizing this essential public service and all related sectoral activities in due course.

8.31 Recommendations. The main recommendations regarding the public telecommunications sector and its development under the Third Five-Year Plan are summarized below:

8.31.1 (i.) Investment requirements: The telecommunication sector requires substantially larger investments than the allocation that MOP is able to make given the tight budgetary conditions. The Government's aggregate investment program for ARENTO could be reduced well below LE 4.8 billion (ARENTO proposal) but the total investment should not fall significantly below LE 3 to 3.5 billion (i.e., about 3 percent of GDP) during the next five years. Moreover, according to ARENTO's financial projections, which are reasonable, the entire proposed investment program could be financed by retained earnings. The Government, therefore, could pursue a three-pronged strategy: the proposed level of investment could be reduced to LE 3 to 3.5 billion and tranced by deferring the less urgent parts of the program; revenue could be raised through better cost recovery to fully finance from retained earnings at least LE 2.5 billion of ARENTO's investments; and greater involvement by the private sector in financing of new installations could be elicited through buy, lease and transfer arrangements for large institutions or licensing agreements for terminal and special facilities, with private sector financing of investments amounting to LE 0.5 to 1 billion;

8.31.2 (ii.) Financing Strategy: Due to the sector's high level of financing requirements under the ARENTO program (even if initially tranced), it is recommended that a financing strategy be determined and established. The strategy would include: (1.) an appropriate dividend flow from ARENTO operating profits to the Government; (2.) determination of an appropriate level of self-financing, as per the usual industry standard (30 to 40 percent); (3.) uncovering funding resources from priority, specialized or agreeing subscribers; (4.) authorizing an appropriate level of borrowing from the capital market (external and local); and

(5.) setting objectives to increase the role of the capital market, through adequate arrangements such as finance, buy, lease and transfer for some large installations, licensing agreements and equity sharing with the private sector.

8.31.3 (iii.) Recommended Studies: Considering the large size of ARENTO's operations and development requirements and the need to update and strengthen the organization and its capabilities in order to cope with growing sectoral requirements, it is recommended that the following studies be rapidly undertaken under the Third Five-Year Plan:

8.31.3.a (a.) Restructuring study: A thorough sectoral restructuring study should be undertaken by the Government through appropriate multidisciplinary groups and with the assistance of specialized consultants, as needed, to determine the most suitable institutional and organizational setup within the sector as well as sectoral policies as to where and how competition should be introduced. The study should seek the separation of regulatory and operational functions and the introduction of competition in providing services and supplying equipment, including its manufacture. The study would, in particular, determine how private sector participation could be increased in the immediate- and medium-term, with a view to financing further development and to increasing competition in the sector as a whole.

8.31.3.b (b.) Operational, sectoral coverage, and technical studies: Parallel to the above restructuring study, it is recommended that ARENTO make a thorough assessment of its planning, implementation and operational capabilities. Thus, the following studies should be undertaken: (1.) a demand study relating to proposed economic development, including the increased role of the private sector; (2.) a master plan study of development objectives covering the next decade and longer, and (3.) a tariff study to reflect the changes, evolution and requirements of the network and its users, as well as their ability to pay for the services, considering the changing economic conditions.

E. Role of Telecommunications in the 1990s

8.32 Intersectoral Issues. Good communications, upon which the efficiency of all sectors is highly dependent, are a key ingredient of economic progress. All public telecommunications, however, are only a tool for conveying the really important commodity - information. It is widely acknowledged that the information sector is playing an increasingly important role worldwide, and particularly in Arab economies. In the United States and EC-member countries, for example, it is estimated that 48 percent of the national income is created by information workers, while only 52 percent is generated through

traditional manufacturing and production-related occupations. Similar trends can be observed and eventually quantified in developing countries as well, particularly in countries of the population size and distribution of Egypt.

8.33 Because the telecommunications sector is critical to business growth and development, global trade and financial linkages, insufficient investments in telecommunications infrastructure would strangle private sector growth in Egypt. Similarly, the development and provision of quality social services and the improvement of prospects for urban and rural development would be further compromised. Given the links with other sectors, services, trade and finance, and the need to reduce substantially the Government's financial exposure in the sector, priority should be given to needed telecommunications investments and, concurrently, to other investments and actions aimed at sector reform.

8.34 Role of Private Sector. The common experience of other countries reveals that significant efficiency gains may result from liberalization (the reduction of barriers to competition) and regulatory reform in the telecommunications sector (see Chapter IV, above). In addition, the presence of actual and potential competition from the private sector seems, in general, to lead to more dynamic and energetic management and to restore cost-effectiveness, productivity and growth. Further, the telecommunications sector is one which, with appropriate policies, has been shown to be fully self-sustaining in its generation of investment funds through tariffs and private sector involvement in investment financing. Thus, the appropriate strategy in the sector over the medium term would be one of supporting the reform process through discussions and studies as suggested above. In addition, measures to bring about a rapid increase in participation by the private sector, including subscribers, in the financing of telecommunications development, and, to the extent possible, in its operations, should be strongly encouraged.

II. POSTAL SERVICE

8.35 In Egypt postal service is operated by the Arab Republic of Egypt National Postal Organization (NPO), under the Ministry of Transport, Communications and Maritime Transport (MTCMT). NPO is organized under a charter of the Public Sector Economic Authority and enjoys a large degree of fiscal and administrative autonomy. Its management objective is self-sufficiency. NPO is responsible for domestic and international mail service (letters and packages) and ensures door-to-door delivery, where feasible, in large cities. NPO also provides countrywide financial services: money orders, money deposits, checking accounts and savings accounts.

8.36 NPO has a long-established classical postal service setup and tradition. It works in relation with several similar European and regional organizations, as well as the Universal Postal Union (UPU), which provides technical and training assistance to its members under

its cooperation program. Going along with the worldwide evolution of postal services, NPO has recently modernized its sorting installations in the main centers and introduced domestic and international express mail service. Express mail service is open to competition from other authorized private carriers. NPO has also established a postage stamp printing shop that is gradually expanding its activities.

A. Recent Postal Developments

8.37 Achievements Under the Second Plan. The main achievements under the Second Five-Year Plan were the introduction and expansion of improved services. Total investment expenditures during the plan period were LE 40.5 million. The physical and service objectives of the plan were achieved, but self-sufficiency in financing was not met due to a late decision on tariff increases, which became effective only in 1990. A government contribution of about LE 14 million had to be obtained. Total revenues from the services, from FY87 to FY91, inclusively, were about LE 838 million. Income from mail and money order services comes from the sale of stamps and fees for services. Income to cover financial services comes from interest on deposit balances: at the postal savings bank for balances from checking accounts (currently at 12 percent annual interest) and at the National Investment Bank (NIB) for the postal savings bank. The current balance on savings deposits is about LE 980 million, of which approximately LE 800 million are at NIB. The NIB yearly interest rate on NPO deposits is currently 13.25 percent.

B. Public Investment in Postal Projects

8.38 NPO Proposed Postal Development Program. Under the Third Five-Year Plan, NPO and MTCMT have proposed to MOP and the Government the following development program for the postal sector. The program covers: (i.) the modernization of postal units and their equipment and the replacement and extension of postal transportation facilities to improve services and work conditions; (ii.) the extension and modernization of NPO postal printing facilities; (iii.) the extension/upgrading and modernization of financial services and of express mail service capabilities; and (iv.) the expansion of computerized units to improve the operations of the Postal Savings Bank, diversify the services offered and expand the bank's coverage and clientele throughout the country.

8.39 Program Cost. The total cost of the proposed program for postal services during the Third Five-Year Plan is estimated at LE 94.3 million, of which LE 20.7 million is in foreign currency. The estimates include the usual physical contingencies and prices, which are based on actual current costs for the concerned investment. No inflation or price contingencies were factored in.

8.40 Program Financing. The NPO operating statement forecast for the Third Five-Year Plan period (FY93-FY97) indicates that operating

surpluses, estimated at LE 140.5 million, should enable full financing of the proposed LE 94.3 million investment expenditures from cash resources. The surplus balance of about LE 45 million could be available for transfer to the Government or allocated to other usage.

8.41 Appraisal of the Postal Investment Program. The proposed NPO program is reasonable and justified by the need to expand and improve the services provided to users in a feasible and balanced way. Due to the modest amount of the proposed investment and the forecast of its full coverage from operating surpluses, it would seem unlikely that the NPO request might be reduced. It is advisable that the implementation of the proposed program be reviewed at mid-term in the plan and that consideration then be given to its possible enlargement.

8.42 Sectoral Issues. The principal sectoral issues that need to be addressed are the small size of the program and the very low postal tariffs. The proposed NPO program appears modest, in spite of the 140 percent increase in investment compared to the Second Five-Year Plan. There are certainly important additional rehabilitation works on buildings and work facilities that could be included in the program. Also, door-to-door postal service in large cities such as Cairo could be improved and expanded, thereby preventing the multiplication of more costly and less efficient substitutions through the establishment of internal mail services in companies and organizations. A review of postal rates for ordinary and airmail letters shows that postal tariffs are on the low side. For example, an international air letter to Europe or the United States is stamped at LE 0.70, or 22 US cents; the same letter in the US (where tariffs are low due to mass effect) is stamped 50 US cents, and about 65 US cents equivalent in several EC countries.

8.43 Final Plan Allocations for Postal Services. Under the Third Five-Year Plan a total sum of LE 45.2 million has been allocated to postal service. The main projects listed in the final plan document are: (i.) completion of Assiut postal center; (ii.) completion of El-Zagazig post office building; (iii.) supplying 25 post offices with computer equipment for the postal savings services; and (iv.) new equipment for postal printing. All LE 45.2 million is from self-financing.

C. World Bank Recommendations for the Postal Sector

8.44 The following recommendations are made from a review of the postal sector and its Third Five-Year Plan investment program:

8.44.1 (i.) a study is needed to determine a comprehensive expansion and improvement plan for the postal services in Egypt, including the identification of effective medium- and long-term development projects as well as suitable organizational measures for NPC; and

8.44.2 (ii.) a study of postal tariffs should be made to determine the appropriate level and structure of tariffs and, thus, to enable satisfactory cost recovery.

8.45 Role of the Postal Services in the 1990s. Postal services, like telecommunications, play an important role in increasing the efficiency of economic, commercial and administrative activities and in conveying and contributing to the distribution of information between communities and nations. Statistics on the sector published by UPU concerning both developing and industrialized countries show the following: (i.) the more developed a country, the higher the mail volume and the larger the network of post offices; (ii.) the higher the literacy rate, the larger the number of conveyed mail items; (iii.) the more developed the economy and the more active the private sector, the more the postal system is used; and (iv.) where postal services and checking account services are available and conveniently organized, short-term savings accounts may represent an important share of the national market - up to one third, where postal penetration is high and efficiently organized. Egypt would certainly draw important social, cultural and economic benefits from an enlarged and efficient postal system. In this context, the above suggestions would further enhance the country's economic and social progress in the 1990s.

CHAPTER IX: TRANSPORT

Summary

Four provisions are needed to ensure that the Egyptian transport sector operates satisfactorily: (i.) adequate funds for road maintenance; (ii.) an end to the subsidization of freight and passenger transport services, except for the Cairo transport system; (iii.) improved utilization of urban road networks; and (iv.) more effective transport planning. Generally, insufficient funds have been available for road maintenance in the past, particularly for urban and local roads. Subsidized railway services are costing the Government large and unnecessary sums and subsidized public passenger transport services are inhibiting the initiation of bus and air transport services by the private sector. Effective road capacity for traffic in urban areas is far less than physical capacity. Transport investment proposals are made, and often implemented, without regard to economic optimization; some transport investment projects have, nevertheless, been adequately evaluated. Investments in the transport sector should include: (i.) the construction of an economically and environmentally desirable new road between Cairo and Assiut; (ii.) the rehabilitation of a large number of railway main line locomotives; (iii.) the development of the Damietta Branch of the Nile for navigation; and (iv.) the completion of the first phase of development of the new port of El-Dikheila (only the equipping of the container terminal remains to be done). The largest of the proposed Third Five-Year Plan transport investments is the construction of the first phase of the second line of the Cairo metro; only the large environmental benefits of this project, which are difficult to quantify in monetary terms, might make this costly project more than marginally desirable. Opportunities exist for substantially increasing the role of the private sector in the provision of transport services specifically in: (i.) the trucking industry; (ii.) the waterway transport services (barge and ferry services); (iii.) bus services; and (iv.) domestic air transport passenger services.

A. Background and Recent Developments

Role of Transport System in the Economy

9.1 The transport system is concentrated, to a large extent, in areas where most of the population resides. Transport directly contributes about 5 percent of both GDP and employment and indirectly contributes much more. In comparison to most developing countries, air

transport is of relatively greater importance in Egypt, principally because of its essential role in support of the Egyptian tourism industry. The transport system of Egypt comprises the following:

- 9.1.1 (i.) an intercity road system of 17,000 kms, all with asphaltic concrete (AC) pavement, mostly in fair to good condition;
- 9.1.2 (ii.) a total of 18,000 kms of local roads, including the street systems of urban areas, mainly in poor-to-fair condition, with some significant portion in failed condition;
- 9.1.3 (iii.) a railway system of nearly 5,000 route-kms (with completion of an ongoing project to construct a new 350 route-km line), out of which approximately 1,200 route-kms are double-tracked; most of the main line tracks are in good condition, but nearly 1000 route-kms of branch line tracks are in poor condition, requiring speed restrictions;
- 9.1.4 (iv.) a waterway system, comprising the Nile River (including the Rosetta branch and Damietta branch in the Delta) and major irrigation canals, with some severe constraints on navigation in portions of the system;
- 9.1.5 (v.) the Suez Canal, a major source of foreign exchange earnings (ranging between US\$1.5 and US\$2.0 billion in recent years) from transit traffic; the canal is adequate for most traffic, including the empty return voyages of very large crude carriers (VLCCs), but cannot accommodate these and other very large bulk vessels when they are loaded;
- 9.1.6 (vi.) four ports on the Egyptian Mediterranean coast, including the principal port of Alexandria (which accommodates about two thirds of Egypt's international trade), Port Said and the new ports of El-Dikheila and Damietta. These ports are mainly in good condition, with satisfactory cargo-handling performance and adequate capacity to accommodate current and anticipated short-to medium-term demand, with the exception that portions of the Alexandria quay are of diminishing utility, as they are unsuitable for the increasingly large-sized vessels calling at the major ports on the Egyptian north coast;
- 9.1.7 (vii.) the smaller ports of Suez and Safaga on the Red Sea coast, which are of importance for both cargo and passenger traffic; these ports require upgrading if they are to adequately accommodate larger vessels and/or significantly higher traffic volumes;

- 9.1.8 (viii.) minor ports, including several on the Sinai coasts, plus the port of Mersa Matroh on the Mediterranean coast near the Libyan border;
- 9.1.9 (ix.) Cairo International Airport, which accommodates current levels of demand but which could begin experiencing congestion within a few years, if traffic at the airport continues to grow at the 7 percent per annum rate of recent years;
- 9.1.10 (x.) seven other international airports with limited capacities and facilities at Luxor (the most developed of the seven), Aswan, Abu Simbel, Alexandria, Hurghada (on the Red Sea coast), Ras El-Naqb (Taba), and Sharm El-Sheikh;
- 9.1.11 (xi.) eight minor domestic airports, including the Mediterranean coast airports at Mersa Matroh and Port Said, the Nile valley airport at Assiut, Sinai airports at El-Arish and St. Catherine and three airports in the desert; and
- 9.1.12 (xii.) the first line of the Cairo metropolitan rail system (metro), which is still under development and is operating at 50 percent of its design capacity.

9.2 The deceleration of economic growth during the Second Five-Year Plan, as compared to the First Five-Year Plan, was reflected in the generally slower growth of traffic volumes, except for tourism, which experienced rapid growth. From 1986 to 1988, tourism in Egypt grew by 129 percent (in terms of visitor-nights).¹ Cruise travel on the Upper Nile grew at 13.5 percent per annum throughout the 1980s.² Traffic at Cairo International Airport has been growing at 7 percent per annum.³ Road transport accommodates more than 90 percent of domestic freight movements, on a ton-kilometer basis, with railways accommodating around 7 percent, and waterways most of the remainder. When intra-provincial movements are excluded, the rail and waterway percentages rise to 11 and 6 percent, respectively. The road mode is also dominant where passenger volumes are concerned, but railways accommodate about 45 percent of inter-provincial public transport passenger-kilometers.

9.3 The intercity and international transport system of Egypt (i.e., excluding local roads and transport services) is the responsibility of three ministries, while the Suez Canal is the

¹ TDA tourism statistics.

² "A Priority Action Plan for Infrastructure and Tourism Development in Egypt," Arthur D. Little, et. al., April 1991.

³ Ministry of Civil Aviation information.

responsibility of the Suez Canal Authority (SCA), which is autonomous. The three ministries and their subordinate organizations are outlined below.

9.3.1 The Ministry of Transport (MOT) is responsible for intercity land and waterway transport systems, including the Cairo metro. Under MOT, the Roads and Bridges Authority (RBA) is responsible for the intercity road system, with four public sector contractors operating under it; the Egyptian National Railways (ENR) is responsible for operating the railway system and is temporarily operating the Cairo metro; the River Transport Authority (RTA) is responsible for the transport aspects of the inland waterway system; the National Authority for Metro and Tunnels (NAMT) is constructing additions to the Cairo metro; a holding company is responsible for 11 public sector transport companies, including five trucking companies, four intercity bus companies and two barge operators; the Transport Planning Authority (TPA) is responsible for land transport planning and for developing a National Transport Information System; and the National Transport Institute (NTI) is responsible for transport management training.

9.3.2 The Ministry of Maritime Transport (MMT) is an associate ministry of MOT, responsible for sea transport, including seaports, Egyptian shipping and maritime safety and training. Under the jurisdiction of MMT are the Ports and Lighthouses Authority (PLA), responsible for maritime safety and training; the Alexandria Port Authority (APA), responsible for the development and operation of the port of Alexandria and its sister port of El-Dikhella; the Damietta Port Authority (DPA), responsible for the development and operation of the port of Damietta; the Port Said Port Authority (PSPA), responsible for Port Said; and the Red Sea Ports Authority (RSPA), responsible for the Egyptian ports at the Red Sea. There are also 11 public sector enterprises that provide cargo-handling, storage, and freight-forwarding services at the various ports of Egypt, as well as the Egyptian flag shipping line, Egypt Navigation.

9.3.3 The Ministry of Civil Aviation (MCA) is an associate ministry of the Ministry of Tourism and is responsible for all Egyptian civilian airports, air transport safety and training, air transport services and meteorological services. Under MCA is the Cairo International Airport (CIA); the Civil Aviation Authority (CAA), responsible for all airports other than Cairo; the National Civil Aviation Training Organization (NCATO), responsible for the Misr Flying Institute (MFI), the Civil Aviation Training Institute (CATI) and the Egyptian Civil Aviation Academy (EGAA), which is currently under development; the flag airline, EgyptAir, which provides virtually all domestic air

transport services, as well as a large share of Egypt's international air transport services; and the Meteorological Services Authority (MSA), responsible for providing meteorological services.

9.4 The Ministry of Development, Housing, New Communities and Public Utilities (MDHPU), among its various responsibilities, constructs roads in new communities, local roads and a few regional and intercity roads. Most local roads, however, are constructed by the governorates. The Ministry of Public Works and Water Resources (MPWWR) is involved in transport facility construction only to the extent that barrages are also used as bridges and locks are provided at barrages. The Cairo Transport Authority (CTA) provides bus, minibus, tram and ferry services in the greater Cairo area, and the Alexandria Transport Authority (ATA) provides such services (excluding ferry services) in Alexandria.

Table 2.1: Subsectoral Allocations of Public Investment in Transport in the Second and Third Five-Year Plans
(Second Plan, current price; Third Plan, constant FY92 prices; LE millions)

Sectoral Organization	Second Plan (FY88/FY92) Actual	----- Third Plan (FY93/FY97) -----		
		Proposed by Sectoral Organization	MOP Preliminary	MOP Final
Intercity Roads ¹	279	814	427 ^a	445
Railways ²	1,656	4,492	2,100	2,500
Waterways	12	156	125 ^a	128
Sea Transport	91 ^b	1,173	766	766
Suez Canal	5,014	4,266	510	510
Air Transport	3,182	3,814	1,177	1,166
Cairo Urban Transport ³	1,562	3,240	1,832 ^a	2,070
Alexandria Urban Transport ⁴	n.e.	300	298	247
Road and River Enterprises	372	0	0	0
Other (TPA, etc.)	28	n.a.	n.a.	48
Totals⁵	7,683	18,255	7,283	7,880

n.e.: Not estimated.

n.a.: Not available.

¹ Totals exclude road maintenance/rehabilitation costs and MDHPU road investment.

² Totals exclude Ministry of Industry railway investment.

³ Second Plan total excludes local road investment.

⁴ Local road investment excluded from Second Plan and estimated, on the basis of discussion with staff of the Governor of Alexandria, for the Third Plan.

⁵ All local road costs excluded from Second Plan, and only Cairo and Alexandria (estimated) road investment included in Third Plan.

^a MOP indicated a total of LE 1,651 million tentatively approved for intercity roads, waterways, and the Cairo metro; MOP has not provided the distribution of costs among the three modes.

^b Figure taken from MOP tables on Third Plan investment proposals. The total excludes some projects that were completed during the Second Plan, including El-Dikheila investment expenditure.

Sources: Documents of RBA, MMT, MCA, Cairo Governorate, MOP and interviews.

Relative Importance of Transport in Public Investment

9.5 During the First and Second Five-Year Plans, roughly one fifth of all public sector investment was directed to improvements of the intercity and international transport system in Egypt.⁴ At present, these systems are largely adequate to meet demand. The overall adequacy of the system means that transport system development, with the exception of local roads, ought to receive less emphasis during the Third Five-Year Plan period than previously. However, because local roads, including urban roads, are not generally in good condition, these roads need to receive more emphasis than in the past.

9.6 Table 9.1 (above) identifies the transport sector investment proposals by sector organization for the Third Five-Year Plan, as well as the investment levels that have been approved by the MOP. The World Bank's recommended investments are indicated in Table 9.9 (below).

Main Sectoral Issues

9.7 Despite the fact that there have been quite significant accomplishments in the Egyptian transport sector during the First and Second Five-Year Plans, several issues remain to be dealt with during the Third Five-Year Plan. These issues, related to intercity, international and urban transport, are identified below.

9.7.1 Road Maintenance Funding. Neither intercity road maintenance nor urban road maintenance have been adequately funded in the past. Mechanisms already exist for funding intercity road maintenance through toll collections and earmarked funds from fuel taxes, but legal restraints on adjustments have resulted in limiting the direct funding of intercity road maintenance to about 80 percent of routine maintenance needs and just 15 percent of overall maintenance needs. Governorates have no direct funding channels for road maintenance and, accordingly, local road maintenance is especially poor.

9.7.2 Vehicle Weight Limitations. Large numbers of vehicles currently are exceeding the legal weight limits for intercity roads. RBA and the police might attempt to enforce current limitations, or consideration might be given to raising the weight load limitations on vehicles.

⁴ The combined transport, communications and storage sector of Egypt took approximately 26 percent of public sector investment in the First Five-Year Plan and nearly 25 percent of the total in the Second Five-Year Plan. Transport is thought to represent roughly three quarters to four fifths of the totals for the combined sector.

- 9.7.3 RBA Construction Companies. Road construction standards are satisfactory and costs appear to be reasonable. Nevertheless, road construction and maintenance quality gains and costs savings could be realized by going to competitive bidding for most contracts. If public sector contractors are to compete effectively under competitive bidding conditions, the management of these firms needs to be free to make appropriate business decisions of all types, especially staff-related and investment decisions. Private contractors should be allowed to compete on equal terms with RBA public sector contractors.
- 9.7.4 Intercity Road Construction Authority. The responsibility for intercity road construction is divided between RBA and MDHPU. This division causes problems for network planning and delays coordination and the application of unified standards.
- 9.7.5 Public Sector Trucking Companies. The Government's continued offering of trucking services is questionable. The private sector would be more effective in providing such services.
- 9.7.6 Public Sector Bus Company Fares. Public sector bus company fares have been insufficient to cover the costs of operation. The subsidization of services makes it difficult for the private sector to compete and has, therefore, tended to inhibit the private sector's initiation of competing services.
- 9.7.7 Railway Operating Losses. Actions that have been taken in order to eliminate railway financial losses within a few years have not been adequate, and ENR is projected (by TPA) to suffer a FY93 loss in excess of LE 400 million. Railway intercity transport services are, under the SAL agreement, no longer to be subsidized. The ending of such subsidization and the discontinuance of some branch line operations could make ENR more profitable.
- 9.7.8 Waterway Transport. The use of the Nile River and of the major canals of Egypt as transport arteries declined substantially as Egypt's road and railway systems were developed. Nevertheless, the potential for increasing their role still exists.
- 9.7.9 Ministry of Civil Aviation. MCA is currently an associate ministry of the Ministry of Tourism. Air transport services are essential to the development and operation of the tourism industry, but air transport also has other important demands to serve. It is essential that the development priorities within the air transport sector reflect all such demands. It would, therefore, be useful for the planning

and coordination of all air transport operations and projects if MCA were to become an associate ministry of MOT rather than of the Ministry of Tourism.

9.7.10 Urban Transport Rationalization. Cairo is an urban area with 13 million inhabitants. Considerable efforts were made during the First and Second Five-Year Plans to cope with the growth of transport demand in the Cairo metropolitan area, including the construction of the first line of the Cairo metro and the construction of several major road projects. Nevertheless, traffic congestion continues to occur in the metropolitan area and public transport services are inadequate. In Alexandria as well, the urban transport network and public transport services are not able to accommodate demand. In several smaller cities, road networks are very poorly maintained. Existing road capacity is also inefficiently utilized. The rationalization of urban road network use would require: the enforced restriction of on-street curb parking; greatly improved traffic management; the possible end of most public bus service subsidization, thereby inducing the private sector to initiate large bus services, which would reduce the reliance on taxis for transportation services; and the redesigning of some bus services to minimize passenger travel distances and times.

B. Public Sector Investment in Transport

Introduction

9.8 To assess the desirability of the individual investment proposals for the various transport subsectors, it is useful to distinguish among seven types of investment projects: (i.) periodic maintenance and rehabilitation; (ii.) major ongoing projects that need to be completed according to schedule if potential good returns on investment are to be realized; (iii.) ongoing programs that can be phased without significantly affecting levels of returns on investments already made; (iv.) projects and programs that are in preparatory stages and could be interrupted or deferred without substantial adverse effects on the overall investment; (v.) new projects to maintain the existing capacity or service standards of current systems or facilities; (vi.) new projects to expand capacity and/or upgrade service quality of existing systems and facilities; and (vii.) studies. The first and second of these projects should be implemented without delay; combined, they represent the basic public investment program of the transport sector. All other projects could be deferred if necessary, with the exception of studies. Few of the new project investment proposals for the transport sector have been studied; significant efforts to conduct or update studies are needed before final decisions can be made on the desirability of the proposed projects.

9.9 The following paragraphs discuss proposed investments in the intercity road system, the railways, Egyptian waterways, seaports, air transport and the transport systems of Cairo and Alexandria. This review of proposed transport investments takes into account the adequacy or inadequacy of transport systems and facilities at the present time, traffic growth prospects and all the issues identified earlier in this chapter, as well as the general priorities for the different types of projects discussed above. The concept of "basic" (or "core") investment program is used to identify absolute minimum investment programs: where railways are concerned, the basic investment program for the Third Five-Year Plan comprises mainly an essential program to rehabilitate main line locomotives, since the failure to carry out such a program would considerably reduce the railway's capacity for accommodating traffic in the short- to medium-term.

Intercity Roads

9.10 The top RBA priority is to obtain sufficient funds for intercity road maintenance. However, because both routine and periodic road maintenance are dealt with in its annual recurrent budgets, RBA has not proposed including any periodic maintenance of roads in its Third Five-Year Plan investment program. Because RBA has consistently been unable to obtain sufficient funds for road maintenance in the past, action needs to be taken to ensure that funds will be adequate in the future. A useful first step would be to change the existing rules and regulations and allocate the required funding as part of the RBA investment program. RBA indicates that periodic maintenance of the intercity road network requires financing on the order of LE 205 million per annum (an amount that is likely to rise in real terms as prices of petroleum products, including asphalt, are brought into line with world levels over the coming few years). Based on RBA estimates of annual funding requirements, an amount of LE 1,025 million needs to be added to the RBA investment program to give assurance of adequate intercity road maintenance during the Third Plan period.⁵

9.11 Basic Investment Program. Of the LE 814 million investment requested by RBA (Table 9.1), approximately LE 218 million represents the investment required to complete ongoing road and bridge projects. Of the latter, LE 57 million is for the completion of three bridges over the Nile River, and the remaining LE 161 million is for the completion of a variety of road projects, principally the widening of some sections in the Delta. These ongoing investments represent the minimum level of

⁵ Although RBA estimates of funding requirements are used in this discussion, more precise estimates of year-by-year requirements would be desirable. These should be based on annual condition surveys, including roughness measurements on road sections in no better than fair condition. It would also be useful for identifying periodic maintenance needs to monitor standard axleloads (approximations) over pavements. On the basis of such information, RBA could identify for each five-year investment plan the road stretches that would be likely to deteriorate to unmaintainable condition in the absence of periodic maintenance efforts.

activity that should proceed in the intercity road subsector during the period of the Third Five-Year Plan.

9.12 Other RBA Investment Proposals. RBA proposes to undertake LE 596 million of new projects during the period of the Third Five-Year Plan. The Third Plan allocated only LE 445 to RBA activities. The principal projects are identified and briefly discussed below:

9.12.1 Cairo-Assiut Road. This project, the construction of a new 315-km road and the upgrading/construction of 210 kms of connecting roads, is the only RBA project proposal for which a feasibility study has been done. The study was conducted in 1986 and found that the construction of a new road to the west of the developed area along the west bank of the Nile, between Cairo and Assiut, would bring an economic rate of return of 17 percent. That estimate was based on the potential for road-user cost savings, and did not place any value on the environmental effects of reducing a large volume of traffic from the developed area. The total project cost is estimated by RBA at LE 143.5 million while the Third Plan allocated only LE 106 million. Funding of LE 60 million of foreign exchange costs has been arranged with the Government of Saudi Arabia.⁶

9.12.2 Naga Hammadi-Armant Desert Road. This project would provide a direct 60-km connection between the Naga Hammadi area and the Armant/Luxor area, producing a saving of 70 kms when compared with travel along the Nile valley road. No feasibility study has been done, though preliminary calculations indicate that the economic rate of return would be acceptable.⁷ The project is not included in the Third Five-Year Plan because of financial constraints.

9.12.3 Hamoun-Baltim Road. The reconstruction of 40 kms of roads is estimated to cost LE 10 million. The proposed project,

⁶ Cairo-Assiut Highway Feasibility Study, Wilbur Smith and Associates, September 1986. The study estimated financial costs at LE 117 million and economic costs at LE 155 million, the latter based in part on an exchange rate of LE 1.80 = US\$1.00. If both inflation and the change in the exchange rate are allowed for, the financial costs in FY92 prices should have reached LE 290 million or somewhat higher. There would no longer be as large a percentage difference between the financial and economic costs because the official rate of exchange is now more-or-less in line with the economic rate. The RBA project is essentially the same as the project considered by the study, each involving the construction or upgrading of 525 kms of road and providing all of the road with AC pavement. It appears, therefore, as if RBA might be significantly understating the cost of the project in FY92 prices.

⁷ RBA estimates that 70 percent of Nile valley road traffic would divert to a desert road. AADT on the valley road is now 2500 vehicles, so that as many as 1700 might divert. This is quite possible since the areas at both the north and the south ends of the road have considerable tourist attractions. If 1700 vehicles per day divert, then the potential annual distance saving would be 43 million vehicle-kms. The economic payback period would be less than one year. Because the benefits of diverting to the new road would be high per vehicle of through traffic, the road would be ideal for the collection of tolls. Even if tolls were no higher (on a per-km basis) than they are on the Bilbeis tollroad, annual collections would approach LE 2 million.

which is important to domestic tourism, is not included in the Third Five-Year Plan allocation because of financial constraints.

- 9.12.4 Bridge Projects. Four new bridges over the Nile River are proposed by the Egyptian Bridge Authority to be constructed during the period of the Third Five-Year Plan. Bridges at Aswan and Assiut are estimated to cost between LE 31 and LE 33 million each. Bridges at Shirbin and Zifta in the Delta will cost approximately LE 25 million each. The bridges are needed because existing structures used for crossing at these locations are old, narrow, with low-bearing strength, and in poor condition. The Aswan bridge, moreover, is needed to support the continuing growth of tourism in that area. The Third Plan has approved only two bridges, one at Assiut and one at Zifta, for a cost of LE 65 million. MOP has informed the World Bank that bridges at Shirbin and Aswan, at a cost of LE 65 million, although not included in the final plan, have been added, to be financed through savings in other parts of the plan.
- 9.12.5 Grade Separations. Crossings at Kafr El-Zaiyat, Talkha, El-Aiyat and Qena are to be constructed. The combined cost for the four overpasses is estimated at LE 40 million. Although no feasibility analyses have been done to assess this investment, the traffic hazards and congestion generated each time a train passes make implementation desirable. The overpass at Qena could be deferred until after the Third Five-Year Plan period. The Third Plan has approved only the bridges at Kafr El-Zaiyat and El-Aiyat, for a cost of LE 20 million.
- 9.12.6 Programs for Minor Improvements. Several programs ought to be at least partially implemented during the Third Five-Year Plan. These programs covering minor improvements include the strengthening of weak bridges, the improvement of vertical road alignment and drainage in areas of flash flooding, the widening of narrow roads, the paving of shoulders, the provision of road furniture (signs, markings, railings, etc.) and the landscaping of areas alongside roads. RBA proposed investments for these programs amount to LE 52 million for roads and LE 12 million for bridges and should be included in the plan.
- 9.12.7 RBA Headquarters. RBA office space, located in the heart of Cairo, is currently unsatisfactory for the purposes of the organization. RBA estimates the cost of a fully equipped and furnished headquarters building, located in Nasr City, to be LE 7.0 million. After the needed evaluation by MOP, the required amount should also be included in the RBA Third Five-Year Plan investment program.

9.13 Summary of Proposed RBA Third Plan Program. Table 9.2 (below) summarizes the proposed RBA investment in the intercity road network under the Third Five-Year Plan. With regard to the overall scope of the road sector investments proposed, and particularly in relation to those proposed for other transport subsectors, it appears that the level of investment in the road sector is somewhat constrained; it may be desirable to examine some of the projects proposed which have not been included in the plan to see if their inclusion would be worthwhile once detailed studies have been carried out.

**Table 9.2: Proposed Investments by Roads and Bridges Authority
During the Third Five-Year Plan
(estimated costs, constant FY92 prices; LE millions)**

	RBA	MOP Preliminary ¹	World Bank	MOP Final Plan
Periodic Maintenance/ Rehabilitation	0 ^a	0	1,025 ^a	0
Basic Investment				
Ongoing projects	218	218	218	128
Other Investments				
Cairo-Asefut road	144	144	144	106
Naga Hammadi-Arment road	12	n.e.	12	0
Hamoun-Baltim road	10	n.e.	10	0
Road-widening projects ²	38	n.e.	10	59
Bridges ³	113	n.e.	64	65
Grade separations	40	n.e.	30	20
RBA headquarters building	7	n.e.	7 ^b	0
Minor Improvements, studies and other	232	n.e.	37	67
Subtotal, Other Investments	596	209	314	317
Total Proposed Program	814	427	532	445

n.e.: Not estimated.

Sources: MOP and RBA documents and interviews.

¹ MOP Preliminary total was estimated by the Bank from a total for the three service authorities of MOT; confirmation has not been obtained from MOP on how the total is divided. The Bank presumes that ongoing projects will be funded and that the Cairo-Aced road project is also included since foreign exchange financing has been arranged.

² The final plan includes 5 expansion/new projects for road widening and strengthening. It is not clear if RBA considers any of these to be Ongoing Projects.

³ MOP's willingness to fund two additional bridges (at Aswan and Shirbin) at a total cost of LE 65 million to be financed out of savings realized elsewhere is not reflected in these figures.

^a RBA has estimated its funding requirements for periodic road maintenance at LE 205 million per year, but it has not included any proposal for this expenditure in its Third Plan program since funding has heretofore been obtained on a year-by-year basis, in the RBA recurrent budget. Funds have consistently been insufficient. RBA agrees that shifting the periodic maintenance/rehabilitation item to the capital budget would be desirable.

^b Based on RBA's estimate.

9.14 Sources of Financing. RBA toll revenues and earmarked funds from fuel taxes will not be sufficient even to cover routine maintenance on the intercity road network. The Government has recognized, however, that the law that established the Alexandria-Cairo desert toll road was flawed, since it included no mechanism for adjusting toll levels. Since that law was passed three other toll roads have been established and the Minister of Transport has been provided with the authority to adjust toll levels as necessary. If the Alexandria-Cairo toll road law were amended, toll revenues in real terms could be expected to immediately increase by at least double. With the addition of a new Cairo-El-Faiyum toll road, in 1992, toll revenues alone might be expected to become nearly equivalent to the funding levels required for intercity network routine maintenance (estimated by RBA at LE 50 million per annum).⁸

9.15 The Government specified an absolute amount per unit of fuel sold to be earmarked for the fuel taxes; however, no mechanism was adopted for the adjustment of this amount through time. It would be desirable for the Government to specify a percentage of fuel costs to be earmarked for intercity road maintenance. Together with higher toll revenues, this additional RBA-generated income would then be approximately equivalent to the annual maintenance funding requirements of total intercity road network (LE 1,025 million).

9.16 The Government is essentially committed to providing the LE 218 million necessary for the completion of Second Five-Year Plan projects and arrangements have been made for LE 60 million to cover the foreign exchange costs of the Cairo-Aced Road project. That leaves a funding gap of LE 524 million if the program identified by the World Bank as desirable for the Third Five-Year Plan period is to be fully implemented. RBA indicated that virtually all of this funding gap would be financed locally.

Railways

9.17 Third Railway Project. The Third Railway Project prepared by the World Bank has never been negotiated. The project's base cost in 1990/91 prices amounted to LE 1,048 million, and the project would entail periodic maintenance/rehabilitation, as described below:

9.17.1 Track Renewal. Nearly 45 percent of the Third Railway Project investment funds are directed at track renewal. A

⁸ Toll revenue currently is just LE 18 million per year. Besides the desirable legislation amendment to permit the adjustment of toll levels on the Cairo-Alexandria desert road (immediate quadrupling would be desirable and would be in line with other existing toll charges on a per-vehicle-km basis), RBA has options for converting a few existing roads into toll roads. Even more promising, if acceptable to the Government, would be the opportunities for constructing new bridges as toll facilities. The Aced and Aswan bridges (see para. 9.12.4) could each generate not less than LE 3 million in the year of their opening, and LE 5 million would be an easily obtainable total. Thus, they could pay not only for all of their costs of maintenance and operation but also for all debt service after the year of opening. (The same may not be true for proposed bridges in the Delta because traffic would have better non-toll options if toll levels were viewed as onerous by some road users.)

total of 1,000 kms of track are to be renewed, including all of the 950 kms that were in such poor condition in 1990 that train speed restrictions had to be imposed.⁹

- 9.17.2 Locomotive Overhaul. Approximately 38 percent of project funds are directed toward the rehabilitation of a significant proportion of the ENR locomotive fleet. Although ENR owns a sizable fleet of locomotives (925), the large majority require either a major overhaul or scrapping. The Third Railway Project will provide the spare parts necessary to perform 12-year overhauls (extending locomotive life for another 12 years) of 529 main line locomotives.
- 9.17.3 Freight-Car Brakes. Although only 3.5 percent of the Third Railway Project funds are to cover the costs of freight-car brake components, that amount will provide brakes for 5,000 freight cars. Because of brake problems, an estimated 70 percent of ENR freight trains have had speed restrictions placed on them, significantly lowering track capacity in comparison to trains operating at normal speeds.
- 9.17.4 Block Train Operations. Most railway freight traffic is accommodated in block trains, but these operations are not as efficient as they ought to be. Approximately 9 percent of the Third Railway Project funds will be directed at implementing a variety of improvements to make these block train operations more efficient. These improvements include providing or improving sidings and loading/unloading facilities, establishing distribution centers for some commodities and developing a comprehensive and reliable inspection system.
- 9.17.5 Other Third Project Components. The remaining Third Railway Project funds (nearly 5 percent) are for technical assistance, improvement of a switch workshop and the computerization of train reservations and ticket sales.
- 9.18 Basic Investment. ENR has several major improvement projects, including rail line doubling, underway at the beginning of the Third Five-Year Plan period. These projects will require a total of LE 208 million to complete. Adjusting the locomotive rehabilitation

⁹ The SAR for the Third Railway project indicates that during the 9-year period FY82-FY90, ENR renewed the rail over 2,160 route-kms of its system, an annual implementation rate of 240 route-kms of track renewal. FNR added approximately 350 route-kms to its system over the same period, so that the total route-kms of new rail, at the beginning of FY91, were slightly more than 2,500 route-kms. In addition, the Ministry of Industry constructed 590 route-kms during the 1980s and is currently constructing another 350 route-kms. Thus, the total system is about to become 5,190 route-kms, of which at least 3,450 route-kms will have rail in good condition. (This total does not include completed renewal efforts by ENR in FY91 and FY92). By financing an additional renewal program for 1,000 route-kms, the Third Railway project will nearly complete the necessary renewal. Some portion of the track still not renewed after the completion of this Third Railway component will consist of track on which services might desirably be discontinued for reasons of financial losses.

component of the Third Railway Project cost to LE 562 million in 1991/92 prices,¹⁰ and adding the LE 208 million required for the completion of major projects, the basic investment program for ENR for the Third Five-Year Plan period comes to LE 770 million.

9.19 Other Proposed Railway Investment. During the preparation of the Third Railway Project, a larger, incremental investment program for the FY92-FY97 period was discussed with the World Bank, and ENR has based its investment proposals for the Third Five-Year Plan period on this larger program. Most of the incremental program is not immediately needed, and, in case the Third Railway Project is approved but financing is not available at reasonable costs, these incremental investments could be postponed until after the Third Five-Year Plan.

9.20 Summary of Proposed ENR Third Five-Year Plan Investment Program. Table 9.3 presents a summary of proposed ENR investments, including the incremental program. Also shown in the table are the World Bank's estimates of what might be desirable given the financial constraints for the Third Five-Year Plan period. These estimates take into account the fact that the implementation of the Third Railway Project is a possibility and that the investments allocated to the incremental program might be reduced because of lack of urgency and inadequacy of funding.

Table 9.3: Proposed Investments by the Egyptian National Railways During the Third Five-Year Plan (estimated costs; LE millions)

	ENR	MOP Preliminary	World Bank	MOP Final
Basic Investments				
Locomotive Rehabilitation and Ongoing projects	562	562	562	n.e.
Subtotal, Basic Investments	770	770	770	708
Other Investments				
Modernization of signaling	494	n.e.	140	302
Workshop improvement	109	n.e.	67	35
Track renewal and upgrading	312	n.e.	696	445
Acquisition of rolling stock	1,307	n.e.	150	700
New line to Salum	393	n.e.	0	175
Other investments and studies	199	n.e.	230	135
Subtotal, Other Investments	2,814	1,330	1,283	1,792
Total Proposed Program	4,492	2,100	2,053	2,500

n.e.: Not estimated.

Sources: MOP tables on MOT investment program proposals and the SAR for the Third Railway Project.

¹⁰ The adjustment was made using factors of 1.06 for foreign exchange costs and 1.2 for local currency expenditures.

9.21 Sources of Financing. The agreement for the Third Railway Project states that ENR will finance approximately 11 percent of the entire project, and 45 percent of the local currency costs, from its own resources. This level of ENR financing is only possible only through (i.) reductions in government subsidization of operations; (ii.) adjustments upward in railway tariff levels, in real terms; and (iii.) the elimination of branch line services that have little potential for ever becoming profitable. Currently, the Government permits ENR to increase tariffs by up to 15 percent per annum. As inflation begins to moderate (which is anticipated by both the Government and the World Bank), the allowable annual tariff rises, together with some reductions in staff, should result in diminishing ENR financial losses; larger incremental increases in tariffs are needed to end transport service subsidization by FY98, as agreed in the SAL.¹¹

9.22 The Transport Planning Authority (TPA) projects an ENR loss on operations of LE 402 million for FY93.¹² The delay in start-up of the project casts doubt as to whether it can actually be fully implemented during the Third Five-Year Plan period. Any further delay could seriously affect ENR operations, chiefly because of the prospective lack of main line locomotives sufficient to keep to service schedules.

Waterway Transport

9.23 Basic Investment Program. The basic investment program for the River Transport Authority (RTA) includes completing a headquarters building and constructing a stevedoring station for LE 3.5 million; improving the navigation channel between Cairo and Aswan and equipping its maintenance stations at a combined total cost of approximately LE 11.2 million; and conducting a maintenance program in the Delta at an estimated cost of LE 1.3 million. The basic RTA investment program should also include all necessary periodic maintenance of the navigation channels of the Nile River and the navigable canals, the maintenance of locks and public rivercraft berthing facilities and the equipping of RTA maintenance stations. Travel conditions on the Upper Nile River are, in fact, quite poor, and threaten to impede the further growth of tourism.¹³ The entire basic program totals about LE 16 million.

¹¹ The World Bank projects that GOE subsidies to the railways will continue in the range of LE 198-334 million, in each year of the FY92-FY98 period. The opportunity cost of continuing this support in lieu of fully funding road maintenance in Egypt is tremendous. Roads accommodate more than 90 percent of all freight movements (in ton-km terms) and two thirds of passenger travel by public transport, as well as virtually all passenger transport by private transport.

¹² This loss, which excludes a projected loss of LE 73 million for the Cairo metro, currently being operated by the Egyptian National Railways, would be LE 87 million higher than projected for FY93 by the Third Railway SAR.

¹³ The tourism action plan report indicates that there are very serious problems for the Nile River cruise industry, including an inadequately maintained navigation channel and insufficient berthing areas and facilities. The study even recommends the establishment of a new governmental organization to ensure that infrastructure is adequate for the cruise industry. A new organization is probably not needed and would, in

9.24 Other Proposed Investments. Public sector investment in waterway transportation has been fairly modest in the past, but a significant increase is proposed for the future to permit the waterways to realize their potential role in the nation's transport system. A study was done in 1986 that identified a potential transport role for the Damietta branch of the Nile to permit river transport to directly serve the new port of Damietta. The cost is estimated at LE 125 million, of which LE 14 million was spent during the Second Five-Year Plan period in preparation for the project. A canal connecting the port to the Damietta branch has already been constructed. RTA is proposing that during the Third Five-Year Plan period LE 109 million of the remaining LE 111 million be spent, enabling navigation on the Damietta branch to commence before the end of the plan period.

9.25 RTA is also considering alternative schemes that would permit river transport to directly serve Port Said through the Ismailia and Suez Canals. The Ismailia Canal is 112 kms in length, of which only the first 25 kms from Cairo are currently being used for navigation. Locks would be required at the eastern end of the Ismailia Canal to permit rivercraft to move to and from the Suez Canal. The Suez Canal Authority (SCA) has raised no objection to this proposal, indicating only that rivercraft would need to abide by the operating rules and regulations of the Suez Canal. The cost of this scheme is LE 82 million, of which LE 9 million would be used for the improvement of navigation on the first 25-km section of the Ismailia Canal; the remaining LE 73 million would be required for improving the eastern 87-km section of the canal and for the provision of locks. The investment for the first 25 kms, according to RTA, should be made during the Third Five-Year Plan period, since it would be useful for serving the industrial area to the northeast of Cairo. A study is needed to determine the desirability of the "second phase" of this scheme.

9.26 The Third Five-Year Plan also supports the construction of a 1.5-km canal connecting the Rosetta branch with the Nubariya Canal. The canal would provide rivercraft with a more direct route between Kafr El-Zaiyat and the estuary, thereby lowering costs and perhaps increasing the proportion of port traffic accommodated by waterway transport. Improvements along the Nubariya Canal route might also be of importance for domestic traffic. RTA estimates development costs at approximately LE 22 million and would welcome a study to identify the full potential of the route and to assess the desirability of development.¹⁴

any case, require time to develop. Instead, RTA needs to become involved in planning for Upper Egypt tourism and should be held responsible for Nile River transport infrastructure.

¹⁴ RTA has made another proposal to improve waterway transport service to ports. The accommodation of imported coal and coke is about to be shifted from the port of Alexandria to its sister port of El Dikheila, and volumes are about to be increased to 100,000 tons per month. It is anticipated that the railway will move approximately half of this traffic to Helwan, but that waterway transport will need to be relied upon to accommodate the other half. RTA is proposing a scheme to avoid the double-handling that is necessary when coastal vessels must be relied upon to move coal/coke between the port and the Rosetta estuary. The scheme involves the construction of a 7-km canal to Lake Maryut and the development of a lake port there, and some reconstruction of both road and railway bridges would be required. All of this might

9.27 Summary of Proposed RTA Third Plan Investment Program. The proposed RTA investments for the Third Five-Year Plan period are shown in Table 9.4 (below). Studies are needed to determine (i.) alternative schemes for waterway transport to Port Said and (ii.) the potential transport role of the Nubariya Canal for international trade, as well as domestic cargo, at Alexandria. There is also a need for the RTA to become more involved in planning for Nile tourism.

Table 9.4: Proposed Investments by the River Transport Authority During the Third Five-Year Plan
(estimated costs; constant FY92 prices; LE millions)

	RTA	MOP Preliminary	World Bank	MOP Final
Basic Investment Program	16	16	16	7
Other Investments				
Damietta Branch development	109	109	109	109
Nubariya Canal route development	22	0	0	10
Ismailia Canal route development	9	0	0	0
Other improvements	0	0	5*	2
Subtotal, Other Investments	140	109	114	122
Total Proposed Program	156	125	130	129

n.e.: Not estimated.

* To conduct studies, including alternatives to Port Said and the Nubariya Canal.

Note: MOP has not confirmed the estimate of LE 125 million for RTA; nevertheless, the Government has given approval for the implementation of improvements of the Damietta branch.
Sources: MOP tables and RTA interview.

9.28 Sources of Funding. RTA does not now have any source of revenue that would permit it to contribute to funding the waterway transport investment program. Just as in the case of RBA, it is desirable that RTA be assured of sufficient funds each year to permit it to carry out all desirable maintenance on waterway navigation channels, locks, public loading/unloading areas and facilities, navigational aids and any other facilities associated, now and in the future, with waterway transport. Fees from users, collected at locks and for licensing, as well as a possible share of fuel taxes, should be sufficient to cover all operational and maintenance needs. Major capital projects, such as improvements of the Damietta branch and the Ismailia Canal, should be expected to continue to require funding from Government budgetary allocations.

be possible, but the scheme would also require the construction of a 2.5-km conveyor belt through the city of Alexandria, which is probably a "non-starter." Excluding the cost of urban land, which of course would be costly, RTA estimates the cost of the scheme at LE 37.5 million. RTA estimates annual transport cost savings at LE 1.5 million, which would not be sufficient to justify even the construction costs, much less the full capital costs (including land acquisition) and the environmental costs associated with the movement of 600,000 tons of coal per year through a highly urbanized area.

Maritime Transport

9.29 Basic Investment Program. Public sector investment in maritime transport includes the investment programs of all of the authorities and companies under the Ministry of Maritime Transport (MMT) that operate in the various Egyptian ports, as well as those of Egypt Navigation. Ongoing investment projects will require LE 259 million for completion during the Third Five-Year Plan period. The ongoing projects include: (i.) LE 152 million for the Ports and Lighthouse Administration (PLA) to maintain and rehabilitate maritime safety and training infrastructure and equipment; (ii.) LE 47 million for the completion of the first phase of Damietta port development; and (iii.) approximately LE 60 million for the completion of various projects for expanding the capacity and improving the operations of Red Sea ports. The total basic investment program amounts to LE 281 million, out of which LE 259 million is required to complete ongoing projects; LE 2 million is required by PLA for its own purposes; and LE 20 million is required for the repaving of breakwater, quay and storage area surfaces. The Third Plan has allocated LE 165.5 million for PLA.

9.30 Other Proposed Sea Transport Investments. The investment proposals and groups of investment proposals of the various public sector sea transport authorities and companies are identified and briefly discussed below.

9.30.1 Equipping of the El-Dikheila Container Terminal. The El-Dikheila container terminal is designed to accommodate the largest, most technologically advanced containerships, viz., the third and fourth generation containerships; these cannot now be effectively served at any Egyptian port. By serving these vessels, the average shipping cost for containerized Egyptian exports and imports can be expected to decline in real terms. The terminal is already constructed but must be fully equipped, if the potential benefits of the terminal are to be realized. A total investment of LE 200 million is being proposed for the Third Five-Year Plan period to equip the terminal. This is a large investment and is more than is required to initiate services at the terminal (in 1993). The full investment might be phased in over a period of years, as traffic grows at the terminal, and the full complement of equipment becomes necessary. It would be in line with enunciated Government policy to invite the private sector to invest in and operate the new terminal, or at least to participate in the investment and operation of the terminal. However, to ensure that the terminal will be fully operational before the end of 1993, allowance needs to be made for up to LE 150 million in public sector

investment, during the Third Plan period.¹⁵ The final plan allocates LE 332 million for the Ministry of Industry project (no. 206400), completion of El-Dikheila port, first phase.

9.30.2

Equipping Other Mediterranean Port Container Terminals.

Besides the El-Dikheila container terminal, proposed investments in container terminal handling equipment for the other major Mediterranean ports (Alexandria, Damietta and Port Said) totals LE 193 million. Most of this investment would be self-financed. However, there is likely to be significant diversion of container traffic from other Mediterranean ports to El-Dikheila, once the terminal at that port is fully operational. (This diversion is not only likely, but also highly desirable from the standpoint of the Egyptian export sector.) Such diversion of container traffic to El-Dikheila will reduce whatever need there might otherwise be for investment in container-handling equipment in other ports. It is desirable, however, that the other Mediterranean ports remain competitive with El-Dikheila in handling first and second generation containerships, roll-on roll-off (RO/RO) vessels and other container-carrying vessels. In this way, vessel waiting times and sea transport costs for Egyptian exports and imports will be minimized. Due to inadequate information, it is not possible to identify precisely how much investment in container terminal equipment is desirable during the Third Five-Year Plan, but a total of LE 96 million, i.e., half of what has been proposed, might be reasonable. This level of combined investment in the container terminals of the three ports should be largely self-financiable.

9.30.3

Expansion of Handling Equipment and Storage Facilities.

Approximately LE 207 million is proposed for expanding handling equipment and storage areas for general cargo berths, most of which could be self-financed. The proposed level of investment appears excessive in view of the existing overcapacity of the port system and the trend to containerize most non-bulk commodities. Moreover, the investment might be shifted from the public to the private sector, depending on the extent port facility leasing arrangements might be opened up to private sector entities. Equipment required at a dedicated (single user) berth might be expected to be financed by that user. LE 100 million in public sector investment would, therefore, probably be sufficient to effectively meet all cargo-handling and

¹⁵ The post-evaluation report indicates that approximately US\$37 million for commercial berth equipment under the El Dikheila project was not utilized. Most of this investment would have been for the container terminal, and the report projected that the required equipment would be acquired and installed at the terminal in 1993. The estimate of LE 150 million for Third Five-Year Plan investment at the terminal allows for the acquisition of a modest amount of additional equipment by the end of the period.

storage service demand at non-container berths, but the actual total could be much less than this if private sector cargo handlers and port users contributed to investments in the ports.

- 9.30.4 Redevelopment of Alexandria Berths. Although Alexandria port does not require an expansion of capacity, the retention of existing capacity needs to be ensured. The Alexandria Port Authority (APA) indicates that portions of the port's existing quay are becoming less useful because of constraints on the size of the vessels that can be accommodated alongside. In order to continue accommodating significant numbers of vessels, these portions need to be extended outward to deeper water; this would not only permit the port to accommodate larger vessels alongside, but would provide adequate storage areas behind the berths. The APA has divided the required investment for this purpose into two projects: the conversion of existing finger piers for the accommodation of general cargo, at a cost of LE 14 million; and the upgrading of existing grain berths, currently serving vessels of up to 32,000 deadweight tons (dwt), to berths capable of serving vessels of up to 60,000 dwt, at a cost of LE 7.5 million. These projects are necessary to save on associated shipping costs and to maintain APA organizational efficiency and morale by ensuring that no portions of the existing port fall into disuse. Accordingly, approximately LE 22 million should be included in the Third Five-Year Plan program for the redevelopment of Alexandria port.
- 9.30.5 Construction of Safaga Quay. The Red Sea port of Safaga needs to be developed to accommodate larger vessels for the export of phosphates and the import of grains; the Red Sea Ports Authority (RSPA) has proposed the construction of a new quay at the port at an estimated cost of LE 13 million. Although the port operates at a profit, it would be desirable to have any dedicated (single user) facility financed by that user or by a private sector entity that would enter into an agreement with the user to provide and operate the required port facility.
- 9.30.6 Construction of a Sharm El-Sheikh Passenger Quay. The Red Sea ports serve not only volumes of cargo, but also some domestic and international passenger traffic. The Tourism Development Authority (TDA) and its parent ministry are emphasizing development of the southern coastal regions of the Sinai for tourism during the Third Five-Year Plan period. The provision of the proposed passenger facilities at Sharm El-Sheikh port would support such tourism development. The cost is estimated at approximately LE 12 million.

9.30.7 Acquisition of Port Authority Vessels. Ports require fleets of tugboats, pilot boats and service boats to assist seagoing vessels calling at the ports. The port of Alexandria has an old, not entirely usable, fleet, and the initiation of a replacement program is becoming an urgent matter.¹⁶ Other ports also require some investment in vessels. Although no justifications of proposed investments in vessel fleets are available, an amount of LE 123 is proposed for the acquisition of vessels in the Third Five-Year Plan period. Whereas that level of investment might be desirable in the absence of public sector investment constraints, in the face of such constraints, a smaller sum is appropriate. LE 50 million could be sufficient to meet urgent new vessel requirements, including the minimum needs of Alexandria. The Ministry of Maritime Transport (MMT) should evaluate and prioritize proposed investments, before approval is given to any of the port authorities to acquire new vessels.

9.30.8 Implementation of Minor Projects. Funds are required for a variety of relatively minor projects, including dredging some locations, improving and furnishing administrative buildings and replacing workshop equipment. The need for staff buses has been mentioned by more than one organization, but their purchase is not desirable from the standpoint of urban area traffic operations, and ought not to be approved. A proposed tourist hotel, to be constructed by the Port Said Port Authority (PSPA) at a cost of LE 15 million, does not seem to be an appropriate investment either, especially at a time when the public sector is successfully selling such assets. A total of LE 122 million is proposed by MMT for minor projects; half that amount would appear to be a more reasonable estimate of real needs.

9.31 Summary of Proposed Sea Transport Third Five-Year Plan Investment Program. Table 9.5 below shows the proposed investment in the sea transport sector (excluding Suez Canal Authority investment) during the Third Five-Year Plan.

9.32 Sources of Funding. Continuing Government support to complete LE 259 million in ongoing investment projects is essential, and a supplemental LE 2 million for the Ports and Lighthouse Authority (PLA)

¹⁶ The port of Alexandria has a fleet of 17 tugs, 11 pilot boats and 11 service boats, and nearly all of these vessels are at or near the end of their service lives. Normally such vessels, when highly utilized (as all of these have been), have economic lives of 7 to 10 years. The newest of Alexandria's vessels date from 1980, and a few date from the 1960s; most of the vessels were acquired during the 1970s. Some of the pilot boats, whose function it is to guide seagoing vessels into and out of the harbor, are no longer seaworthy and, therefore, cannot leave the harbor. APA is proposing to replace only 3 tugs, 2 pilot boats, and 6 service boats, at an estimated cost of LE 15 million, during the Third Five-Year Plan; this would appear to be a minimum required investment for this purpose.

will also be needed. Otherwise, self-financing for projects and private investment might be sought, especially in the case of the El-Dikheila container terminal. Beyond the near-term requirements of PLA for funds for the maintenance of maritime safety infrastructure, a mechanism might be established for ensuring that PLA regularly obtains sufficient funds for this purpose; the institution of "light dues," collected at the Suez Canal and Egyptian ports, would be one possibility.

**Table 9.5: Proposed Investments by the Sea Transport Subsector
During the Third Five-Year Plan
(estimated costs; constant FY92 prices; LE millions)**

	MNT	MOP Preliminary	World Bank	MOP Final
Basic Investment Program	281	281	281	260
Other Investments				
Equipping El-Dikheila container terminal	200	n.e.	150	332
Equipping other container terminals; cargo handling, equipment, storage areas and facilities; acquisition of port vessels	523	n.e.	246	84
Redevelopment of Alexandria port berths	22	n.e.	22	20
Construction of Safage quay	13	n.e.	13	13
Construction of Sharm El-Sheikh passenger quay	12	n.e.	12	12
Implementation of minor projects	122	n.e.	61	45
Subtotal, Other Investments	892	423	504	506
Total Proposed Program	1,173	766	785	766

n.e.: Not estimated.

Sources: MNT and MOP documents and interviews.

Suez Canal

9.33 Basic Investment Program. The Suez Canal Authority (SCA) has a basic Third Five-Year Plan investment program of LE 306 million, comprising two ongoing projects: maintaining the navigation channel through the canal, at a total cost of LE 127 million; and completing the construction of a quay, at a cost of LE 179 million.

9.34 Other Proposed SCA Investments. Other SCA proposals for Third Five-Year Plan investments are identified and briefly discussed below.

9.34.1 Raising the Traffic Efficiency of the Ahmed Hamdy Tunnel. Preparatory work, costing approximately LE 3 million, has been done for this project, and an additional LE 45 million is estimated for project implementation. Implementation

should be contingent on favorable economic feasibility evaluations. The Third Five-Year Plan has not allocated any investment to this component.

9.34.2 Replacing Equipment. SCA requires vessels for its own operations, equipment for its workshops and factories and shore-based handling equipment. SCA is proposing to spend LE 213 million to replace some equipment and to acquire additional equipment. Supporting information for this investment is unavailable, but some significant proportion of the total is undoubtedly desirable to ensure that the canal continues to operate efficiently. A total of LE 150 million is assumed for this purpose.

9.34.3 Widening and Deepening the Canal. SCA estimates that LE 3,500 million is needed for canal widening and deepening to accommodate large numbers of very large crude carriers (VLCCs).¹⁷ The project is not urgent, as it does not serve significant volumes of Egyptian transport demand and revenues from transit traffic have not been falling.¹⁸ Near-term implementation could, therefore, be made contingent upon SCA and Government avoidance of any financial cost or risk. The Third Five-Year Plan has allocated only LE 10 million for the development of the Canal navigational channel.

9.34.4 Supporting Urban Development in Canal Cities. SCA is proposing to spend LE 202 million for urban development in the canal cities of Port Said, Ismailia, and Suez. Three questions need to be clarified in regard to these proposals: what, specifically, is being proposed? what are likely to be the returns on the individual investments? and what should be the role of SCA, if any, in funding these investments? In regard to the last question, the Suez Canal is a national, not a local, asset; it may be desirable, therefore, if the Government, rather than SCA, identify and prioritize the uses of canal revenues over and above what is required to cover all operating costs.¹⁹

¹⁷ This may be an underestimate. The equivalent of LE 6,000 million is a possibility. The Bank has prepared terms of reference for a study to assess the desirability of this project, but the study is not being executed by the Bank, and no results have yet become available to the Bank.

¹⁸ FY91 saw record revenues of LE 1.7 billion, but that was due in part to the Gulf War. Over a longer period, there is no trend towards diminishing revenues, however.

¹⁹ SCA has spent funds on urban development in the three canal cities in the past. During the Second Five-Year Plan, SCA invested LE 228 million in urban development.

9.35 Summary of Proposed SCA Third Plan Investment Program.
Table 9.6 (below) identifies proposed SCA investment for the Third Five-Year Plan period.

Table 9.6: Proposed Investments by the Suez Canal Authority
During the Third Five-Year Plan
(estimated costs; constant FY92 prices; LE millions)

	SCA	MOP Preliminary	World Bank	MOP Final
Basic Investment Program	306	306	306	325
Other Investments				
Ahmed Hamdy Tunnel improvement	45	45	45	0
Replacement of equipment and other works	213	159	150	95
Widening and deepening of Canal	3,500	0	15 ^a	10
Urban development in Canal cities	202	0	0	80
Subtotal, Other Investments	3,960	204	195	185
Total Proposed Program	4,266	510	516	510

Source: MOP.

^a Including LE 5 million to cover costs of undertaking a detailed feasibility study for the widening and deepening of the canal.

Air Transport

9.36 Basic Investment Program. Public sector investment in air transport includes the investment programs of all of the organizations under the Ministry of Civil Aviation (MCA), viz., Cairo International Airport (CIA), the Civil Aviation Authority (CAA), the National Civil Aviation Training Organization (NCATO), EgyptAir and the Meteorological Services Authority (MSA). Of the three training organizations under NCATO, the function of the Misr Flying Institute (MFI) is to train pilots; the Civil Aviation Training Institute (CATI) provides training in most other areas of civil aviation, including air traffic control, telecommunications, navigational aids, radio maintenance, aircraft maintenance, airport engineering, aviation management, computer training and air transport operations; and the Egyptian Civil Aviation Academy (ECAA) expands the development and training capacity of the sector. All of these organizations have some ongoing investment programs and projects, but most could be phased without any serious adverse effects on potential returns on investment. The basic investment program in the sector during the Third Five-Year Plan should include at least the LE 281 million required to complete CAA projects, on which some LE 150 million was spent during the Second Five-Year Plan period. Periodic maintenance and rehabilitation expenditures essential to maintaining safe operations at all 16 Egyptian airports might be added to this

ongoing project investment to form the basic program; these expenditures have not been separately identified.

9.37 Other Proposed Investment in Civil Aviation. The investment proposals of MCA and its various organizations for the Third Five-Year Plan are identified and briefly discussed below:

9.37.1 Third CIA Terminal. The principal project being proposed for the Cairo International Airport (CIA) is construction of a third passenger terminal. MCA has financed from its own resources the final design and operating studies and estimates the cost of the terminal at LE 165 million. MCA believes that capacity constraints are about to appear and that the proposed terminal is the best option for avoiding them. There are ways to forestall capacity constraints for at least a few years, but MCA is probably correct in initiating construction of a third terminal during the Third Five-Year Plan period. Under the assumption that implementation might begin late in the period, LE 30 million might be included in the Third Plan for this project.²⁰ Final plan allocation is LE 51 million.

9.37.2 Other CIA Investments. MCA is proposing to spend LE 36.5 million on CIA runways, taxiways and aprons. Another LE 59 million would be required for existing airport buildings and equipment to: replace Terminal 1 conveyer belts; install a new LE 6 million computer system; modernize the airport's sewerage system; provide a presidential lounge; add toilets in the parking areas; provide a new customs storage area; improve the internal telephone system; and provide a trash burner. Landscaping the airport's periphery has also been proposed at an estimated cost of LE 1.0 million. These investments total nearly LE 97 million, and should probably be implemented during the Third Five-Year Plan period; however, supporting information to justify their inclusion in the plan is not available. LE 50 million is probably justified for the implementation of these priority CIA projects. Final plan allocation is LE 49 million.

9.37.3 Land Acquisition and Fencing. Eventually, CIA will require a third runway, and MCA is proposing that during the Third Five-Year Plan period this land be acquired and fenced (to prevent any squatter development), at a cost of LE 24.5

²⁰ MCA indicates that the design capacities of Terminal 1 and Terminal 2 at CIA are, respectively, 7 and 5 million passengers per annum, but MCA also indicates that the "practical" capacities are 5 and 3.5 million, respectively. These lower actual capacities, MCA maintains, are due to some design inadequacies, security requirements and the 24-hour profile of demand. CIA traffic volumes have now reached the level of 7 million per year, and volumes are increasing at a rate of 7 percent per annum. Terminal 1 has been expanded three times already, and there is no possibility for further expansion; airlines have raised some objections to the design of Terminal 2 (originally intended to go through two expansion phases) so MCA argues that a separate, new terminal offers the best option for increasing total CIA terminal capacity.

million. It should be sufficient, however, to reserve and regularly monitor the area and then take appropriate action if any unauthorized use is made of the land.

9.37.4 New Alexandria Airport. The existing airport at Alexandria is nominally an international airport because it serves a limited number of international flights. The largest aircraft that can be accommodated at the airport is a Boeing 737, and the airport could be improved to accommodate larger aircraft only at a very high cost. The soil at the existing airport has low bearing strength; drainage is poor; and annual maintenance costs are high. A 1984 study identified an alternative site at Ameriya (this location was beyond the western boundary of the Alexandria governorate at the time of the study, but now lies within the expanded area of the governorate). CAA has estimated that the development required to bring the Ameriya airport up to international airport standards would cost LE 187.5 million. The new airport would serve not only Alexandria, but also a large portion of the Delta. Although this project is important, a master plan study should be done before further implementation proceeds. The need for this study probably means that full implementation cannot be expected during the Third Five-Year Plan; an amount of LE 80 million is assumed to be sufficient for this project during the Third Plan period.

9.37.5 Passenger Terminal at Aswan. The passenger terminal at Aswan is a prefabricated structure that is old and wholly unsatisfactory for the high volume of passenger traffic at the airport, which is expected to reach 2.5 million during 1992. MCA has indicated that a Swiss consulting firm has prepared a master plan for the Aswan airport, which includes a permanent terminal estimated to cost LE 65 million. Considering the anticipated continued rapid growth of tourism in Egypt and the importance of Aswan to the tourism industry, this is an important project for inclusion in the Third Plan.²¹ Final plan allocation is LE 44.35 million.

9.37.6 Other International Airport Investment. CAA is proposing fairly substantial investments in international airports other than Cairo, Alexandria and Aswan. The same Swiss consulting firm that prepared a master plan for the Aswan airport also prepared one for the airport at Hurghada, and CAA is proposing to spend LE 26 million on developing that airport during the Third Five-Year Plan period. Larger investments are being proposed for the airports at Luxor,

²¹ TDA indicates that it is valuable to the tourism industry to have good international airports at both Luxor and Aswan so that tourists can arrive at one airport and leave by the other and do not need to retrace their steps.

Abu Simbel and Sharm El-Sheikh, with a smaller investment proposed for the airport serving Taba. The combined total of proposed investment at the five airports exceeds LE 161 million. Because of the emphasis that is being placed on the further development of tourism, some portions of this proposed investment are probably desirable for near-term implementation under the Third Plan. Approvals for investment projects within this group ought to be given only after CAA has prepared the economic and financial analyses necessary for project prioritization. A reasonable assumption would be that half of the proposed investment would be found to be economically justified for near- to medium-term implementation. Final plan allocations for these five airports is LE 94.3 million.

9.37.7

Domestic Airports. CAA proposes to invest approximately LE 118 million in eight existing domestic airports and one proposed new airport. MCA agrees that the new airport is not a high priority and might be deferred beyond the Third Five-Year Plan period. Investments in the existing airports should be considered, generally, of lower priority than investments in the international airports since the former are of considerably less importance for tourism.²² There may, nevertheless, be some individual investments among the group of domestic airport investment proposals that merit early approval and implementation. A reasonable order-of-magnitude estimate for desirable Third Plan investments in Egypt's eight existing domestic airports might be LE 30 million. The final plan allocates LE 36.7 million for domestic airports.

9.37.8

Air Traffic Control. The land area of Egypt, plus portions of the surrounding seas, constitute Egypt's flight information region (FIR), and Egypt bears international responsibilities for being able, fully, effectively and at all times, to provide information to all aircraft requiring information on this FIR. A study was done to identify how Egypt could best meet this international obligation. The recommendations of that study have, thus far, been only partially implemented, and MCA is proposing to complete implementation during the Third Five-Year Plan, at an estimated cost of LE 336 million. On the presumption that full implementation might be stretched out beyond the plan period, LE 150 million is assumed under the Third Plan. The final plan allocation is LE 222 million.

²² This is not to say that the domestic airports are not of any importance to tourism; the St. Catherine airport accommodates little other than tourist traffic. The Mersa Matroh airport is important for local tourism as well as visits to the Siwa Oasis.

- 9.37.9 EgyptAir Investment. EgyptAir is proposing to invest approximately LE 1.2 billion in new aircraft acquisitions during the Third Five-Year Plan period, and approximately LE 1.0 billion for other purposes. The company is mostly profitable and could become quite profitable if the subsidization of domestic services were to end and the anticipated rapid growth of tourism were to become a reality. MCA indicates that the company can make all proposed investments from its own resources, without any need for government guarantees. Some heavy near-term investment can be avoided through the use of chartering and other options.²³ LE 220 million (10 percent of what is being proposed) is assumed for the Third Plan period. This level of investment should be based on an EgyptAir corporate plan agreed upon between EgyptAir management and the Government. LE 600 million has been allocated EgyptAir in the final plan.
- 9.37.10 Air Transport Sector Training. A total of LE 69 million is proposed by NCATO for investment in air transport training during the Third Five-Year Plan. This overall total includes nearly LE 30 million for improving and expanding the training of pilots by MFI; a slightly smaller total of LE 29 million for maintaining and developing CATI; approximately LE 8 million to complete the development of ECAA; and about LE 2 million for the development of NCATO itself. This investment is in line with the foreseen growth of air transport traffic and international commitments to greater air traffic safety. In the final plan, NCATO has been allocated LE 34.5 million.
- 9.37.11 Meteorological Services. MCA indicates that Egypt is meeting all of its responsibilities for providing meteorological information to the World Meteorology Organization (WMO), but that meteorological services for air and sea transport are not yet fully developed. MCA agrees that a necessary step in the further development of Egyptian meteorological services is the preparation of a master plan that will identify priority projects that can be developed in realizable short-, medium-, and long-term programs. In the absence of such a study, it is not possible to identify whether or not the proposed Meteorological Services Authority (MSA) program is sufficiently comprehensive, or the extent to which the program is essential to air and sea safety. Most of the proposed MSA investment program of LE 98 million is designed to maintain or upgrade existing

²³ Options include chartering, which can be especially attractive during periods of worldwide recession when charter rates are normally low, and the shifting of the domestic jet fleet to international regional and chartering operations. Egyptair traffic grew from 4458 million passenger-kms in FY87 to 5298 million in FY92, an overall increase of about 19 percent over a five-year period.

meteorological stations; LE 7 million of the total amount is to conduct a study of the lower layer of the atmosphere, including air pollution. This study, along with most of the proposed investment in meteorological services, is desirable. The need to complete the study before commitment of other investments would limit the amount of investment during the Third Five-Year Plan period; an amount of LE 40 million is assumed to be more than sufficient. MOP has allocated MSA LE 29.3 million in the final plan.

9.38 Summary of Proposed Air Transport Third Five-Year Plan Investment Program. The proposed Third Five-Year Plan investment program for air transport is summarized in Table 9./.

Table 9.7: Proposed Investments in the Air Transport Subsector During the Third Five-Year Plan (estimated costs; constant FY92 prices; LE millions)

	MCA	Preliminary MOP	World Bank	MOP Final
Basic Investment Program	281	281	281	225
Other Investments				
Cairo airport passenger terminal	165	n.e.	30	51
Other Cairo airport investment	95	n.e.	50	49
Ameriya (Alexandria) development	188	n.e.	80	0
Aswan airport passenger terminal	65	n.e.	65	44
Other international airport invest.	161	n.e.	80	94
Domestic airport development	118	n.e.	30	37
Air traffic control	374	n.e.	150	0 ^a
EgyptAir investment	2,200	700	220	600
Air transport sector training	69	n.e.	69	35
Meteorological services development	98	n.e.	40	29
Studies and administration	0	n.e.	5	3
Subtotal, Other Investments	3,533	869	819	941
Total Proposed Program	3,814	1,177	1,100	1,166

n.e.: Not estimated.

^a LE 222 million for air traffic control included in basic investment.

Note: Breakdown of MOP preliminary level of investments not available.

Source: MCA and MOP documents and interviews.

9.39 Sources of Funding. Whereas it may not be possible for MCA and its various subordinate organizations to finance major projects, such as the proposed new passenger terminals, from internally generated funds, it should be possible to generate sufficient funds to finance minor airport investments as well as cover all costs of maintenance and operation. The revenues of Cairo International Airport currently are about LE 80 million per year and operating costs total around LE 75-76 million. The Minister of Civil Aviation has the authority to raise all fees at the Cairo International Airport and other airports by as much as 25 percent per annum. It is highly desirable that this be done and that

service charges be universally applied to all passengers. Cairo International Airport ought not to be looking to any other source of funds for investments such as for replacing conveyor belts in one of its terminals.

9.40 Funding gaps exist, however, for implementing the desirable major airport projects, including the passenger terminals at the Cairo and Aswan airports, and, especially, the development of a new airport at Alexandria, which is an important project of the air transport subsector. EgyptAir has the resources to finance its own investments; nevertheless, the desirable level of EgyptAir investment is far less than what has been proposed by MCA. NCATO and MSA will need assistance to finance their investment programs.

Cairo Transport

9.41 Basic Investment Program. The basic investment program for Cairo transport, as proposed by MOT, CTA and the Cairo Governorate, includes LE 450 million for periodic maintenance and the rehabilitation of existing roads; LE 90 million for the completion of four new bridges over the Nile River; and LE 99 million for completing the construction of the first line of the Cairo metro, for a total of LE 639 million.²⁴

9.42 Other Proposed Cairo Transport Investments. Proposals for Cairo transport system investments, beyond what is included in the basic investment program, can be divided into four groups: new road capacity; extensions of the metro; Cairo Transport Authority (CTA) investments; and improvements in traffic management. These groups of investment proposals are discussed below:

9.42.1 New Road Capacity. The Cairo governorate is proposing to invest LE 150 million for the construction of new roads in Cairo. It is probably not desirable to approve any new road investments in Cairo until a real effort is made to improve the utilization of the existing road network. More effective use could be made of the existing capacity of the road network by substantially reducing on-street and on-sidewalk parking (which forces pedestrians into the streets), appreciably increasing the reliance on bus services and improving traffic management.

9.42.2 Second Line of the Cairo Metro. The construction and equipping of 11 kms of the second line of the metro, at an estimated cost of LE 2,048 million, is proposed by MOT. About 8.5 kms of this line would be underground, and the

²⁴ The Cairo metro system actually extends beyond the borders of the Cairo governorate, as do other "Cairo" transport facilities and services. The metro is currently being constructed by NANT and operated by ENR. This allocation of responsibilities for the metro needs to be changed, and such a change is anticipated in the near term.

remaining 2.5 kms would be partially at-grade and partially elevated. Despite the high cost of this project, it is desirable for near-term implementation because the corridor through which the metro will run is extremely congested. The investment would enhance the returns on investment in the first line of the metro, and the operation of the two lines would significantly improve urban area air quality and reduce noise.²⁵ The first line is not yet operating at full capacity for technical reasons; thus, the highest return on metro investments will be to the LE 99 million required to complete the first line.²⁶ The metro second line project (excluding a possible 2.5-km extension under the Nile to Giza) is designed to be completed in a period of 48 months. Because financing for the project has not yet been identified, it may not be possible to complete the project within the Third Five-Year Plan. LE 1,076 million is assumed for the second metro project in addition to the funds needed for completion of the first line.

9.42.3 The Transport Planning Authority (TPA) projects that the first line of the metro will generate revenues of approximately LE 51 million in FY93, which will not quite be sufficient to cover all costs, minus depreciation and interest. However, the first line is operating with slightly under half of its full design complement of rolling stock (100 out of an eventual 204 units), and the delivery of additional rolling stock (40 units were on order in February 1992) could enable the line to make significant contributions to either debt service or new investment. Metro riders derive only a portion of the benefits of the system; benefits also accrue to the users of urban roads and to the community at large. It would, therefore, not be appropriate to attempt full cost recovery strictly through revenue collection.

9.42.4 The recommended public sector investment would have its principal environmental and social impact in Cairo, where the capacity of the transport system would be significantly increased during and immediately following the Third Five-Year Plan period. As a result, travel demand would be met more fully, with greater comfort and reduced waiting and travel times.

²⁵ Assessments of the economic returns on the first line indicate that, excluding any environmental benefits, it could bring a return of 17 percent when operating at full capacity and is bringing today, while operating at less than half of design capacity, a return of around 9 percent.

²⁶ Only half of the potential benefits of the line are currently being realized. Rolling stock must be increased from the current level of 100 units to 204 units, and headway must be shortened to just 2.5 minutes.

9.42.5 CTA Investment. It is highly desirable to start the deregulation of CTA operations, while gradually reducing the subsidization of its transport services. This would induce the private sector to provide large bus transport services in Cairo and would maximize the conversion of passengers from road to metro travel. The Government would enjoy an added benefit: it would no longer need to cover large CTA losses.²⁷ The private sector, however, would require a number of years before it could supplant CTA services, which would have to be maintained at nearly their present level for some period. In order to maintain CTA bus and minibus services through the end of the Third Five-Year Plan period, investments on the order of LE 150 million would be required to replace old vehicles. (These vehicles could then be auctioned to private sector bus operators.)

9.42.6 Traffic Management. The Cairo governorate is proposing to invest LE 60 million in Cairo traffic management during the Third Five-Year Plan period. Any program of traffic management should include an optimal action plan for correcting the currently egregious state of traffic in Cairo. A portion of the proposed investment must, therefore, be earmarked for the development and implementation of an action plan.

9.43 Summary of Proposed Cairo Transport Third Five-Year Plan Investment. The proposed Third Five-Year Plan investment program for Cairo transport is summarized in Table 9.8.

9.44 Sources of Funding. Approximately 65 percent of the basic investment program represents expenditures that should be covered more or less automatically each year, i.e., road maintenance and rehabilitation. The Cairo governorate total investment requirements would probably decline if the road network were properly maintained. As indicated in the discussion of intercity roads, RBA sources of direct road maintenance funding (tolls and fuel taxes) could provide more than would be required to finance both intercity and urban road maintenance. An avenue should be found to make this important revenue source flow more automatically.

9.45 It would be both difficult and undesirable to finance any significant portion of second line investments from operations of the first line, and much of the funding requirements for the metro second line project, therefore, will need to be obtained from external sources.

²⁷ It will also be desirable, to ensure high levels of demand for metro services, to reduce as quickly as possible the subsidization of CTA bus and other transport services. Reducing CTA service subsidization might mean ending, as well, the operation of tram services, which probably cannot be operated profitably (the cessation of these services, which are at-grade, may well constitute a net benefit to operation of the urban road network).

Table 9.8: Proposed Investments by the Cairo Transport Authority and Other Cairo Transportation Project During the Third Five-Year Plan (estimated costs; constant FY92 prices; LE millions)

	MOT/CTA Cairo Governorate ¹	MOP Preliminary	World Bank	MOP Final
Basic Investment Program ²	639	282	639	283
Other Investments				
New road capacity	150	0	0	0
Second metro line	1,841 ^a	1,000	1,000	1,077
CTA investment	550	550	150	699
Traffic management and studies	60	0	60	11
Subtotal, Other Investments	2,601	1,550	1,210	1,787
Total Proposed Program	3,240	1,832	1,849	2,070

Sources: MOP, NAMT and Cairo Governorate documents and interviews.

¹ Metro investments are proposed by MOT; all other non-CTA investments are proposed by the Cairo governorate.

² The preliminary MOP basic transport investment program for Cairo includes LE 99 million to complete the first line of the metro and LE 183 million for roads. The final MOP basic investment program includes LE 99 million for metro, LE 120 million for roads and LE 64 million for bridges.

^a MOT is projecting that LE 207 million will be expended beyond the Third Plan period.

9.46 CTA has not been able to finance all of its investments in the past because it has not been permitted to raise passenger fares to levels that would cover all its operating costs; the company has, therefore, operated at a continuous loss. The lack of adequate bus service in Cairo forces travellers to use other means of transportation, at a higher cost than would be necessary if better bus service were provided. For these reasons, CTA transport service subsidization should be reduced and passenger fares should be gradually increased. CTA should be able to self-finance at least its operating costs. CTA investment funds might be generated not only through operations, but also through sale of assets, such as old buses being taken out of service, and ferry and tram operations.

Alexandria Transport

9.47 Basic Investment Program. There are no major ongoing transport projects in Alexandria. The basic transport investment program consists of the estimated costs of the periodic maintenance and rehabilitation of the urban road network. In the absence of accurate information on what these costs will be during the Third Five-Year Plan period, LE 150 million has been assumed.

9.48 Other Proposed Alexandria Transport Investments. Besides the maintenance and rehabilitation efforts required for the existing

urban road network, additional transport network capacity is required, and a number of options for providing additional capacity are under consideration by the Alexandria governorate. The Alexandria Transport Authority (ATA) will require some investment as well; these are identified and briefly discussed below.

- 9.48.1 Lake Maryut Northern Shore Road. This is the only major transport project for which preparations are well advanced. The Alexandria governorate indicates that final drawings are under preparation for a 15 km, multi-lane road. The governorate is also planning to develop Lake Maryut into a recreational area; the new road is intended not only to add road network capacity in the east-west direction, but also to provide good access to all portions of the northern shore of the lake. When a new international airport is developed at Ameriya (a project the governorate strongly supports), the Lake Maryut northern shore road could become an important link to the airport access route for eastern Alexandria.
- 9.48.2 Centralized East-West Transport Facility. The governorate is proposing two new facilities to add transport capacity in the east-west direction through the central portion of the city: an elevated road and an at-grade, rapid rail transit facility. A feasibility study has been done for the latter, and the cost is estimated at LE 360 million. The governorate may be correct in its belief that, ultimately, two high-capacity east-west transport facilities will be required in the city. However, during the Third Five-Year Plan, it is likely that only one of these facilities will be needed, or could be financed. A study is needed to assess the absolute and relative merits of the two options under consideration by the governorate. The cost of this study and of the preparatory phase of implementing the preferable option should be included in the Third Five-Year Plan program.
- 9.48.3 Other Road Construction Proposals. A pre-feasibility study has been done for both an Alexandria outer ring road and a greenbelt, which would provide some protection for the city against sandstorms. The two efforts together are estimated to cost LE 180 million. The governorate would also like to improve the city's corniche, perhaps by adding two lanes. Where this latter project is concerned, the Governorate may have to decide whether to improve the road or to maintain the city's beaches, as it would undoubtedly be very costly to do both. Although studies of these project proposals could be made under the Third Five-Year Plan, implementation efforts should be deferred until sometime after the Lake Maryut northern shore road project and the central Alexandria road or rail project have been completed.

9.48.4 ATA Investment. The Governorate estimates that ATA will need to invest LE 60 million during the Third Five-Year Plan period to maintain its urban transport services. As in Cairo, it is particularly important that the subsidization of urban transport services be reduced in order to induce the private sector to introduce large bus services and, thereby, reduce the current heavy dependence of the public on taxis and private (company and government office) buses.²⁸

9.49 Summary of Proposed Alexandria Third Five-Year Plan Transport Investment. The Bank estimates that the Alexandria transport sector would require a public investment on the order of LE 300 million during the Third Five-Year Plan. Half of that total represents the Bank's estimate of the funding requirements for the rehabilitation and periodic maintenance of the existing road network. If the amount is roughly correct, it should be considered as the absolute minimum public investment for the Alexandria transport sector. The other half of the estimated transport investment comprises LE 90 million for transport studies and the construction of new facilities and LE 60 million for ATA investments in new buses. The last figure agrees with governorate estimates of required bus investments and is considerably lower than the LE 198 million tentatively approved by MOP. (Neither the governorate nor MOP provided any estimate of the overall road investment needs in Alexandria.) Final Third-Year Plan allocations for ATA are LE 198 million. In addition, the final plan allocates the governorate of Alexandria LE 49 million for road and bridge projects.

9.50 Sources of Funding. As discussed earlier in regard to intercity and Cairo roads, it is highly desirable that a source for funds for timely road maintenance be established; this might also be done for Alexandria through fuel taxes. ATA should be able to self-finance most of its operational and small project investments, provided that action is taken early to reduce the subsidization of ATA services. The Alexandria governorate, nevertheless, will require financial assistance for the preparation and implementation of its major new projects.

Total Transport Sector

9.51 Summary of Proposed Transport Sector Third Five-Year Plan Investment Program. Table 9.9 presents the proposed transport sector public investment program (excluding local roads in areas other than the Cairo and the Alexandria governorates) for the Third Five-Year Plan period. Table 9.10 presents the breakdown in financing sources. As the

²⁸ In Alexandria, the private sector is already providing minibus services, and reportedly doing well, at charges that are about twice what ATA is charging for large bus accommodation. According to the Governorate, the private sector is doing well in terms of both performance and financial returns. It is likely in that case that ending ATA subsidization would result in a rapid expansion of private sector services.

table indicates, 67 percent is from NIB; 21 percent is self-financed; 7 percent are foreign loans; and 1 percent are foreign grants.

**Table 9.9: MOP and Bank Estimates
of Desirable Transport Sector Investment
During the Period of the Third Five-Year Plan
(FY92 constant prices; LE millions)**

	Original Requests	MOP Preliminary	World Bank	MOP Final
Intercity road system	814	427	532	445
Railway system	4,492	2,100	2,053	2,500
Waterway transport	156	125	130	128
Maritime transport	1,173	766	785	766
Suez Canal	4,266	510	516	510
Air transport	3,814	1,177	1,100	1,166
Cairo transport	3,240	1,832	1,849	2,070
Alexandria transport	300	298	300	247
Other	n.a.	n.a.	0	48
Total Proposed Program	18,255	7,235	7,265	7,880

n.a.: Not available.

Source: MOP tables and World Bank estimates based on available information.

**Table 9.10: Funding Sources, Transport Sector Investment
During the Period of the Third Five-Year Plan
(FY92 constant prices; LE millions)**

	NIB	Self- financed	Foreign Loans	Foreign Grants and Facilities	Other	Total
Intercity roads	385	0	60	0	0	445
Railway system	2,023	0	282	45	150	2,500
Waterway transport	128	0	0	0	0	128
Maritime transport	763	3	0	0	0	766
Suez Canal	0	510	0	0	0	510
Air transport	311	699	135	16	5	1,166
Cairo transport	1,416	424	79	0	150	2,070
Alexandria transport	217	5	0	25	0	247
Other	48	0	0	0	0	48
Total Proposed Program	5,291	1,641	556	86	305	7,880

Source: MOP tables and World Bank estimates based on available information.

C. Evaluation of Overall Program

9.52 To the extent possible, considering the limited supporting information available on transport sector investment proposals, this chapter has attempted to identify, from an economic, financial and

environmental perspective, those transport investments that would be worth implementing during the Third Five-Year Plan. The discussion has also been cognizant of project implementation constraints and has tried to identify, in regard to several major projects, what can realistically be implemented during the Third Plan period, given the need to arrange financing, conduct and review studies and provide capable project and program management. The analysis presented is primarily based on an assessment of the merits of each project taken individually. It is desirable, also, to examine the macroeconomic as well as the intersectoral aspects of the program. These include: (i.) assessing whether or not the transport program, as recommended above, would adequately support the recommended development of other sectors of the economy; (ii.) identifying the extent to which the program would be in line with the Government's restructuring policy, wherein public sector functions are to be shifted to the private sector; (iii.) assessing the impact of recommended transport sector investment on the overall public sector investment program during the period of the Third Plan, including the financing of the plan; (iv.) identifying the extent to which cost recovery can be expected; (v.) identifying the general social impact of the program; and (vi.) assessing the significant environmental impacts of the program, if any. These several macro aspects of the proposed transport sector public investment program are discussed below.

9.53 Support for Development of Other Economic Sectors. The proposed program would provide Egypt with a better intercity and international transport system by the end of the Third Five-Year Plan period, although the fact that the new Alexandria international airport is unlikely to be completed by the end of the plan period means that some existing constraints on agricultural export diversification in the northern delta region and on the development of Mediterranean coast local tourism will continue. It remains unclear as to whether the transport improvements will fully meet the needs of the tourism industry by the end of the period; these needs can only be met through the development of closer planning coordination between the transport and tourism sectors. In this regard, the emphasis being placed by the Tourism Development Authority (TDA) and its ministry to develop tourism in the Sinai and in the Hurghada-Safaga area has been taken into account. Whether Third Plan investments in transport will provide adequate support for the development of other sectors remains to be seen. A major shortfall of the proposed program is that it does not extend to most local roads. Local road development is required to ensure that all areas of the country are fully integrated into the national economy. (The relatively higher investment in air transport in the proposed program, as compared to sea transport, reflects both the largely adequate state of the latter at the beginning of the Third Plan period and also the unusual, by international standards, relative importance of air transport in Egypt, due mainly to tourism.)

9.54 Public Transport. The recommended transport program allows for greater private sector involvement in the provision of both intercity and urban transport services. For this to occur, however, it is imperative that the subsidization of public sector transport services

be greatly reduced, the sole exception being the Cairo metro services. Private sector investment is expected to provide all incremental road and waterway transport services. It is also expected that the private sector will entirely supplant the public sector in the provision of trucking services, and perhaps in the provision of all waterway transport services as well. It is recommended, moreover, that the private sector be invited to provide domestic air transport services, with the expectation that, through their use of more cost-effective aircraft, they will eventually supplant EgyptAir entirely in the provision of domestic air transport services.

9.55 Railways. The limit recommended for Egyptian National Railways (ENR) rolling stock acquisition, during the Third Five-Year Plan period presumes that the equipment for single users will be acquired by these respective users, rather than by ENR. No changeover to the private sector has been presumed for cargo handling and storage in ports solely because of existing leasing arrangements. It is recommended that, as these leasing arrangements expire, new leasing arrangements be established by resorting to competitive bidding, in which case gradual private sector involvement in port activities would be likely to occur.

9.56 Ports. One possibility for private sector involvement in port cargo handling in the near term is the El-Dikheila container terminal, where a private sector lessee or joint-venture partner might be desirable both from the standpoint of providing investment funds and from the standpoint of management expertise (the facility would accommodate vessels not heretofore accommodated in Egyptian ports).

9.57 Magnitude of Transport Sector Investment. The recommended investment total of approximately LE 7.2 billion for the transport sector in the Third Five-Year Plan represents about 12 percent of total public sector investment (as recommended by the World Bank). This is in line with the expectations, discussed earlier in this chapter, that investment in transport ought to decline as a proportion of total investment because the transport system has been substantially improved during the First and Second Five-Year Plans. It should be noted, however, that the recommended program does not extend to the majority of local roads and that there exists a sizable backlog of local road improvements that need to be made.

9.58 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Internal transport sector projects have been reduced by less than LE 0.1 billion in FY93 and by LE 0.1 billion in both FY94 and FY95. Maritime and air transport sector projects have been reduced by less than LE 0.1 billion in each of the years FY93, FY94 and FY95. At the ministry level, public investment programs have been reduced as follows. Ministry of Transportation: FY93, from LE 679.5 million to LE 633.5 million; FY94, from LE 848.5 million to LE 788.5 million; and FY95, from LE 904.0 million to LE 844.0 million. Ministry of Maritime Transportation: FY93, from LE 51.9 million to LE 38.6

million; FY94, unchanged at LE 53.3 million; and FY95, unchanged at LE 56.0 million. Ministry of Civil Aviation: FY93, from LE 280.9 million to LE 270.9 million; FY94, from LE 283.7 million to LE 243.7 million; and FY95, from LE 303.0 million to LE 283.0 million. Suez Canal Authority: FY93, unchanged at LE 50.8 million; FY94 and FY95, unchanged at LE 100.0 million; FY95 each year. Local Administration, which includes Cairo and Alexandria transport, water and wastewater authorities for both cities and budgets for the individual governorates: FY93, from LE 926.0 million to LE 919.3 million; FY94, from LE 1025.3 million to LE 950.3 million; FY95, 1068.5 million to LE 993.5 million. (Except for the reductions in Alexandria and Cairo Transport mentioned below, the extent to which cuts in local administration are from the transport versus the urban sector is unknown.)

9.59 Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. These reductions include: the metro second line (by LE 30.0 million); metro installations and control systems (by LE 20.0 million); Helwan line expansion (by LE 5.0 million); El-Aqsar line efficiency (by LE 5.0 million); Cairo transport fleet modernization (by LE 30.0 million); and Alexandria transport fleet modernization (by LE 10.0 million). MOP has not identified by project any of the LE 40.0 million of reductions in MCA's FY94 investments.

9.60 Cost Recovery. The economy of Egypt can be expected to recover the full costs of all proposed investment. Whether individual modes and facilities will recover full financial costs varies. The intercity road network has considerable potential for directly recovering costs through the imposition of tolls, provided that RBA is given the requisite legal authority. Supplementing toll collection by earmarked taxes on fuel, if set at the original (1981) level as a percentage of the fuel price, would enable RBA to cover all road maintenance and rehabilitation costs and even some upgrading programs (bridge strengthening, shoulder paving, roadway furniture, etc.) directly from its own resources. Some new road construction projects may not be fully covered from these sources, but new road construction as a proportion of total road expenditure can be expected to become relatively minor by the end of the Third Five-Year Plan (even during the Third Plan period, as new intercity road and bridge construction is just 29 percent of total intercity road expenditure). Railway investment might be fully recovered, but only if there is an accelerated effort to bring tariff levels in line with costs and if these services that have little potential for becoming profitable are discontinued. Waterway improvement investment would require the institution of new charges if RTA is to recover costs directly. It is doubtful that full capital cost recovery could be achieved in the Delta, but the prospects for full cost recovery on the Upper Nile are better because of the benefits from the tourism cruise industry. Investment in ports should achieve full cost recovery, provided that investments are made in an optimal phased manner. Airport investment could be largely, but probably not wholly, covered from airport revenues, provided that attention is given to maximizing these revenues; whatever airport investment costs cannot be

recovered directly, through airport revenue maximization, will probably be covered by incremental benefits to the tourism industry. Full cost recovery for the Cairo metro is neither likely nor desirable, but provided that operations approach designed capacities, current fare levels (adjusted only for inflation) will recover a fairly substantial proportion of the operating costs, roughly estimated at around three quarters of the total. There will be no direct recovery of the costs of developing local roads, but a mechanism should be instituted to cover at least their maintenance cost requirements.

9.61 Social Impact of the Transport Sector Investment Program. The recommended public sector investment will have its principal social impact in Cairo. The capacity of the transport system will be significantly increased during the period of the Third Five-Year Plan (and immediately following the plan period) so that travel demand can be met more fully, with greater comfort and reduced waiting and travel times. The ending of public sector transport service subsidization (with the exception of CTA, ATA, and the Cairo metro) will probably have an even greater impact on social welfare. This is because the promise of "a level playing field" will have a positive effect on the availability of private sector bus services. The greater availability of these services can be expected to bring overall passenger service capacity in balance with demand, as well as supplant the costlier intercity taxi services and a significant portion of urban area taxi services.

9.62 Environmental Impact of Investment. Most investments in land transport facilities, including transport-oriented investments in inland waterways, have positive environmental effects since they tend to reduce the levels of transport congestion and have a general positive effect on fuel efficiency. Two types of transport investments, however, have considerable environmental advantages: desert roads that divert traffic from the roads and railways of developed areas; and electrified urban railway facilities, which reduce traffic mainly in the urban road system and decrease dependency on diesel railway facilities. There are three projects proposed for the Third Five-Year Plan period that have considerable positive environmental, as well as economic, benefits. Most important of these three is certainly the second line of the Cairo metro; this project will reduce air and noise pollution not only because a relatively quiet, grade-separated, electrified system will be replacing thousands of bus trips per day, but also because the removal of those bus trips from the road network will greatly improve the operation of the vehicles remaining on the roads, thereby saving fuel and eliminating additional air pollution. The other two projects of some environmental importance are the planned desert roads between Cairo and Aced and between Naga Hammadi and Armant. Both of these projects can be expected to divert a considerable amount of road traffic from the Nile valley.

CHAPTER X: HUMAN RESOURCES

Summary

Education: Several decades of rapid population growth have placed severe demands on Egypt's education sector. Simply keeping up with increases in the number of students has absorbed most of the system's resources, and quality has suffered. Moreover, while facilities have expanded quickly, funding for maintenance and operations have been cut, resulting in the rapid decay of schools and materials. These problems have been exacerbated by capital and recurrent budgets that have given a disproportionate share of resources to university education at the expense of primary and technical education. Overall government spending on education remains inadequate. The amount of the government budget allocated to the sector relative to GDP needs to be increased over the next five years to reflect the economic and social value of education. This should be accompanied by an intrasectoral reallocation of government resources to basic and technical education, which is crucial to developing the skilled labor essential in a modernizing economy. The potential for nongovernment resources to be mobilized in the sector could be addressed through cost-recovery measures, especially in higher education, and through a greater and more explicitly defined role for the private sector. There are inefficiencies in the management of sector resources manifested by the imbalances in the distribution of these resources among the various expenditure categories. Budget allocations to recurrent expenditures do not take into account the implications of investment projects on operations and maintenance (O&M). If these imbalances are to be effectively addressed, the managerial/institutional capacity should be strengthened so that investment decisions emanate from a policy framework that more clearly identifies the role of the education sector in the economy.

Health: Although Egypt has made significant strides in ensuring access to health care for its citizens, the health care system still faces obstacles. The rapidly growing population threatens to overwhelm the capacity of the health care system, especially in urban areas. Just keeping pace with the increased demand for health care facilities is likely to absorb all resources available for health care, meaning that improvements in the quality of the system can only be financed by greater cost recovery and by more cost-effective delivery. Government spending is biased towards costly curative care at the expense of cheaper and more beneficial primary and preventive care. The Government should redirect its spending towards primary care and expand health care

resources through cost-recovery measures, particularly for curative care. Cost recovery should be accompanied by improved health insurance programs to ease the burden of medical expenses on the poor.

I. EDUCATION

A. Background and Recent Developments

Role of Education and Training in the Economy

10.1 Several decades of rapid population growth have placed severe demands on Egypt's education system. At the same time, the country's pressing budgetary problems have made it difficult to meet the growing demand for educational services. In these circumstances, the fact that coverage has been able to expand faster than population growth, with enrollment ratios increasing, is by itself a significant accomplishment. According to official 1990 statistics, the gross enrollment ratio in primary education as a percentage of the school-age population stood at 90 percent (79 percent for females). For secondary education, this ratio was 69 percent (58 percent for females). By comparison, in the early 1970s the gross enrollment ratio stood at 71 percent for primary education (57 percent for females) and 43 percent for secondary education (31 percent for females).

10.2 Despite improved coverage, Egypt's educational system still faces important challenges in the medium term: a high illiteracy rate, a deterioration in the quality of education and inadequate resources (government and nongovernment) to meet the expected future demand for education. In addition, there are intrasectoral imbalances which need to be addressed. Illiteracy rates, which according to a 1990 UNESCO estimate stood at 52 percent (62 percent for females) for population aged 15 and over, have been roughly constant over the last decade.¹ Gender inequalities in enrollments and in illiteracy rates are pronounced and may have contributed to the low participation rate (percentage of population of all ages in the labor force) of females in the labor force (6 percent compared to an overall rate of 28 percent in 1990). The eradication of illiteracy is also a precondition for poverty alleviation. The reduction of female illiteracy in particular could help improve the health of mothers and infants and strengthen population programs.

10.3 Education has both social and economic dimensions. Basic education in itself is a fundamental human need, which, if satisfied, enhances the quality of life. In addition, literacy and basic

¹ In the Labor Force Sample Survey conducted by CAPNAS in 1980 it was found that 51.5 percent of the labor force was illiterate and that an additional 23.5 percent of workers could barely read and write. These numbers were more or less repeated in a 1984 survey of the labor force, which found that of the 12.6 million members of the labor force, about 50 percent could neither read nor write.

educational skills can have a direct impact on labor productivity. Cross-country evidence suggests that per capita incomes and overall economic performance are closely related to the average level of educational achievement of the labor force. Prospects for economic development in Egypt in the medium and longer term may be significantly enhanced by further upgrading the country's level of human capital. Thus, high priority should be given to the objective of achieving universal literacy and basic education for all, including vocational and technical training.

10.4 Egypt experienced widespread labor migration to the major oil-exporting countries in the Middle East beginning in the mid-1970s. Egyptians of various occupations and skills have contributed to the development of the countries in the region, and remittances from Egyptians living abroad have been a major source of foreign exchange for Egypt for years. Although labor migration has reduced population pressures and promoted higher wage levels in rural areas, the emigration of skilled labor has intensified the remaining skill deficit in Egypt, especially in the nonagricultural sectors.

10.5 Raising the level of educational quality, which in the past has helped Egypt to be one of the major labor exporters of the region, requires that additional resources be channeled into the sector. Moreover, as the Government moves toward privatization and economic liberalization, incentives will favor changes in the country's product mix (from nontradeables to tradeables, for example), and structural adjustment is linked to new education requirements. The responsibility for developing workers with the skills essential to a modern economy will fall on the entire public and private education system.

B. Relative Importance of Education in Public Sector Spending

10.6 The education sector has claimed an increasing share of the government budget over the last decade. Education in FY91 represented 14.9 percent of recurrent expenditures in the central government budget. For FY81 the equivalent figure was 7.6 percent (see Annex Table 10.1). The share of education in capital expenditure also increased: from 2.6 percent in the early 1980s to 5.3 percent in FY92. Education was budgeted at 10.5 percent of capital spending in FY93, the first year of the Third Five-Year Plan (see Annex Table 10.2).

10.7 Comparison with Other Developing Countries. Compared to other countries with similar incomes (see Annex Table 10.3), Egypt's share of education in total government spending is rather low, although using expenditure as a share of GNP as a measure, Egypt compares favorably to most countries in the group. Nevertheless, Egypt does not do as well when performance standards are used for comparisons. The gross enrollment ratio in primary education as a percentage of the school-age population stood at 90 percent in 1990; this is lower than in most other lower middle-income countries (102 percent). In addition, the overall illiteracy rate in Egypt (52 percent) is double the average

rate in lower middle-income countries (26 percent), and significantly higher than the average for low-income countries (40 percent). The illiteracy rate among Egyptian women was 66 percent in 1990 compared to an average of 32 percent in the group of lower middle-income countries and 52 percent in low-income countries. Given its level of spending on education, Egypt's relatively low level of achievement raises questions about the adequacy of the intrasectoral allocation of budgetary resources. As a result, while the Government has been able to keep pace with the increasing demand for education in a quantitative sense, the quality of education appears clearly to have suffered as a result of the allocation of the education budget between different educational subsectors.

C. Main Issues in the Education Sector

10.8 Recurrent Expenditure Imbalances. The composition of expenditures on education has shown a marked trend over the last several years. A large and increasing share of resources has been allocated to teachers' salaries while relatively few resources have been allocated to school supplies, maintenance and structures. For FY87-91, the average share of teachers' salaries in total education expenditures was 69 percent based on MOF final accounts. The average share for O&M over the same period was 14 percent, while that for investment in structures was 15 percent. Real recurrent spending per student on items other than teachers' salaries in basic education fell from LE 7.14 in FY81 to LE 2.37 in FY90. Despite the gain in the share of wages and salaries in the budget, teachers' salaries have actually experienced sharp declines in real terms, forcing many teachers to become multiple job holders. Quality of teaching, therefore, may have suffered significantly.

10.9 Private Tutoring. Over the years many teachers have coped with low salaries by offering private tutoring to some of their students. Private tutoring is reported to be widespread and practiced by anywhere from 50 percent to 90 percent of teachers in the public sector, although there is no hard evidence as to the exact figures. This tutoring can be individual (which is expensive, often costing more than LE 1,200 per year) or in groups (and costing only a few pounds per week). Tutoring has come to be considered a necessity by parents, since much of the material not covered during official school hours is covered in the private sessions. In addition to tutoring costs, parents at all levels of education have to pay school "contributions," presently averaging LE 30-40 per student annually.

10.10 The practice of private tutoring points to widespread resource mobilization outside the budget. On the one hand, teachers are receiving better pay, and students, who can afford private tutoring, better education. On the other hand, this practice is creating inequities that need to be addressed. Thus, though public education is supposed to be free, the combined effects of private tutoring costs and contributions are making it difficult for lower-income families to keep their children at school. This problem is particularly acute in rural

areas where the average household expenditure on education for a lower-income family is less than half that in urban areas and where the demand for education is low due to the perceived lower returns to education in the rural economy. MOE has begun to address the problem of private tutoring (for example, in the Third Five-Year Plan) and generally believes that the only solution is to increase the overall quality of education. Rationalizing practices and increasing the transparency of the educational finance system at all levels would also help. Any proposal dealing with this issue will have to identify a way to increase the budget of schools so that they can spend more on operations and pay teachers better.

10.11 Maintenance and Operations Costs. The continued and prolonged lack of sufficient maintenance funds has resulted in a severe degradation in the stock of existing school buildings and structures, with many of them beyond rehabilitation. This, in turn, has resulted in allocating more investment funds in the budget for the construction of new schools. The increased spending on construction has come at the expense of maintenance share in the recurrent budget, since salaries are not a negotiable item. Thus, a self-damaging trend has been reinforced. Institutional peculiarities have contributed to making school maintenance a neglected activity. Investment decisions are made by the MOP as part of the five-year plan, while maintenance decisions are made by the MOF and MOE as part of the recurrent budget. There is little coordination between the two activities. In particular, the implications for the recurrent budget posed by the maintenance and operations costs of investment projects mandated by the five-year plans do not appear to be receiving sufficient focus of attention or analysis.

10.12 Recognizing the problems caused by the failure to take adequate care of school facilities, the Government has initiated a new maintenance program funded by charging students an average of LE 4 per year at the pre-university level. It is estimated that this charge would yield about LE 100 million annually. Although the program is said to have begun in the summer of 1991, documentation on how funds were being administered, or whether the program was even functioning, was not available at MOE.

10.13 Higher versus Basic Education. An increasing share of resources has been allocated to higher education at the expense of basic education in recent years. The Ministry of Higher Education (MOHE) received 37 percent of the combined MOE-MOHE recurrent budget in FY90, compared to 31 percent in FY82. In FY91 the Government's total spending (recurrent plus investment) on pre-university education (basic plus general and technical secondary) was roughly the same as on university or higher education. Total spending per student in FY91 was only LE 250 in basic education versus LE 2,100 in higher education, a pattern that Egypt shares with a number of other developing countries. Yet, returns on investments in higher education appear to be low in Egypt because many skills taught at the universities - such as liberal arts or administration - are no longer marketable, as the growing number of

unemployed graduates shows.² Moreover, the benefits of higher education typically accrue to children of higher-income families (who can afford the opportunity and other costs associated with university education) while the benefits of basic education are more widely distributed and strongly correlated to improving income distribution and reducing poverty.³ On the other hand, the complementarity between primary and higher education should not be overlooked. The efficiency of public investment in primary/secondary education is largely conditioned by the performance of higher education (training of teachers and school administrators and support for curriculum reform). Conversely, the quality of university education is determined to a great extent by the qualifications of secondary school graduates. Greater emphasis should, therefore, be given to increasing efficiency and equity in allocating public resources, and to the teaching of skills that are essential to Egypt's future development.

10.14 Technical Education and Training. Technical training has been described as a priority by MOE, and one of the goals of the Third Five-Year Plan is to increase enrollments in technical education (from 64 percent to 70 percent of secondary enrollments). Nevertheless, the system - which consists of MOE secondary schools with programs in industrial, agricultural and commercial skills, and the training centers run by the Ministry of Industry - has serious problems. Technical education has experienced a rapid deterioration in the quality of the available programs in recent years, due to outdated curricula, poor teacher training and a lack of adequate equipment and physical facilities (caused in part by poor maintenance). Post-secondary engineering education has been the subject of some reforms, including a reduction in the number of students admitted and the use of some cost-recovery measures. The Engineering and Technical Education Project funded by the Bank addresses several of these problems.

10.15 The strategy for technical training needs to be reevaluated. At present, the program relies heavily on forecasting job vacancies and providing narrow training to students to equip them with highly firm-specific technical skills (based on job descriptions provided by employers). Alternatively, the system could provide students with more general training, which would allow graduates to take jobs that offered them the greatest rewards and would prepare them for future employment opportunities. The cost of providing students with firm-specific skills

² A recent study suggests: (i) that the highest social rates of return to education are generally in the lower income, agricultural economies and in the marginally industrialized economies; (ii) that the highest payoff to education in these lower income and middle income countries is at the primary level; and (iii) that as countries industrialize, increase their GDP per capita and invest more in education, rates of return to education tend to fall overall and the payoff to lower education levels tends to fall relative to the payoff to higher education levels. Although Egypt was not included in the study, most of the characteristics identified for lower-income countries apply to Egypt. (Wadi D. Haddad and others, Education and Development: Evidence for New Priorities, World Bank Discussion Paper, No. 95, page 6).

³ Jandhyala B.G. Tilak, Education and Its Relation to Economic Growth, Poverty, and Income Distribution: Past Evidence and Further Analysis, World Bank Discussion Paper, No. 46, pages 19-23 and 59-62.

should be borne by the employer or employee, not by the Government. The quality of vocational training should also be improved. Technical and vocational education and training need to be made more relevant by promoting a closer relationship between training institutions and labor markets and by making the training system more responsive and better adapted to the needs of the Egyptian economy during its transition towards a more market-based economy.

D. Public Expenditures on Education and Training

Plans Implemented or Under Implementation

10.16 The problems highlighted above are not new. Many of them were addressed in the First and Second Five-Year Plans. With respect to education, the main goals in the First Plan (FY83-87) were to improve the quality of basic education and to reallocate resources to improve technical secondary education. However, investments in education (by MOE and MOHE) over the First Five-Year Plan constituted only 3.3 percent of total public investments. In addition, the composition of investments within education under the First Plan was not consistent with the stated objectives, with more than one half of invested funds allocated to higher education. Enrollments in primary and secondary education, nevertheless, increased by about 551,000 over the life of the First Plan, and 53,000 additional classrooms were reported to have been built for general education.

10.17 The principal goals of the Second Five-Year Plan (FY88-92) were to increase female enrollment rates in primary education to 95.5 percent; to build new schools to provide for an annual increase of 4 percent in the primary-level student population (representing a minimum of 46,300 new classrooms); and to increase enrollments in technical secondary education in order to make technical education the largest component in secondary education. The Second Plan exceeded most targets, except for female enrollment rates in primary education, which stood at 79 percent in 1990. Nevertheless, more than half of the investment resources were budgeted for higher education, repeating the pattern of the First Five-Year Plan. It is unclear why the pattern of equal allocations between pre-university and higher education was repeated in the Second Plan since enrollment at the pre-university level in FY91 was about 12 million students (6.4 million in basic education) compared to only 0.7 million in higher education. However, the final draft of the Third Five-Year Plan indicates that the share of higher education as a percentage of total allocations for education is lowered to 44 percent.

Public Sector Investments in Education in the Third Five-Year Plan

10.18 The goals of the Third Five-Year Plan (FY93-97) are reminiscent of those of the previous two plans, in general emphasizing the priority of basic and technical education. However, the final Third

Plan indicates that MOP will dedicate about 45 percent of the available investment resources to higher education (see Table 10.1, below). The Ministries of Education and Higher Education had requested from the MOP a budget allocation for FY93-97 of LE 6.9 billion for higher education and LE 7.1 billion for general or pre-university education (of which LE 5.4 billion is for basic education), i.e., a total of LE 14.1 billion. The World Bank recommended that LE 4.5 billion be allocated to pre-university education, out of which the share for basic education would be LE 3.9 billion (87 percent) and the share for higher education, a maximum of LE 3.1 billion. As indicated in Table 10-1, the final MOP allocations show a more favorable distribution for general education than was the case in the original requests. These recommendations are based on assumptions pertaining to student enrollment ratios, class size, the prevalence of double shifts and various cost estimates, and they are conditional upon MOE continuing its efforts to strengthen the institutional and technical absorptive capacities needed to implement the proposed investments.⁴

10.19 The financial support given to public education in the five-year plans has increased steadily. In the First Five-Year Plan, the share of education in the total investments of the public sector was 3.3 percent (LE 0.9 billion). By the Second Five-Year Plan, this share of total investments had risen to 3.6 percent (LE 2.4 billion), while in the Third Five-Year Plan, investment resources allocated by MOP to the education sector are 9.8 percent (LE 7 billion) of the total public sector investment.

10.20 Financing. Of the total allotment for pre-university education (LE 3.9 billion), LE 3.49 billion will be in local currency, LE 24 million in convertible foreign currency, LE 352 million in foreign grants, and LE 77 million in loans.

10.21 Investment Allocations. The investment allocations are as follows: LE 450 million for rehabilitation and renovation (including 1,500 primary schools, 450 preparatory schools, 85 general secondary schools and 65 technical schools); LE 3.38 billion for new and/or expansion projects (including constructing and equipping 13,870

⁴ The Bank's recommendations are largely based on MOE's enrollment projections (Annex Table 10.8) and the General Authority for Educational Buildings (GAEB) estimates of school construction needs over the next five years (Annex Table 10.7). The following assumptions have been made: (i.) To keep up with population growth, 3,360 new schools would be needed. The average cost per school is LE 524,000, and the average number of classrooms per new school is 13. Therefore, the average estimated cost per classroom is LE 40,000, which is lower than the estimate provided by MOE of LE 42,000 to LE 80,000. Out of the 3,360 schools, 2,350 would be needed for basic education. The total cost for keeping up with population growth is LE 1.75 billion. (ii.) To replace existing schools, 2,100 new schools (1,950 for basic education) would be needed. The total cost is LE 1.10 billion. (iii.) To restrict the average class size to 50 students in areas with severely overcrowded schools, 820 new schools would be needed in basic education. The total cost is 0.43 billion. (iv.) To reduce second and third shifts, 2,320 new schools would be needed all in basic education. The total cost is LE 1.22 billion. The grand total for pre-university education is LE 4.5 billion (LE 3.9 billion for basic education). The recommendation that LE 3.1 billion be allocated to higher education is based on the MOP's recommendation since the Bank had no basis for verifying the estimates provided by MOE. The MOP's final allocation is more in line with the Bank's in terms of reallocating government resources to basic education rather than to higher education.

classrooms for three- and five-year industrial schools, 6,750 classrooms for three-year commercial schools and 500 classrooms for special education); and LE 104 million for the completion of on-going projects (industrial secondary schools, the National Center for Examinations and Educational Evaluation and the headquarters and branches of the General Authority for Educational Buildings).

**Table 10.1: Investment in the Education Sector
During the Third Five-Year Plan**

Comparison between MOE/MOHE Request, MOP
Allocation and Bank Recommendation
(1991/92 constant prices; billion LE)

Type of Education	MOE/ MOHE Request	MOP Proposal	World Bank Recommendation	MOP Final Allocation
General (MOE)				
Basic ¹	5.4	2.3	3.8	2.6
Secondary/Technical ²	1.7	0.7	0.7	1.3
Subtotal, General	7.1	3.0	4.5	3.9
Higher (MOHE) ³	6.9	3.1	3.1	3.1
Grand Total	14.0	6.1	7.6	7.0

Source: MOP, MOE and MOHE, and Staff estimates.

Note: For a detailed breakdown of MOE/MOHE and MOP budgets, see Annex Tables 10.14-10.15.

¹ Basic Education includes eight years of schooling, five years in primary and three years in preparatory education.

² Secondary/Technical Education includes general secondary and technical (industrial, agricultural and commercial) three-year programs.

³ Higher Education includes technical colleges (commercial and industrial), 11 universities, the Alexandria Library and the adult education program.

10.22 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Education sector projects have not been reduced in either FY93 or FY94, and were to be reduced by less than LE 0.1 billion in FY95. At the ministry level, public investment programs have been reduced as follows. Ministry of Education: FY95 targeted investment reduced by LE 50 million, from LE 755.0 million to LE 705.0 million. Ministry of Higher Education: FY95 targeted investment reduced by LE 35 million, from LE 543.0 million to LE 508.0 million. MOP has not released any indication of which projects are to be reduced in FY95.

10.23 MOE goals under the Third Five-Year Plan include strengthening the planning and managerial capacity of MOE; improving the curriculum by replacing memorization and rote learning with critical thinking and by introducing the use of computers and other aspects of

technical education at an earlier age; expanding the school year to 34 weeks for primary education and 32 weeks for all other levels of education (from an average school year that does not exceed 25 weeks); and improving the quality and motivation of teachers through better training and compensation. In addition, MOE aims to increase the relevance of technical education by linking it with employment opportunities via an advisory committee that includes representatives of the private sector. The World Bank has begun a project for technical teacher training, and international talks are under way for cooperation and assistance with several countries to improve technical education. Germany, through the Mubarak-Kohl Project, will provide DM 100 million for technical education. IDA is also supporting the Government's efforts in basic education (see Box 10.1).

Box 10.1: IDA Basic Education Project.

The IDA Basic Education Project (SDR 40 million) is intended to assist the Government in its ongoing education reform program, which aims at (i) universalizing basic education and improving the quality of educational outputs; (ii) reducing illiteracy among children; (iii) consolidating the institutional capacity of the MOE to perform effective educational planning, policy analysis and research; and (iv) mobilizing civic support for the education sector.

The project would serve as the initial phase of a more comprehensive program of activity in the social sectors, and in the basic education system in particular, by focusing on a few key measures designed to:

- (a) enhance MOE's institutional capacity in policy analysis, management and education planning, through training of MOE staff and further development and efficient use of an education management information system (EMIS);
- (b) improve the quality of teaching through reinforcement of the capabilities of the in-service teacher training system; and,
- (c) improve school access and equity and reduce wastage through a school construction and rehabilitation program.

10.24 From a budgetary perspective it is unlikely that more funds will become available in the near term to expand or even to protect the present level of education expenditures in real terms. It is, therefore, very important for MOE to find ways to improve efficiency in the provision of educational services, as well as to develop alternate sources of financing.

10.25 Conventional efficiency measures are unlikely to free a large number of resources. The traditional cost-saving measure of increasing student/teacher ratios would yield only limited savings because, for the most part, these ratios are already high (reportedly 60- or 70-to-1 in some areas) and increases would have a debilitating effect on teaching quality. Substantial savings from increasing the number of schools running double shifts may not be possible, because many schools already have implemented double shifts; indeed, some are running triple shifts. Another conventional cost-saving measure is to reduce the rate of grade repetition. However, Egypt's basic education system recently switched to an automatic promotion basis.

E. Cost Recovery and the Private Sector

10.26 By contrast, cost-recovery measures and user charges offer much greater potential. Because the Constitution of Egypt guarantees free education, all three levels of education offer essentially free tuition. This system was intended to ensure that all children have access to education regardless of their families' financial standing. However, indirect costs of education can be substantial, and this goal has not been achieved. Consequently, an education system that charges tuition at the secondary and higher levels for those students who can afford to pay and provides free tuition and scholarships for the living expenses of students from poorer families may be more equitable than the present system of school finance.

10.27 Fees and Contributions. Although officially there are no tuition charges or registration fees, in reality parents pay a wide variety of charges called "contributions," which often represent a significant expense for the families sending their children to school. (See Annex Table 10.9 for some examples of contributions required by parents of preparatory school students.) These contributions seem to be well institutionalized in basic, secondary and higher education. There is only a weak link between what parents contribute and what is actually used in the local schools.

10.28 Private tutoring and more sporadic "voluntary" contributions for transfer students are additional significant out-of-pocket expenses for the parents of school children. The transfer fees are negotiated payments between secondary or higher institutions and the family of a student who wants to transfer. The payments can be quite substantial - sometimes "what the traffic will bear" - and again there is little transparency concerning the final use of the funds. Tutoring is a much more common phenomenon and, in fact, only children of the poorest

families receive no private tutoring at all. Tutoring can cost a family anywhere from a few pounds a week to over LE 1,200 a year, more than 50 percent of per capita income. These payments can constitute a considerable burden, especially for poor families with several school-age children. Tutoring has been officially sanctioned by the Government, which recently began allowing teachers to use school facilities on a limited basis for this purpose.

10.29 Role of the Private Sector. The formal private sector currently plays a minor role in providing basic education. In primary education, licensed and accredited private schools represented 5.9 percent of enrollments in FY90 and 6.3 percent in FY91. At the preparatory level, the share of private schools was only 2.4 percent in FY90 and 2.5 percent in FY91. At the general secondary level, the private sector is more important, representing 11 percent of enrollments in FY90 and 10.5 percent in FY91. However, including enrollments in the industrial, agricultural and commercial levels reduces the share of private schools in overall secondary enrollments in FY91 to 7.6 percent. One area in which private schools play a substantial role is commercial secondary education, with private school enrollments representing 15.6 percent in FY91 (See Annex Tables 10.10 and 10.11). There is little information about quality differences between private and public education or about tuition costs.⁵ However, except at the preparatory level, the average class size in private education is almost identical to that in public education (see Annex Table 10.12). Of course, these figures are averages and do not account for the considerable variance in class sizes. The levels of private investment in education (see Annex Table 10.13) also suggest that private schools play a limited role in Egypt.

F. Appraisal of Government Spending in the Third Plan

10.30 Enrollment Projections. The financial support given to public education has increased in each successive five-year plan, but given Egypt's rapid population growth, it is by no means certain that this growth will be sufficient to allow the education system to keep pace with the growing demand for school places, let alone to fund improvements in educational quality. A recent study⁶ provides estimates of enrollment projections for a period overlapping with the Third Five-Year Plan. The projections are linked to population

⁵ Recent developing country case studies comparing public and private secondary education show that private school students generally outperformed public school students on standardized math and language tests. This finding holds even after accounting for the fact that, on average, private school students come from more privileged backgrounds than their public school counterparts. In addition, preliminary evidence suggests that the unit costs of private schools are lower than those of public schools. (See Emmanuel Jimenez, M. Lockheed, and V. Paqueo, "The Relative Efficiency of Private and Public Schools in Developing Countries." World Bank Research Observer, 6 (2), 1991, pp. 205-18).

⁶ "Population and Development Projections for Egypt" by R. Scott Moreland, Research Triangle Institute, December 1991.

projections based on a scenario for medium fertility decline that was developed by the Central Authority for Public Mobilization and Statistics (CAPMAS). The methodology is a "grade transition" model using actual repetition and promotion rates for 1985-89. An important implication is that, while the decline in fertility will mean a decrease over time in the relative size of the school-age population, the absolute number of school-age children will continue to increase (see Annex Tables 10.5 and 10.6) through the rest of the decade.

10.31 Primary enrollments are projected to increase from 6.66 million in 1992 to 7.45 million in 1997 (an average annual increase of 2.4 percent). For preparatory education, the projections reflect reforms that created a double cohort of students in primary education in 1989 when one grade was eliminated (first and second grades were combined). As this double cohort passes through school, preparatory enrollments show a bulge before decreasing as the double cohort goes on to secondary education. In net terms, projected preparatory enrollments over the period covered by the Third Five-Year Plan increase to 3.98 million in 1997, from 3.47 million in 1992 (an increase of 2.9 percent). The effects of the double cohort are also felt in the projections for secondary enrollments. Total secondary enrollments are projected at 2.73 million in 1997, up from 1.97 million in 1992 (an annual increase of 7.7 percent).

10.32 Demand for Education. This increase in enrollments will require increases in teaching staffs, supplies and school structures. If the existing average of 43 students per primary and preparatory school classroom is to be maintained, some 18,300 additional primary and 5,000 preparatory classrooms will be required between 1993 and 1997. Finally, to maintain 35 students per classroom in secondary school, an additional 21,500 classrooms will be required (for a total of 45,000 new classrooms) to keep pace with the increase in population without any improvement in enrollment ratios or in the ratio of students to classrooms. The cost of building is LE 42,000 to LE 80,000 per room (according to MOP estimates), translating into a total cost of between LE 1.89 billion and LE 3.6 billion.

10.33 The General Authority for Educational Buildings (GAEB) has estimates of school construction needs over the next five years (see Annex Table 10.7). To keep up with population growth, GAEB estimated that 3,360 new schools would be needed, with a total cost of approximately LE 1.75 billion. The estimate includes primary, preparatory, and secondary technical and general education. The assumptions underlying these calculations are not available. However, these estimates would be compatible with those detailed above if the average number of classrooms per new school is 13. GAEB also estimated the incremental number of additional schools that would be needed to replace dilapidated schools and to remove second and third shifts while, at the same time, restricting the average class size to 50 students in areas with severely overcrowded schools. These additional goals raise the number of new schools to 11,450, with an estimated cost of LE 6.0 billion. This figure is 54 percent higher than the total investment

expenditure for pre-university education that MOP has approved for the Third Five-Year Plan (see Table 10.1). The funds allocated by MOP in the Third Plan appear to be sufficient to build the number of schools needed to keep pace with population growth; however, they fall far short of replacement needs and do not even begin to address the goals for education in the plan (e.g., remove shifts, reduce average class size, etc.).

10.34 The planned MOE increases in enrollments by level for the next five years (see Annex Table 10.8) indicate construction needs generally similar to those projected by GAEB. In primary education, the rate of growth in enrollments under the MOE five-year plan fluctuates around 2.7 percent per year, similar to the rate of increase suggested above. MOE projects more ambitious increases in enrollments at the preparatory level, with an average rate of growth of 3.5 percent over the five-year period. However, MOE envisions essentially no growth in total enrollments in secondary technical and general education over the five-year period, with declines in enrollments in FY94 and FY95 offset by growth in enrollment rates over the last two years of the plan. The enrollment goals in the plan, therefore, are quite modest, and perhaps even too modest, given the crucial role public education should play in the transformation of the Egyptian economy.

10.35 The Third Five-Year Plan, as recommended by MOP (see Annex Table 10.14), contains a lower capital expenditure for higher education (LE 3,120 million) than for primary and secondary/technical (basic) education (LE 3,904 million). Efficiency and equity both dictate that the Government should spend even a greater proportion of its funds on basic education and be more selective in its support of higher education programs.

10.36 The Government should consider a plan that openly institutionalizes cost recovery, especially at the secondary and higher education level. The introduction of significant fees at these levels could be accompanied by fee remission and scholarships for able students from low-income families. These charges could be made more palatable to parents by getting parent-teacher groups more involved in the management of the funds and by making sure that a larger share of the funds remains at local schools. The open use of cost-recovery measures would lead to a more optimal use of the education facilities and would facilitate proper maintenance and operations.

10.37 The Government has indicated an increasing willingness to consider these options. The Minister of Education has indicated that two goals for the next five years are to mobilize resources from students who come from more affluent families and to restrict free education at the secondary and college level to successful or excellent students. In addition, MOE has used several approaches to mobilize more

resources for technical education.⁷ In addition to the examination and similar fees charged in general education, students are also charged for access to certain types of equipment, such as computers. MOE has also used other cost-recovery measures in technical education. For example, industrial and agricultural schools are encouraged to produce for orders made by outsiders. MOE has established a number of "specialized industrial schools" located within public enterprises that provide the premises and the supplies and equipment needed for the operation of the schools. However, this program results in MOE covering the costs of firm-specific training, which should be paid in its entirety by the firm in question.

G. World Bank Recommendations

10.38 Overall government spending on education remains inadequate. The amount of the government budget allocated to the sector relative to GDP needs to be increased to reflect the economic and social value of education. To achieve the above target, based on the Bank's findings and assumptions (see para. 10.18), it is recommended that MOP, through its annual reviews of the plan, reconsider the allocations in the Third Five-Year Plan as follows: LE 4.5 billion to pre-university education, out of which the share for basic education would be LE 3.9 billion (87 percent); and a maximum of about LE 3.0 billion to higher education.

10.39 The above recommendations imply both an intersectoral and an intrasectoral reallocation of government resources to basic education, with emphasis on vocational and technical training. This is consistent with the positive externalities associated with basic education (see para. 10.13). From an equity standpoint, the targeting of fees and contributions in basic education is highly desirable if lower-income families are to have equal access to the education system. Special attention should be paid to certain target groups/areas, such as females and rural communities. The Government ought to consider a plan that rationalizes the use of contributions and the prevalence of private tutoring practices and increases the transparency of the educational finance system at all levels. One way to do this would be to involve parent-teacher groups in the raising of contributions and in the overseeing of their proper use.

10.40 Nongovernment resources in the sector should be mobilized through cost-recovery measures and policies that increase the role of the private sector. The Government should consider a plan that openly institutionalizes cost recovery, especially at the higher-education level, and cost control by merit standards, i.e., by introducing more restrictive procedures for access to post-secondary education, including scholarship funds for poorer students seeking higher education. The issue of vocational and technical training needs to be revisited and

⁷ "Egypt: Engineering and Technical Education Project (Ln 3137-EGT)", Staff Appraisal Report No. 7996-EGT, October 1989, page 10.

analyzed. The Government should strive to put together an educational system that is responsive to market needs. Public educational institutions should teach general skills and produce students capable of being retrained as market circumstances change, while instruction in firm-specific skills should be provided by employers. The role of the private sector in education should be more explicitly defined, and the regulatory environment governing the provision and operation of private education needs to be examined in an effort to encourage more nongovernment investment in the sector.

10.41 There are inefficiencies in the management of sector resources manifested by the imbalances in the distribution of these resources among the various expenditure categories; for example, budget allocations to recurrent expenditures do not take into account the implications for O&M of investment projects. Investment decisions are made by MOP, while O&M decisions are made by MOF. This has resulted in a shortage of recurrent funding for O&M, since pay has not been a negotiable item, and has led to the deterioration of the capital stock of educational facilities and, subsequently, to higher capital allocations. If these imbalances are to be effectively addressed, the managerial/institutional capacity of MOE should be strengthened, which, in turn, would improve MOE linkages to MOP and MOF. Investment decisions should emanate from a policy framework that more clearly identifies the role of the education sector in the economy.

H. Future Issues in Education

10.42 In summary, a number of issues will confront the education sector in the coming years. Clearly, the major issue confronting the education sector over the next several years is the growth in student numbers - a result of Egypt's population growth. The education sector will be hard pressed simply to keep pace with increased demand for school places, let alone improve the quality of education.

10.43 Rapid population growth and the need for improvements in the skills of Egyptian workers necessitate increases in funding for education in Egypt in the coming years. One way to supplement funds is with greater cost recovery, which already exists, though unofficially, in the form of private tutoring and contributions. However, because cost recovery is likely to remain inadequate and is more difficult to institutionalize in education than in other sectors, adequate maintenance funds will still have to come mostly from the general budget. This issue should be explicitly recognized in intrasectoral planning and the budget allocation process.

10.44 The Government needs to encourage the private sector to provide educational services at all levels. The Third Five-Year Plan does not contain an explicit assessment of the possible role of the private sector in Egypt's educational system. However, in Egypt, as in many other countries, private and public education are complementary. The private sector should be encouraged to take on, over the next

five years, more of the responsibility for providing education services than it has done over the last 40 years.

10.45 Above all, it should be emphasized that improving the quality of the education system in Egypt should be focussed on market-driven demand structures. Education's impact on productivity and economic growth can easily be constrained by economic policies that interfere with the free functioning of domestic labor markets. Thus, education reform must accompany labor market and general economic reform if better trained workers - and the Egyptian economy - are to reach their potential.

II. HEALTH

A. Background and Recent Developments

Role of Health in the Economy

10.46 A healthy population is both an end and a means of economic growth and development. Development constitutes not simply increases in income but also improvements in the physical quality of life and life expectancy. At the same time, a healthy and productive work force is an essential input to any economic process. Accordingly, improvements in health care are likely to benefit a country's population both directly (as measured by health care indicators) and indirectly (as measured by per capita incomes).

10.47 The Government of Egypt has made significant achievements in health care. Egypt has one of the most extensive rural health programs in the world, with no Egyptian living more than five kilometers from a government health facility. The Ministry of Health operates 225 hospitals and more than 2,000 rural clinics, and the ratio of population to physicians is 767 to 1, one of the lowest in the world. More than 90 percent of children are reported to be immunized against common childhood diseases, and a recent survey found that 95 percent of mothers are aware of the proper treatment for diarrheal diseases.

10.48 Despite these accomplishments, Egypt's health system faces important challenges. Life expectancy was estimated at 62 years for females and 60 years for males in 1991 (up substantially from 50 years for females and 47 years for males in 1964).⁸ Maternal mortality is still the leading cause of death among women of reproductive age, and the infant mortality rate stands at 59 deaths per thousand live births, compared to an average rate of 42 deaths for lower-middle-income countries, despite sharp reductions in the past 10 years. Infant and childhood diseases still represent a leading cause of death and morbidity. The incidence of some infectious diseases and several

⁸ World Bank, Financing Health Services in Developing Countries, Washington, 1987, Table A7, and World Bank, World Development Report 1993, Washington, June 1993.

endemic diseases (such as schistosomiasis) is still high relative to countries with similar per capita incomes.

10.49 Population. While these problems have been exacerbated by a lack of access to safe water and sanitation facilities in many areas, by far the most important factor contributing to the country's health problems is the rapid population growth in the last several decades. A continuous decrease in mortality and a much slower decline in birth rates have caused the Egyptian population to double between 1960 and 1990, from 26 million to 52 million. The population has also become increasingly young as a result of reduced infant mortality and emigration of adult workers to other Arab countries. Although annual growth rates have come down substantially during the past decade - from 2.6 percent in 1981 to an estimated 2.1 percent in 1991 - the population is still growing by about one million a year. This momentum will continue to strain resources in the health care sector - and in the rest of the economy - for many years to come.

B. Relative Importance of Public Expenditures on Health

10.50 Spending on health care constituted 2.6 percent of the central government's recurrent budget in FY92, which was close to the average share over the last decade (see Annex Table 10.16). The share of capital spending on health has increased during the same period, however, from 1.7 percent in FY83 to 3.2 percent in FY92 (see Annex Table 10.17). Central government capital expenditures on health were budgeted at LE 264 million for FY93, or 2.6 percent of total public investment that year. However, the share of total public expenditures on health (capital plus recurrent expenditures) has decreased from 1.1 percent of GDP in FY82 to 0.6 percent in FY90. Real per capita expenditures (in 1980 prices) on health subsidies and supplies decreased from LE 1.5 in FY84 to LE 0.5 in FY90.

10.51 Comparison with Other Developing Countries. Egypt spends less on health care (whether as a percentage of GNP or of total government expenditure) than most countries with similar per capita incomes (see Annex Table 10.20). In general, caution needs to be exercised when making international comparisons because they do not account for private sector health care. The private sector, however, plays a relatively minor role in Egypt's health care system (see paras. 10.63-10.65). Moreover, Egypt is well below the average in a comparison of health care indicators among the same group of countries (see Annex Table 10.21). Compared only to countries in the Arab World, in 1989 Egypt had the second lowest life expectancy at birth (60 years) and the second highest infant mortality rate (68 per 1,000 live births), in both cases being surpassed only by Yemen.⁹ Although these indicators have improved substantially over the last two decades, in general the rate of

⁹ World Bank, World Development Report 1990.

improvement has not exceeded that in other lower middle-income Arab countries, such as Jordan and Syria.¹⁰

C. Main Issues in the Health Sector

10.52 Patients commonly bypass primary or secondary facilities in favor of tertiary hospitals in Egypt (as in other developing countries), because of the low (or zero) fees and concerns about the quality of primary and secondary health care (Box 10.2). As a result, primary and secondary care facilities are being underutilized. Because tertiary care is more expensive to provide than primary or secondary care, its overuse is an important source of inefficiency and waste. Inducing patients to make greater use of primary and secondary care facilities could lead to substantial savings and free resources for primary and secondary health care.

10.53 Preventive versus Curative Health Care. It appears that the Government is spending too much on curative care at secondary and tertiary facilities and is devoting insufficient resources to preventive and primary care programs. Almost three quarters of government investment in health care approved under the Third Five-Year Plan will go to curative care, while about one half of the doctors and nurses employed by MOH provide curative services (see Table 10.2 and Annex Table 10.18). Estimates of the cost effectiveness of different forms of medical treatment are crude, but some studies estimate that the average cost of saving a life may be as high as US\$5,000 for curative care versus US\$100 for preventive care.¹¹ Of course, since hospitals treat the most seriously ill patients, their costs will inevitably be higher. Nevertheless, in a country like Egypt where infant mortality is high and parasitic and infectious diseases remain a significant problem, a reorientation of spending towards primary and preventive care and away from curative care is appropriate. Indonesia provides an interesting comparison. Although the country's per capita income in 1984 was only two thirds of Egypt's, its infant mortality, childhood mortality and life expectancy statistics are almost identical to Egypt's. Indonesia's success has been attributed in part to the heavy emphasis it gives to primary care, with hospital services consuming only 37 percent of recurrent spending on health care.

10.54 Because the beneficiaries of primary and preventive care tend to be disproportionately poor, financing these services has an equity component that is not present in curative care. Cost-recovery mechanisms, where appropriate (with medical insurance schemes in the public and private sectors to help cover costs), could be a significant

¹⁰ World Bank. Financing Health Services in Developing Countries. Washington: The World Bank, 1987. Table A7.

¹¹ Cited in: World Bank, Financing Health Care Systems in Developing Countries, Washington, 1987, p.19.

Box 10.2: The Structure of Egypt's Health System.

Egypt's health care system is composed of a government sector, a public, semi-autonomous sector and a private sector. The government sector provides primary health care, preventive services for endemic and infectious diseases and hospital services. Primary care is provided by the network of Rural and Urban Health Centers throughout the country and by "health offices" in urban areas. Primary care is also provided through the School Age Health Program of the Ministry of Health, which offers free checkups for students. Secondary care services are provided by general hospitals in urban centers and by government hospitals providing specialized care for chest diseases, skin diseases, etc. The general hospitals have not been very efficient, with occupancy rates of about 60 percent. In addition, because of low operational funding, the quality of secondary hospital services has been rather poor. Finally, tertiary care is provided by specialized institutes and university hospitals, which represent approximately 15 percent of total bed capacity in Egypt. The higher quality of care provided at these hospitals attracts patients throughout the country to their outpatient clinics, frequently without referrals from primary or secondary health care units.

source of financing for primary health care and could allow the health care system to expand services to the poor, especially in rural areas. The government bias towards urban and curative services has resulted in some regional inequalities, illustrated for example by an infant mortality rate that is five times greater in rural than in urban areas.

10.55 The above issues notwithstanding, it is harder in Egypt than in most countries to draw the line between basic or primary health care and curative secondary and tertiary health care. Many secondary and tertiary hospitals provide primary and preventive care in outpatient clinics and the extent to which resources need to be reallocated between activities may be overstated. Equally important are questions of health education and health environment. The principle underlying causes of excessive mortality among mothers and young children are high fertility, gastrointestinal and respiratory infections. These are problems that result primarily from cultural preferences for early marriage and large families, and from poor sanitation, inadequate nutrition, unsafe water supply and crowded housing. To improve the situation, individual

households must give more attention to personal hygiene and food preparation, family planning must be propagated and programs for housing and water supply must be strengthened.

Table 10.2: Annual Investments in the Health Sector

Third Five-Year Plan Annualized versus 1991/92
(1991/92 constant prices; LE million)

	Actual Health Investments (1991/92)	Annualized Investment Third Five-Year Plan (1993-97)		
		MOH Request	MOP Initial Proposal	MOP Final Allocation
Central Administration	115	196	132	-
Local Administration	108	155	70	-
Subtotal*	223	351	202	253
Authorities and Institutes	149	117	92	102
Total	372	468	294	355

Sources: MOP and MOH.

* Only central and local administration budgets are under MOH control.

10.56 Nutrition. Ensuring the food security of the population has historically been a major priority of the Government of Egypt. This concern for the nutritional welfare of the population is reflected in the food consumption profile of the country. From 1970 onward, per capita food availability in Egypt increased steadily with caloric availability reaching 3,390 calories per capita in 1980. Per capita food availability has remained at that level since the early 1980s. However, while these per capita levels of food intake seem high for the population as a whole, the data by themselves are misleading since there are significant portions of the population with inadequate energy intakes. Approximately 35 percent of the population consumes less than 2,000 calories per capita. The problem of inadequate consumption is slightly worse in the rural compared to the urban areas of the country. Moreover, children's energy intakes are often low due to maldistribution of food within the family.

10.57 Parasitic and Infectious Diseases. Most observers of Egypt's health system conclude that parasitic and infectious diseases control programs should be given top priority in the next decade. A significant portion of the population is heavily affected by endemic and parasitic communicable diseases. Among these, bilharzia (schistosomiasis) is the most serious. About 13 million Egyptians are estimated to be infected (more than one fourth of the population), which puts a heavy burden on the health care system and results in large expenditures on drugs and surgical interventions and a considerable loss of productivity and work days. Malaria is well controlled, but some centers exist around Lake Nasser on the Sudan side, from which there is a

constant threat. Leishmaniasis, which is transmitted through bites from infected sand flies, affects school children. This disease was thought to be under control but has recently reemerged in the Delta region. In addition, in recent years there have been increases in the incidence of hepatitis B, tetanus and encephalitis.

10.58 Institutional Problems. Health system institutions are weak. MOH has limited capabilities in project analysis, planning and long-term budgeting. As in the education sector described above, there is no link between capital spending in the Third Five-Year Plan and the recurrent budget. In particular, no consideration is taken of the recurrent costs for the maintenance and operation of the facilities called for under the plan. This lack of coordination leads to inefficiencies in the form of rapid depreciation of new investments through inadequate maintenance. Technical assistance for institutional development is needed in the Department of Planning at MOH, where there appear to be no clear priorities to guide investment decisions. The department lacks staff with appropriate training and skills, as well as computer equipment. All data handling is done manually. In addition, the sector suffers from a highly centralized health management system, a lack of trained professionals at the service-delivery level and an excess number of administrative personnel.

D. Public Expenditures in the Health Sector

The First and Second Five-Year Plans

10.59 Greater budget resources have been allocated to the health sector through the three five-year plans, but overall the Government has given the health sector relatively lower intersectoral priority. In the First Five-Year Plan, budgeted investment in the health sector represented 1.7 percent of public sector investments (LE 0.5 billion) while in the Second Five-Year Plan, the share rose to 2.9 percent (LE 0.8 billion). The actual amounts invested in health exceeded these levels during both plan periods, reaching LE 0.63 billion from 1982 through 1986 and LE 0.95 billion from 1987 through 1991. However, because total public sector investment greatly exceeded the budgeted amounts for these periods, investment in the health sector as a percentage of all public sector investment fell short of both plans' targets.

10.60 During the First Five-Year Plan, 115 health centers were completed or improved for primary and preventive care and 14 central hospitals and 39 rural hospitals were built. The Second Five-Year Plan budgeted for the rehabilitation of 100 health centers, the improvement of quarantine services and of laboratories involved in the production of the trivalent vaccine and the continuation of the bilharzia program in the Delta region and dehydration and malaria programs throughout the country. The Second Plan also called for the establishment of 25 new urban health centers and the rehabilitation of 15 existing ones, the opening of 50 school health clinics and the construction or

rehabilitation of 100 rural health clinics. The plan budgeted for the completion of 22 new "public and central hospitals" and for the replacement or renovation of 81 existing ones; it also included funding for the completion of a number of "educational hospitals" and the expansion of several existing hospitals. In addition, the plan aimed at the protection of the domestic pharmaceutical industry and at reaching a national sufficiency level of 86 percent of all medicines consumed. Data are not available to determine whether these targets have been met.

Medium-Term Spending Plans

10.61 Table 10.3 provides a summary of MOH requests and MOP approvals for investments under the Third Five-Year Plan.¹² As in the past, the bulk of investments approved under the plan will support curative care. MOP provided virtually all the requested funds for each of Egypt's six curative institutes (with only the Domiat Curative Institute receiving less than full funding), as well as for the Authorities for Biomedical Products and for Curative and Medical Research. The General Authority for Hospitals was also almost fully funded (with 91 percent of the MOH request approved). However, only about two thirds of the request for central administration, and less than half of the request for local administration was approved. In addition, the request for the General Authority for Health Insurance was cut by more than one third, although almost all of the reduction came from the self-financing portion. Overall, the criticism of previous five-year plans (and of health spending in general) that they place excessive emphasis on curative care at the expense of primary and preventive care remains true of the present plan.

**Table 10.3: Investments in the Health Sector
During the Third Five-Year Plan (1993-97)
(1991/92 constant prices; LE million)**

<u>Type of Health Care</u>	<u>MOH</u>	<u>MOP</u>	<u>World Bank</u>	<u>MOP Final</u>
Preventive/Primary	704	384	1,254	762 ^a
Curative/Secondary and Tertiary	1,639	1,089	1,089	1,011 ^a
Total	2,343	1,473	2,343	1,773

Source: MOH, MOP and Bank estimates.

^a World Bank staff estimates based on proportion of investment devoted to each type of activity in the sector for FY93 to FY95. (Source: NIB.)

¹² More detailed information is available in Annex Tables 10.22 and 10.23.

E. Sources of Financing

10.62 Sources of financing for the Third Five-Year Plan are detailed in Annex Table 10.23. Of the LE 1,772.9 in investments, only LE 125 million (or 7 percent) will be self-financed. These funds will come almost exclusively from the health insurance system. The bulk of financing, LE 1172 million (or 66 percent), will come from the National Investment Bank (NIB). The foreign exchange component of the NIB contribution is small. Grants from foreign donors represent the second most important source of finance at LE 463.2 million (or 26 percent). Loans amount to only LE 12 million (or less than one percent).

10.63 Projects financed or cofinanced by foreign donors most frequently support preventive care but also assist in family planning and institutional development (Box 10.3). There are other internationally financed projects outside the purview of MOH. These include, for example, USAID-sponsored projects totalling about US\$25 million and providing family planning assistance to the Egyptian Family Planning Association of the Ministry of Social Affairs, the National Population Council and the Regional Center for Training in Family Planning. The World Bank Group's involvement in the health sector in Egypt is limited to a US\$45 million schistosomiasis control project (IDA financing: US\$26 million), which was approved by the Board in June 1992.

10.64 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Health sector projects have been not been reduced in FY93 or FY94, and are to be reduced by less than LE 0.1 billion in FY95. At the ministry level, Ministry of Health targeted investments are reduced by LE 17.0 million, from 385.0 million to LE 368.0 million. MOP has not released any indication of which projects are to be reduced in FY95.

Cost Recovery Issues and the Private Sector

10.65 Egyptians have free access to all MOH health care facilities. However, rapid population growth, the shift toward higher cost curative services and the inefficiency inherent in a system that involves zero direct cost for users have put increasing pressure on free access. Budgetary allocations have not kept pace with the rate of increase in demand for services and, as a result, the quality of many MOH services has deteriorated over time. This policy has produced a system that provides citizens with a mix of services inappropriately balanced between primary, secondary and tertiary care. In addition, the system, which is available without charge even to those who can afford to pay, is of very poor quality.

10.66 Most MOH hospitals are operating under severe financial constraints and are providing care that, in many cases, does not meet minimum acceptable standards. Nevertheless, the Government has been reluctant to introduce copayments or other cost-recovery measures that

Box 10.3: Health Sector Grants and Loans Under Implementation.

<u>Project (Dates)</u>	<u>Amount</u>	<u>Description</u>
TB Prevention (12/89-12/93)	DFI 7.6 million	Dutch government financing to assist MOH in upgrading tuberculosis units and dispensary in order to increase the effectiveness of prevention and control programs.
Bilharzia Eradication (7/90-12/94)	US\$67.3 million	African Development Bank financing to reduce bilharzia infection among rural population in the Delta area.
Cost Recovery (currently in launching stage)	US\$85 million	USAID financing for upgrading of MOH, health insurance and curative organizations to allow hospitals to begin cost recovery operations. Also, funding for private physicians to build their own clinics and hospitals.
Primary Health Care (3/89-6/92) (5/86-12/93)	Fmk 10 million; DFI 7.270 million	Finnish and Dutch government financing for improving managerial and administrative skills of rural health unit staff and their supervisors; upgrading and renovating rural health units; and increasing community participation.
Child Survival (1986-1994)	US\$67.9 million	USAID funding for immunization programs; respiratory disease control; nutrition support for preschool children; and child spacing programs.

Source: MOH, 1992.

could help alleviate financial pressures. As a result, an informal system of payments and in-kind contributions has developed (as in the education sector, see para. 10.16-10.17) that represents a de facto cost-recovery system. This system, however, is not transparent in its accounting and can have a capricious impact on low-income households.

10.67 Not all public health care services are free in Egypt. The hospitals and clinics of the Curative Care Organizations (CCOs) and the Health Insurance Organization charge fees for service and, for the most part, operate on a cost-recovery basis. These clinics and hospitals are frequently cited as examples of how MOH tertiary hospitals could operate. For the year ending June 30, 1986, CCO revenues from all patients were LE 18.5 million. Net income was 8 percent of total revenues.¹³ One important component of a USAID-financed Cost Recovery Project is to provide for the renovation of facilities, new equipment, and the institutional development necessary to upgrade the services in MOH hospitals so that they can be operated on a cost-recovery basis. There are no other cost-recovery measures considered for this sector in the Third Five-Year Plan.

10.68 CCOs provide their services on a fee-for-service basis, with fees levied at four levels depending on patient accommodations (ranging from single-patient suites to four-patient rooms). Patients are treated directly by CCOs, according to their regular fee schedule, and companies are billed directly for reimbursement when the patient is an employee of a public sector firm. CCOs receive some money from employers as advances against anticipated treatment. Slightly more than one third of CCO patients have their bills paid by their employers, while about one third are patients of private practice physicians and about one fifth are patients who are admitted free, with the Ministry of Finance providing the hospital with a subsidy. USAID estimates that the average cost of a period of hospitalization at a CCO facility was roughly LE 278 in 1987. With an estimated poverty-line income of LE 2,966 for urban families and LE 2,222 for rural families in that year, the average hospital bill would represent 9 percent and 12.5 percent, respectively, of annual income. However, based on 1987 data, a contribution of LE 67 per family per year would have been sufficient to defray the costs of treatment in CCO facilities. A premium of this magnitude represents only 3 percent of the rural poverty-line income, a more manageable burden. Still, MOH studies estimate that up to 40 percent of the population is "medically indigent," i.e., they will postpone medical treatment because of the cost.

10.69 There is little reliable information on the size of the private health sector. USAID estimates put the private sector's share of total health care expenditures at 11.2 percent and its share of total hospital beds at 8 percent.¹⁴ Large group practices are relatively

¹³ USAID, Egypt: Cost Recovery Programs for Health, project paper.

¹⁴ USAID, Egypt: Cost Recovery Programs for Health Project Paper.

rare, and prepaid health maintenance organizations (HMOs) seem to be unknown.

10.70 NIB estimates of private investment in the health sector are detailed in Annex Table 10.19. Over the last four years, private investment in the health sector has been nearly constant, representing just half of 1 percent of total private sector investment. Private investment in health has hovered around LE 50 million annually, reaching LE 59 million in FY91 before falling to an estimated LE 50 million (in current prices) in FY92. Private investment in health care has varied from as little as one eighth to as much as one quarter of public sector health investment over the last few years.

10.71 Private health care prices are reported to have increased rapidly over the last few years, but there are no reliable data to confirm this. Rising prices will put additional pressures on the public facilities in the short term, but in the long term they may stimulate a favorable supply response and lead to an expansion of the private system.

F. Appraisal of the Spending Plan

10.72 Egypt's rapid population growth will continue to put pressure on the country's health care resources. Simply to maintain the present level and quality of health care, available resources will have to grow in real terms at the same rate as the population, about 2 percent per year from 1993 to 1997. As disease patterns shift from infectious and parasitic diseases and towards chronic diseases - which are more expensive to treat - demand for resources will grow even faster. The resources allocated for investment in the health sector in the Third Five-Year Plan barely meet the baseline resource needs imposed by population growth. Accordingly, any improvement in the quality of services will apparently have to be financed either by more extensive cost recovery and/or by greater reliance on less expensive primary and preventive care, wherever possible. A third option that needs to be explored would place greater reliance on private health services, especially in tertiary health care.

G. World Bank Recommendations

10.73 A case can be made for increasing planned investment expenditures for health, which are low from an international standpoint. With or without such an increase, the Government should move to restructure expenditures away from curative services and toward preventive and primary care. This shift would not only provide a more efficient use of available resources, but it would also increase equity in providing health services. As a first step in this direction, the Government should fully fund the MOH request of LE 2,343 million for the Third Five-Year Plan. However, funding for curative services could remain at the MOP-approved level of LE 1,089 million, with the remaining

LE 1,254 million devoted to preventive and primary care. This would represent a commitment of 54 percent of health care investment to primary and preventive care.

10.74 At the same time, the role of the Government in curative care (i.e., in secondary and tertiary care hospitals) should be reduced. Public sector curative health facilities should promote cost-recovery measures, such as differential user fees, in conjunction with an extension of medical insurance coverage. These cost-recovery measures will not only provide new resources for primary and preventive care but will help ration demand for curative care and give planners a better idea about the need for future capacity expansion.

10.75 The Government should also take a much more active role in targeting interventions to protect the most vulnerable groups: children, women of child bearing age and the elderly. These groups appear to receive insufficient care and are most threatened by dwindling resources.¹⁵

10.76 The Government should strive to improve the quality of care at the primary and secondary facilities. Better quality will require not only improvements in the facilities and equipment, but also better-trained health professionals. This would reduce the flow of patients to the outpatient clinics of tertiary hospitals. A stricter referral system may still be needed to control patient access to tertiary health facilities. A more widespread use of cost-recovery measures at the tertiary level would also help to control access to tertiary care facilities. Greater use could be made of primary and preventive care by providing better services (equipment, adequately compensated trained personnel) and stimulating public awareness (possibly through social marketing interventions) of the merits of adopting certain health measures.

10.77 The planning and management capabilities of the Ministry of Health should be improved. One important issue is the adequacy of MOH staffing. The ratio of doctors to auxiliary health personnel is too high as a result of the differential in salaries of doctors compared to nurses, for example. In addition, MOH appears to be overstaffed with administrative personnel. The compensation structure needs to be revised for the delivery of health services to be more cost-effective. A second important issue is the improvement of maintenance practices for hospitals and other facilities. The budgeting process must be modified to allow for the simultaneous consideration of investment and maintenance decisions. At the same time, the spending on maintenance for existing facilities needs to be increased.

¹⁵ See, for example, Ahmed Badran, "Structural Adjustments in the Health Sector to Protect the Vulnerable Groups," Cairo: UNICEF, March 1989.

H. Major Health Issues for the 1990s

10.78 In conclusion, a number of health care issues will become increasingly important in the next several years.

10.79 The greatest problem confronting Egypt's health care sector in the coming decade is how to expand services and improve quality to deal with the population growth of the last several decades. Simply keeping pace with population growth will require such significant resources (para. 10.68) that improvements in the quality of health care may prove unattainable.

10.80 Health care programs in parasitic and infectious disease control need to be made more effective. Complementary investments in water supply and sewerage systems are essential to long term success in this area.

10.81 Little is being done to create a system of public and private health insurance beyond what the USAID-financed Cost Recovery Project is trying to do. This needs to be corrected as cost recovery measures are introduced more fully into the health care system.

CHAPTER XI: INDUSTRY

Summary

This chapter outlines the major public sector investment projects proposed for the industrial sector (manufacturing and mining, excluding petroleum) under the Third Five-Year Plan.¹ Contribution of the industrial (manufacturing) sector to Egypt's overall growth has been small compared with other developing countries. The rate of growth of manufacturing industry has steadily declined over the last decade. Public sector manufacturing industry accounts for a large proportion of the sector's total valued added. The sector is critically affected by the ongoing structural reforms. The way manufacturing public enterprises decide on investment projects and their financing is being fundamentally affected by the reforms. Overall, the Third Five-Year Plan sets an ambitious growth target (7 percent per annum) for the industrial sector. Other important targets indicate a substantial increase in the rate of growth of manufactured exports (16 percent per annum) and a significant retrenchment of public sector investment in the manufacturing sector over the next five years.

A. Background and Recent Developments

Role of Industry in the Economy

11.1 Egypt's First and Second Five-Year Plans for the manufacturing industry aimed to establish a solid basis for the production of intermediate and consumer goods and to lay the foundation for the future production of capital goods. However, the central planning approach to development that was followed, the policy of high protection from imports that was adopted, the large reliance upon the public sector and the restraint upon the private sector through, inter alia, investment licensing resulted in a sector that in most cases is characterized by enterprises that are inefficient, producing goods of low quality at high cost that are not competitive with imports. The disappointing performance of the sector has been exacerbated by the strategy of comprehensive import substitution. This strategy has been translated by many policymakers and public enterprise managers into a

¹ Investments by the Ministry of Industry, as well as those "targeted" for the industrial public enterprises, were not reviewed by the Bank mission since the latter category of investments (the PE sector) have not been included in the budget of the central government since FY92. Moreover, because of an absence of key data such as financial and economic rates of return on a project-by-project basis, the Bank has not been able to evaluate the investment program for the industrial sector. Nevertheless, a brief analysis of key sectoral issues, including those relating to sectoral investment policies and ongoing reforms, are presented in this chapter.

policy of almost full national self-sufficiency, regardless of the country's main areas of comparative advantage. Consequently, the contribution of manufacturing industry, particularly public-sector manufacturing industry, in terms of jobs created and merchandise exported to Egypt's overall economic growth has not been as large as it could have been, given the amount of investments that have been implemented in the sector during the last decade. Also, the sector's performance does not compare well with that of manufacturing industry in developing countries with comparable resources but with a different development strategy - countries that have followed a market-based approach to development, adopted more appropriate macroeconomic policies and relied more heavily upon the private sector for undertaking investment in manufacturing enterprises.

11.2 The rate of growth of manufacturing industry in Egypt has steadily declined over the last 10 years. According to new Ministry of Planning (MOP) data, the sector grew during the First Five-Year Plan period (FY82-87) at an average annual rate of 9.2 percent, accounting for about 20 percent of the overall growth of the economy. During the Second Five-Year Plan (FY88-92), however, the sector's growth rate dropped sharply, to an average of 4.9 percent a year. (An annual growth rate greater than 9 percent had been planned for the period.) Sectoral growth accounted for about 20 percent of the overall economic growth during the Second Plan; the sector's share of value added in GDP rose from 16.7 percent (measured in 1986/87 prices) in FY87 to 17.4 in FY92. Compared to the average share for low- and middle-income developing countries (37 percent in 1990), Egypt's share is very low and points to problems in the manufacturing sector. In addition, data from MOP and the Ministry of Industry (MOI) indicate that in recent years between 14 and 16 percent of productive capacity of the industrial sector has been idle.

11.3 Despite slow growth, public sector manufacturing industry still represents a large proportion of output of both the manufacturing sector (about 50 percent of the sector's value added GDP in 1991/92), and public-sector-owned business enterprises (see Chapter III).² Since gross output and value added data are drawn from several different ministries, detailed, consistent and reliable information about these enterprises is not available. Most manufacturing public enterprises (PEs) are majority-owned by the Government and operate under the new PE Law 203 (which replaced the old Law 97). Because of the transition from the old to the new PE Law, the status of several PEs is still uncertain, and, thus, the data is even less reliable. However, on the basis of the available information, it is estimated that there are 11 industrial and mining holding companies with 157 affiliated companies and a public sector organization for military production (also producing civilian goods) with 16 companies. There are, in addition, several dozen joint-venture enterprises (Law 43, or its successor, Law 230, companies),

² About half of all Law 203 Public Enterprises are manufacturing enterprises.

which are majority-owned or controlled by the public sector, mostly through Law 203 companies.

B. Relative Importance of Industry in Public Investment

11.4 During the Second Five-Year Plan, the sector received 22.1 percent of aggregate investment expenditures (i.e., including both public and private investments), down from 23.8 percent during the First Five-Year Plan (Table 11.1). The sector's share in total public investment fell from 24 percent in the First Plan to 20 percent in the Second Plan. According to newly revised MOP data, the private sector's share in both total investment and value added in the industrial sector (mainly manufacturing) appears to have been rising over the last 10 years. In FY92, the share of the private sector in manufacturing value added is estimated to have reached 55 percent (up from 33.6 percent in FY82), while its share in total investments in the sector is estimated to have reached 49.0 percent (up from 38.0 percent in FY82). Allocations for investments in the public sector manufacturing enterprises were, until recently, a part of the Government's budget.

Table 11.1: Investment in the Industrial Sector, 1982-1997

	Actual ------(current prices)-----		Projections
	First Plan 1982-87	Second Plan 1988-92	Third Plan 1993-97
	-----LE billions-----		
Total Investments	56.4	114.9	154.0
Industrial Sector ^a	13.4	25.7	28.8
Public Sector	8.3	13.1	10.5
Private Sector	5.1	12.6	18.3 ^b
<u>Memo Items:</u>	-----percentages-----		
Industrial Investments as percentage Total Investments	23.8	22.1	18.2
Private Sector Industrial Investments as percentage Total Industrial Invest.	38.0	49.0	63.5 ^b

Source: Ministry of Planning.

Notes: ^a Includes mining but excludes petroleum.

^b The "targeted" private sector investment in the industrial sector could be as high as LE 21.4 billion if the "potentially private sector" investments, which amount to LE 3.1 billion, are included in the total; under this scenario, the share of private sector investment in total industrial investments would rise to 74.3 percent during the Third Five-Year Plan period.

C. Main Sectoral Issues

11.5 Like the other sectors of the economy, the manufacturing industry in Egypt is affected by the economy's structural adjustment. Increased competition from imports will have a significant impact on productivity performance of both private and public sector enterprises. The latter group, however, is likely to experience a difficult adjustment period. In addition to a changing market environment, the PEs, including the manufacturing PEs, are now subject to organizational and managerial changes as a part of a comprehensive public enterprise reform, a major objective of which is privatization. In addition to preparing about 100 PEs for privatization, government plans call for restructuring a large number of PEs and for liquidating certain nonviable enterprises. Although the exact numbers are not yet known, it is very likely that the manufacturing PEs will account for a major proportion of the PEs that will be privatized and restructured, as well as for those that may be candidates for liquidation.

11.6 The way manufacturing PEs decide which investments to make and how to finance them will be fundamentally and drastically affected by the Government's ongoing reforms. The past practice of allocating budget resources for PE investments in projects has been discontinued. All manufacturing PEs have lost access to budgetary allocations and have to finance their investments from self-financing (retained earnings) and/or funds borrowed in the financial markets. In other words, these enterprises will be facing hard budget constraints. Under the new rules, and in accordance with the agreed policy of the Government under the SAL, investments by PEs, including manufacturing PEs, can no longer be considered part of the public sector investment program.³ The Third Five-Year Plan document does not, therefore, contain an analysis of any PE investment projects in the manufacturing sector.

11.7 No major decision has, as yet, been taken on the new investment policies and processes that should be followed by PEs. However, the Government, as a part of the second phase of its reform program, will agree with the World Bank by end-December 1993 on policies and procedures that will apply to the allocation of funds from the Government for enterprises that are candidates for restructuring and privatization. To be consistent with PE reform, it is important that the Government clearly and unequivocally:

- 11.7.1 (1.) Decides and publicly announces that its policy is now one of selective intervention in strategic activities or instances of market failure, rather than a policy of unrestricted, large-scale intervention.

³ The Bank was informed by the Government in March 1992 that, except for ongoing projects, PEs subject to the new PE Law No. 203/1991 are no longer required to finance their new investments from NIB and that their investment activities are no longer a part of the Government budget.

- 11.7.2 (ii.) Defines what is meant by "strategic industries." The so-called strategic industrial PEs, which are some of the largest industrial units and, therefore, are likely to remain under the financial protection of the central government, are those PEs that the public sector will continue to be allowed to invest in. Most of these industries are currently facing financial difficulties and will continue to do so unless they undergo major restructuring and rationalization. (See Chapter III, Box 3.2.) It is not clear how long the Government can continue to justify further resource allocation to these industries on strategic grounds.
- 11.7.3 (iii.) Decides and publicly announces that projects sponsored by PEs should be fully justified on economic, financial, technical and environmental grounds.
- 11.7.4 (iv.) Requires that financing for PE projects be from retained earnings and/or capital markets, without any budgetary support from the Government. In addition, all necessary debt financing must be secured from independent financial institutions on market comparable terms, to ensure that an independent judgement of the overall viability of the investment proposals is secured.
- 11.7.5 (v.) Indicates that the criteria used in verifying whether proposed investment projects are consistent with government policy will be very strict and stringent. To be consistent with the other PE reforms, only the best performing PEs with high rates of return should be given the opportunity and the resources to invest in new projects, whether these are for replacement, modernization, balancing, expansion or new activities. Proposals to that effect are being made as a part of the policy guidelines for PE performance evaluation. These should be complemented by consistent investment policy proposals, not only for manufacturing PEs, but for all PEs.
- 11.8 A number of important concerns relating to the investment and maintenance programs of the manufacturing PEs during the restructuring and privatization period must still be addressed. To ensure that the manufacturing PEs adjust to the new economic incentives and environment, the right industrial policies and strategies must be adopted and the proper institutional support provided. This supposes that the role of the Government will be changed from active participant in the management of business activity to policy-maker and, where necessary, regulator. The Government would, however, be able to influence the industrial sector through incentives aimed at the autonomous PE managers.

11.9 Changes in the Role of MOI. Such a transformation has required a major change in the role of MOI as well. MOI is no longer operating as the direct manager of the 114 public-sector-owned enterprises or as a licensor of manufactured investment projects. It would, instead, focus on promoting manufacturing activity through the private sector, deregulating all but the most limited (mostly natural monopoly) activities, collecting and disseminating reliable and consistent data about industrial activity to potential investors and the public at large, and training workers in the skills needed by the manufacturing sector. In order to perform its new role effectively, the MOI mandate over policy formulation and the promotion of manufacturing activity should extend to the whole of the manufacturing industry, instead of being limited to just a few activities. Responsibility for policy formulation and implementation in the manufacturing industry is now fragmented among several ministries.

11.10 Financial Viability. Another major concern is the financial viability and productivity performance of industrial public sector enterprises (the Law 203 PEs, as well as others) during the economy's adjustment and transition period. Improving financial viability is likely to be both difficult and costly since many enterprises (despite a program of rationalization and reform that started in 1986) are loss-making. The loss-making enterprises would have difficulty raising the needed funds from financial markets without government guarantees. The losses suffered by these enterprises are mainly due to high levels of debt service, low productivity and, in many cases, overstaffing, despite hiring freezes that have been in effect for some years (see Chapter III). In addition, there are apparently large arrears (accumulation of unpaid bills) owed by the central Government, as well as cross-arrears owed by the enterprises, all of which need to be regularized. As a part of its reform program, the Government and holding companies (HCs) would agree on annual restructuring and exit programs. These programs would include a list of the PEs that need to be restructured or liquidated and the specific actions that need to be taken, with timetables. Parallel to this, the Government is presently undertaking a study on arrears and cross-arrears of PEs.

11.11 Environment. Public sector industrial enterprises are the biggest polluters of the environment in Egypt. A large number of industrial public sector enterprises must deal with the massive degradation of the environment, such as severe air and water pollution, that results from their operations. In Helwan, a major industrial center in a suburb of Cairo, it is estimated that 29 percent of the school children suffer from lung diseases, and people living in the residential areas of Cairo are exposed to high levels of lead. High concentrations from polluting industries, e.g., cement, fertilizer, chemical and steel industries, in and around the major population centers of Cairo and Alexandria contribute to elevated levels of dust and SO₂ in the air. It is estimated that between 20,000 and 50,000 tons of hazardous waste are produced annually from industrial activities and

are not disposed of properly.⁴ Therefore, the investment plans of the public sector PEs must include provisions for dealing with the environmental problems that these PEs cause. Third Plan documents contain listings of numerous projects for energy conservation and for dealing with environmental problems of existing public sector industrial plants. The Bank, however, has not received detailed feasibility studies for such projects.

D. Sectoral Objectives and Strategy

11.12 The Third Five-Year Plan lists several qualitative objectives for the manufacturing industry in Egypt. The most important of these are: emphasizing industrial production for export, and the attendant quality and competitiveness concerns; taking developmental and social aspects into account, such as the need for regional development and the shift away from major urban centers; moving beyond the stage of "consumer industrialization," i.e., concentrating more on producing capital goods and intermediate products; limiting the expansion of the public sector and restricting it to new projects that are "highly essential," thereby allowing the private sector to substantially expand its participation in Egypt's industrialization process; utilizing more fully, more productively and more efficiently the existing capacity in the public sector; accelerating the implementation of ongoing projects to bring them on-line quickly, so as to enhance economic performance; emphasizing small-scale industry; improving industrial productivity and efficiency, as well as product quality; and drawing up a new map for Egyptian industry to stress the need for movement away from urban areas. This is translated within the framework of the Third Five-Year Plan, in quantitative terms, into the following main objectives for the manufacturing sector:

- 11.12.1 (i.) an annual rate of growth of industrial value added of 7 percent (10.6 percent p.a. for the private sector and 1.1 percent p.a. for the public sector), which is well above the planned GDP growth rate of 5.1 percent;
- 11.12.2 (ii.) a significant retrenchment of public investment in industry and mining, both in absolute and relative terms, from LE 13.1 billion in the Second Five-Year Plan to LE 9.7 billion (this amount, in constant 1991/92 prices, includes a rough "target" of LE 6 billion for the industrial PEs) in the Third Plan; and,
- 11.12.3 (iii.) a substantial increase in the rate of growth of manufactured exports, projected to average 16 percent a year, as compared to 6.9 percent for total exports.

⁴ Arab Republic of Egypt, Environmental Action Plan, May 1992.

11.13 The above-mentioned objectives, particularly for exports, are ambitious. Their best chance of being achieved lies in a policy that encourages the private sector to accelerate its investment and to expand its activities in areas of comparative advantage and exports. Both policy and regulatory reforms will determine the pace at which the private sector meets the objectives of the Third Five-Year Plan.

11.14 The Third Five-Year Plan has targeted about LE 28 billion for the manufacturing and mining industries, or about 18.2 percent of total investment during the Third Plan period. The private sector (including Law 43/230 joint venture companies) is expected to invest about LE 18 billion in the industry and mining sector, or about 12 percent of the total investments (26 percent of the plan's targeted total for private sector investment). The public sector, including PEs, is expected to invest about LE 9.7 billion, or about 6.3 percent of total investments (11.5 percent of the plan's total public sector investments). The latter is intended for the replacement and renewal needs of manufacturing PEs; for the modernization of certain industries; and for the completion of some ongoing projects. Included in the LE 9.7 billion total for public investment in manufacturing is about LE 3.1 billion designated as "potentially private sector" (see Chapter II), which, if undertaken by the private sector, would increase the private sector's total in the industrial and mining sector to LE 21.4 billion during the Third Plan period and reduce the public sector investment to LE 6.6 billion.

11.15 According to the final Third Five-Year Plan document, the share of private sector investment in manufacturing, which averaged 49.0 percent during the Second Five-Year Plan, is expected to average about 64 percent during the Third Plan; the exact amount will, however, depend, according to MOP, upon the extent to which the private sector is willing to undertake projects initially proposed by public sector enterprises (i.e., the above-mentioned LE 3.1 billion) and their response to the ongoing structural reforms. The Bank did not receive any feasibility studies on these projects.

E. Planned Projects over the Medium Term

11.16 The Third Five-Year Plan includes a list of 25 projects in the manufacturing PE sector described as major manufacturing projects (see Annex Table 11.1). The brief description of each project in the Third Plan document does not indicate whether a project is expected to be undertaken by the public or the private sector; it does, however, indicate the nature of the project, i.e., whether it is for replacement, restructuring, modernization, etc.; the total cost; the expected date of entry into production; the expected total output; and, in some instances, the major inputs and expected employment. No information is included about projected economic and financial rates of return, nor about the rationale and justification for these projects.

11.17 The aggregate total cost of these 25 manufacturing projects is about LE 6 billion, or about 63 percent of total investment allocations for the industry and mining sector. Nine of these projects are very large, with an aggregate total cost of LE 4.22 billion. Each one of these nine projects has a total cost that exceeds LE 300 million (about US\$90 million). The list includes 11 new projects, with an aggregate total cost of LE 2.9 billion; 5 replacement and renewal projects (LE 1.8 billion); 3 expansion projects (LE 0.4 billion), 2 restructuring and modernization projects (LE 0.3 billion); and 3 completion projects (LE 0.7 billion).

Major Manufacturing Projects under Implementation

11.18 Other than three completion projects included in the list of 25 major projects, the Third Five-Year Plan document does not make clear how many manufacturing projects are under implementation or what is the investment allocation for each project. The other 22 major manufacturing projects are listed in Annex Table 11.1 (Vol.II). With respect to the three completion projects specified in the Third Plan, the plan document indicates the following:

- 11.18.1 National Engine Project: This project, which was started during the Second Five-Year Plan, aims to produce domestically about 10,000 engines per year, with the number of cylinders varying between 6 and 12. The project will provide 900 new job opportunities. Its total cost is LE 257 million (US\$77.9 million). The project is expected to enter production in FY97, and only LE 12 million was allocated for it during the Second Five-Year Plan;
- 11.18.2 Electric Motor Project: This project aims to produce domestically about 1,500 electric motors with capacities varying between 25 and 400 horsepower. Its total cost is LE 94 million (US\$28.5 million). The project was begun before the start of the Third Five-Year Plan, but no figures were given on expenditures up to the end of FY92. It is expected to enter production in FY97, to employ about 400 persons and to have a domestic content of about 58 percent; and,
- 11.18.3 Cast Iron and Steel Project: This project aims to produce domestically about 8,500 tons of specialty steel. Its total cost is LE 390 million (US\$118 million), and about LE 59 million was spent on it before the start of the Third Plan. It is expected to enter production in FY97, to employ about 300 persons and to have a domestic content of about 45 percent.

F. Sources of Financing for Projects in the Industrial Sector

11.19 PE Investments. The Third Five-Year Plan documents dealing with the manufacturing industry do not provide details of possible sources of financing for investments in the PE sector. There is only a brief reference in a supporting table to the sources of finance for projects by the industrial PEs under Law 203, which indicates that, of the total of about LE 6 billion in investments during the Third Plan by the nine industrial holding companies (i.e., excluding those in the "potential private sector" category, which amounts to LE 3 billion for the industrial sector), about LE 5.4 billion (85.4 percent) will be financed from local sources, including self-financing; the rest will be from foreign sources.

11.20 Other Major Industrial Projects. In addition to the 25 manufacturing projects in the PE sector, there are 69 projects (LE 1.19 billion) under the Ministry of Industry (MOI) and 48 projects (LE 1.35 billion) under the Ministry of Military Production (MMP). Not all of these projects, however, appear to be of an industrial nature. Indeed, the Third Plan tables indicate that the total industrial investments by all Ministries, Economic and Service Authorities amount to less than LE 1 billion. Major projects under MOI include the phosphate plant at Abu Tartour (completion, LE 300 million); the light industry complex in Aswan (completion, LE 59.4 million); and the transportation sector projects, Wadi El-Gadid/Red Sea railroad line (completion, LE 210 million) and El-Dilheila Harbor, Phase I (completion, LE 332 million). The 48 MMP projects are broken down as follows: 16 rehabilitation/renovation projects, LE 394.8 million; 5 completion projects, LE 646.5 billion; and 27 expansion/new projects, LE 313.1 million. The Bank has not received detailed information or feasibility studies for any of these projects.

11.21 Sources of Financing for MOI and MMP Projects. Investments by MOI under the Third Five-Year Plan are almost exclusively financed by NIB (LE 1.1 billion, or 93.0 percent of MOI total). Self-finance (LE 15.5 million) accounts for 1.3 percent; foreign grants (LE 396 thousand) and foreign facilities (LE 67 million) account for the remaining 5.7 percent. The LE 67 million in foreign facilities supports the Wadi El-Gadid/Red Sea rail line, representing 32 percent of that project's total financing. (The foreign grant element is intended to support studies and research of MOI.) MMP investments are financed by NIB (LE 578 million, 42.7 percent), self-financed (LE 303 million, 22.3 percent) and foreign loans (LE 473.6 million, 35.0 percent). MMP projects receiving significant foreign loan financing are: Abu Za'bal mobile artillery (expansion/new, LE 95 million in foreign loans); Helwan Company small engines (expansion/new, LE 33.5 million in foreign loans); and Factory 200, production of armored vehicles (completion, LE 345.1 million in foreign loans).

11.22 Subsequent Modifications. Subsequent to the final adoption of Third Five-Year Plan investment projects and financing levels, MOP has announced some revisions. Manufacturing and mining sector projects

have been reduced by less than LE 0.1 billion in each of the years, FY93, FY94 and FY95. At the ministry level, Ministry of Industry's public investment program has been reduced as follows: FY93, from LE 201.0 million to LE 160.3 million; FY94, from 222.7 million to LE 201.0 million; FY95, from 229.0 million to LE 205.0 million. Ministry of Military Production investment projects is unchanged. Regarding individual projects, MOP has released specific project reductions to the World Bank only for FY94. Projects scheduled to receive reduced funding are: Abu Tartour phosphates (by LE 11.7 million) and the Wadi El-Gadid/Red Sea railroad line (by LE 10 million).

G. Summary of Public Investment Program for the Industrial Sector

11.23 The Bank did not receive detailed feasibility studies on the investment projects to be initiated by either Law 203 or non-Law 203 PEs in the industrial sector. Furthermore, Third Plan document include relatively little on the proposed public sector investment projects for the industrial sector. This, however, is consistent with the Government's reform program. The new economic policy and the reform strategy requires that all PE investments be financed with retained earnings from their operations and financial resources mobilized in the capital markets. This implies that the responsibility for project appraisal falls upon capital market participants such as lenders or equity investors.

11.24 Based on the information made available to the Bank by the Government of Egypt, the final Third Five-Year Plan allocation for the industrial and mining sector is LE 6.6 billion, of which LE 0.6 billion is for the industrial projects under the central government ministries and authorities and LE 6 billion for the PEs in the sector.

11.25 Given the new policy for the overall public investment program and for PE investments, it should be apparent that once the Government has set and declared its policy, PE managers and capital market participants should be left to independently assess the priority of proposed PE investments. All projects, including those for replacement, renewal, rehabilitation and restructuring, should be properly prepared and evaluated.

11.26 The Public Enterprise Sector. The Third Five-Year Plan and its supporting documents indicate that the holding companies (17) and their affiliates that are subject to the PE Law 203 are expected to invest about LE 9 billion during the Third Plan period, of which about 66 percent will be for replacement and renewal investments; 21.5 percent for completion projects; and only 12.5 percent for expansion or new projects. The nine holding companies that can be considered to be predominantly industrial in nature are expected to invest about LE 6 billion, almost three quarters of which will be investments by the four holding companies for textiles, chemicals, metals, and building materials. The information available does not permit an analysis of the

nature of the investments of each of the holding companies nor of their affiliates.

H. Role of Industry in the 1990s

11.27 Achievement of the Third Five-Year Plan targets requires (and assumes) that the public industrial sector will play a critical role by contributing to the acceleration of growth in GDP, new employment opportunities and non-traditional exports. The aim of the new economic policies is to enhance the role of the private sector and to help public-sector industry achieve its maximum potential. Since the existing productive capacity of the PEs is seriously underutilized, managers for the economically viable enterprises should place a high priority on increasing operating capacity and efficiency rather than on new investments to expand capacity. Thus, given the much tighter financial situation envisioned for the 1990s, public-sector industry must ensure that its investment resources are used with maximum effectiveness before proceeding to undertake any major new investments. Such new investments must be: (i.) consistent with the new policy governing PE investments and eventually lead to privatization since the Government's stated strategy is to significantly reduce the role of the public sector in the industrial commercial areas, and (ii.) fully justifiable on the basis of economic, financial, technical and environmental merits.

11.28 Finally, a relatively prominent role for small-scale industry is implied by the MOP data for the past two decades and is projected for the Third Five-Year Plan period, both in investment and production activity (see Chapter IV). Small-scale activity seems to have been instrumental in pooling savings, setting up economically viable enterprises and providing significant new employment at relatively low levels of capital intensity in recent years. However, in order for the Government to promote the continued growth of the small- and medium-scale manufacturing sector, it will have to relieve the many serious constraints faced by the sector. The Government should consider providing these enterprises with greater access to credit and serviced land, as well as improving the structure and administration of taxes.

I. Intersectoral Issues

11.29 The key linkages between the manufacturing sector and the other major sectors of the economy are many and, in some instances, complicated and, thus, difficult to trace. However, the most important linkages that need to be singled out involve those sectors where prices are heavily distorted. Prime among these are:

11.29.1 (i.) Those industrial PEs that rely heavily upon subsidized energy prices. Since liberalization of energy prices is well under way, it is likely that many PEs have adjusted to

a substantial extent already and will likely be able to adjust successfully to any remaining changes in energy prices that will need to be made. The major exceptions may be those few PEs whose restructuring in response to changed circumstances has been delayed and those that are heavily dependent upon energy, such as producers of cement and fertilizers.

- 11.29.2 (ii.) Those industries that are dependent upon domestic sugar, which is currently being produced behind a high protection barrier and is dependent upon free water. As the sugarcane sector is deregulated over the next two years, these industries would face a difficult adjustment period ahead.
- 11.29.3 (iii.) The textile industry, some parts of which are highly dependent upon the price of cotton. Cotton has long been subject to government imposed controls on procurement and pricing; the liberalization of the cotton sector, already under way, is expected to adversely affect the textile PEs.

11.30 The impact of policies of regional and new city development on the manufacturing sector (i.e., the benefits derived and costs incurred) also needs to be fully explored. Given the investment and resource allocation implications of such policies, it is important that the Government begin to conduct a study of this set of issues as early as possible.

J. Role of the Private Sector

11.31 If measured in terms of its rate of participation, whether as a percent of output, value added or employment, the private sector has made significant progress in many areas of manufacturing activity in recent years. Nonetheless, the private sector has been tightly constrained in a number of ways by both formal government controls, such as investment licensing and the monopoly on cotton procurement and processing, as well as informal ones, such as the fear of too much dominance by the public sector in some activities, e.g., cement and fertilizer production. As mentioned above, the new economic policy relies heavily upon the willingness of the private sector to be forthcoming and to undertake investments in the manufacturing industry. This will be more likely to occur if investors become convinced of the sustainability of the reform; if the government-imposed controls, such as investment licensing, are removed; and if the privatization and PE reform programs proceed in a timely fashion. The willingness of the private sector to invest in manufacturing is also affected adversely by the complex and fragmented system of investment incentives. The role that such a system should continue to play is becoming the subject of increasing concern and should be addressed in a systematic and comprehensive manner. Policy measures under the second phase of the

Government's reform program are expected to remove most of the major obstacles to private investment.⁵

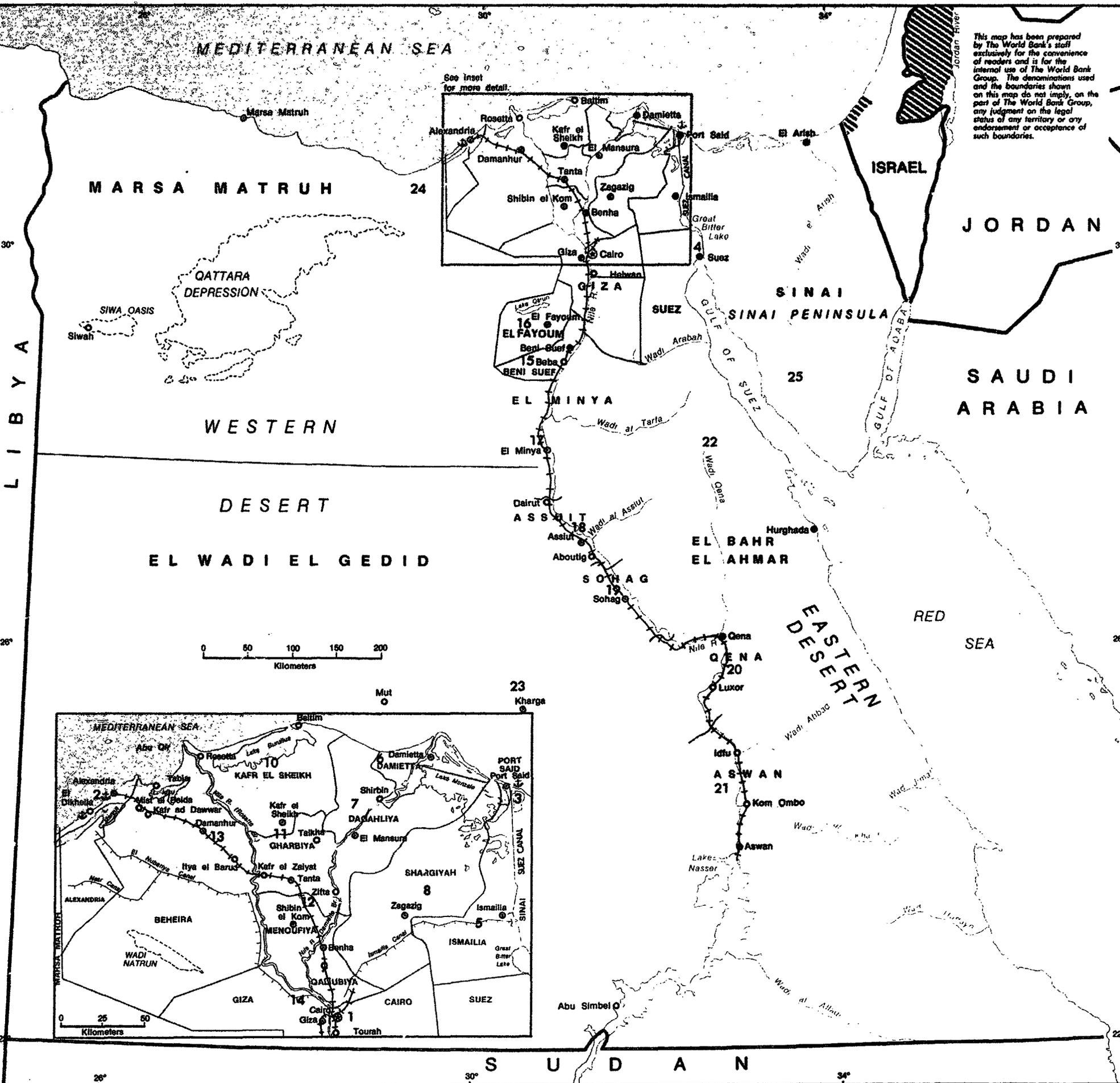
11.32 Privatization in the Industrial Sector. During the first phase of its reform program (1991-93), the Government had targeted a total of LE 11.6 billion of companies' assets to be brought to the point of sale and LE 6.1 billion for sale (representing about 16 percent and 8.4 percent, respectively, of total HC assets of LE 73 billion at historical book value). As of mid-1993, assets brought to the point of sale amount to LE 2.47 billion, while those actually sold amount to LE 1.17 billion. In addition, under the 1993/94 Privatization Program, the authorities have targeted to bring to the point of sale some 40 companies and assets with a combined asset value of LE 9.1 billion (about 12 percent of total HC assets), with a target sale of LE 3.6 billion in HCs' assets by end-June 1994.

11.33 The industrial companies and assets included in the Government's Privatization Programs for 1991/92, 1992/93 and 1993/94 are as follows: for the 1991/92 Program, out of the 20 companies and assets amounting to LE 1.4 billion, 8 companies and assets are in the industrial sector, accounting for 46.5 percent of the total value of the Program; for the 1992/93 Program, out of the 26 companies and assets, amounting to LE 1.3 billion, 13 companies and assets are in the industrial sector, accounting for 77 percent of the total value of the program; and for the 1993/94 Program, out of the 40 companies and assets with combined value of LE 9.1 billion, 22 companies and assets accounting for 52 percent of total value in the Program are in the industrial sector. Furthermore, as a part of the second phase of the Government's reform program, the Privatization Program will be further expanded. The Government's target for completed sales, on a cumulative basis, of companies and assets by end-December 1995 is about LE 31 billion (42 percent of total HCs' assets), of which more than half are expected to be in the industrial sector.

⁵ Preparation of a Private Sector Assessment Study for Egypt, which would build on the work already done by the Bank in the area of the regulatory environment, is underway by the Bank staff. The report would identify the key constraints to rapid private sector development in Egypt, and would make policy recommendations on how to improve the situation.

ARAB REPUBLIC OF EGYPT BANK / IDA ASSISTED PROJECTS SINCE 1980 BY SECTOR

This map has been prepared by The World Bank's staff exclusively for the convenience of readers and is for the internal use of The World Bank Group. The denominations used on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.



AGRICULTURE:			
• Agro Industries I	1980	DFC:	
• New Land Development	1981	• Development Industrial Bank IV	1980
• Fish Farming Development	1981	• Mir Iran Development Bank	1980
• Technical Assistance	1981	• Development Industrial Bank V	1982
• Agro Industries II	1983		
• Irrig. Pumping Stations Rehab.	1983	INDUSTRY:	
• Agricultural Development II	1985	• Textile II	1980
• Drainage V	1985	• Pulp and Paper	1980
• Channel Maintenance	1985	• Hadisob Rehabilitation	1981
• Agricultural Storage	1989	• El Dikheila Reinforcing Bar	1983
• Irrig. Pumping Stations Rehab. II	1990	• Small - & Medium - Scale Industry	1984
• National Drainage	1992	• Export Industries Development	1984
		• Construction Industry	1984
ENERGY:		WATER SUPPLY & SEWERAGE:	
• Cairo Gas Distribution	1980	• Water Supply	1981
• Power III	1980	• Water Supply & Sewerage	1984
• Western Desert Petroleum Exploration	1981		
• Abu Gir Gas Development	1982	TELECOMMUNICATIONS:	
• Power IV	1989	• Telecommunications III	1982
• Gas Investment	1991		
• Kureimat Power	1992	URBAN:	
		• Greater Cairo Urban Dev't.	1982
TRANSPORTATION:		POP. HEALTH & NUTRITION:	
• El-Dikheila Port	1982	• National Schistosomiasis Control	1992
• Road Maintenance	1983		
• Port Said Port Expansion & Rehab.	1985	HUMAN RESOURCES:	
		• Social Fund for Development	1991
EDUCATION:		ECONOMY-WIDE:	
• Education III	1981	• Structural Adjustment	1991
• Vocational Training	1983	• Technical Assistance for Privatization	1992
• Vocation Training (Electrical)	1985	• and Banking Reform	
• Eng. and Tech. Education	1990		

* Indicates project completed

Only projects after 1979 have been shown, due to space limitations in the list.

**POPULATION BY GOVERNORATE
(1986 DATA):**

1 CAIRO	6,068,695	14 GIZA	3,725,420
2 ALEXANDRIA	2,926,859	15 BENI-SUEF	1,449,229
3 PORT-SAID	401,172	16 FAYOUM	1,551,214
4 SUEZ	327,717	17 MINIA	2,645,112
5 ISMAILIYA	545,259	18 ASSIUT	2,215,679
6 DAMIETTA	740,365	19 SOUHAG	2,447,033
7 DAKAHLIYA	3,484,102	20 GENA	2,258,926
8 SHARKIYA	3,414,308	21 ASWAN	809,204
9 QALUBIYA	2,515,924	22 RED SEA	89,724
10 KAHR-EL-SHEIKH	1,809,221	23 EL-WADI EL-GEDID	113,405
11 GHARBIYA	2,884,599	24 MATROUGH	161,163
12 MENOUIFYA	2,221,315	25 NORTH SINAI	170,835
13 BEHEIRA	3,248,829	SOUTH SINAI	28,929
		TOTAL	50,504,238*

* Excludes Egyptian population out of the country (2,250,000)

- Cultivated Areas
- Canals
- Wadis
- Ports
- Railroads
- Physical Features
- National Capital
- Governorate Capitals
- Town and Villages
- Governorate Boundaries
- Occupied Territories