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India Port Sector Strategy Report

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ABBREVIATIONS

ADB	Asian Development Bank
BOT	Build, Operate, Transfer
BPT	Bombay Port Trust
CFS	Container Freight Station
CIF	Cost, Freight, Insurance
CPC	Central Planning Commission
CPT	Calcutta Port Trust
DCI	Dredging Corporation of India
DLB	Dock Labor Board
DWT	Deadweight
EDI	Electronic Data Interchange
FOB	Free on Board
FY	Fiscal Year (April 1 - March 31)
GC	General Cargo
GOI	Government of India
IAS	Indian Administration Service Cadre
ICD	Inland Container Depot
IIPM	India Institute of Port Management
IMO	International Maritime Organization
IPA	India Ports Association
JNPT	Jawaharlal Nehru Port Trust
LCL	Less than Container Load
MARPOL	International Convention on Marine Pollution
MED	Mechanical Engineering Department
MIS	Management Information System
MOST	Ministry of Surface Transport
MPFC	Main Ports Reform Committee
MTO	Multimodal Transport Operator
NIPM	National Institute of Port Management
NPA	National Port Authority
PC	Planning Commission
PDB	Ports Development Board
PDF	Ports Development Fund
RITES	Rail India Technical and Economic Services
RTG	Rubber Tired Gantry Crane
SBM	Single Buoy Mooring
TEU	Twenty-foot Equivalent Unit Container

**INDIA
PORT SECTOR
STRATEGY REPORT**

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PREFACE

- (i) This report concentrates on general cargo, mainly containerized traffic, which is the most important type of traffic for the development of trade, particularly industrial exports. As one of the driving forces for accelerating economic development, exports should be the principal focus of modernization efforts to increase productivity. This report concentrates on the main issues facing the ports and attempts to define policies in the areas of operations, institutions and finance, in addition to making a limited number of specific recommendations. The proposed policies closely relate to GOI's policy and VIIIth Plan objectives.
- (ii) This report is mainly based on information gathered during the India Port Modernization Study conducted in July/August 1992. Written in 1993, it was updated in February 1995, based on information provided by the Government of India. The India Port Modernization Study focused on India's five main ports of Bombay, Calcutta, Cochin, Haldia and Madras (Study Ports). The Study was undertaken by a team of four consultants which included Dr. Gustaaf De Monie (Team leader, Belgium), Dr. Brian Thomas (Port Operations expert, United Kingdom), Ir. J. Dekkers (Equipment Maintenance Expert, the Netherlands) and Mr. Odd Larssen (Port Economist, Norway). The team was assisted by Indian experts, including Mr. A. Ananthakrishnan (Port Management), G. Mampili (Port Operations) and K. Thiagarajan (Port Finances). The study was financed by the Trust Funds of Belgium, Denmark, the Netherlands, Norway and the United Kingdom. The consultants' findings were reviewed and completed by a Bank team led by Harald Hansen (Senior Transport Economist), and included Ananda Covindassamy (Financial Analyst) and J. Grosdidier de Matons (Transport Consultant). The Review of India Shipping Sector by Mr. Erik Heirung, from Wahl, Heirung and Partners, SA (Norway) conducted within the framework of the Public Expenditure Review, was also used for this work.
- (iii) Acknowledgments: This report was written by M. Jean Grosdidier de Matons (Consultant) and Mr. Harald Hansen (Task Manager, SA2IN), with input from Mr. Ananda Covindassamy. The report draws on the above mentioned Port Sector Modernization Study. Mme. E. A. Bozman edited the manuscript; Mme. D. Means helped prepare it.

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PORT SECTOR

STRATEGY REPORT

EXECUTIVE SUMMARY AND RECOMMENDATIONS¹

A. PRESENT SITUATION OF INDIAN PORTS

1. General - Port Traffic

(i) India has about 6,000 km of coastline serviced by 12 major ports² and some 139 intermediate/minor ports. Their throughput was some 179 million tons of cargo (1993/94), 95% of which was handled at the 12 major ports. Dry and liquid bulk make up 80% of port traffic in volume, with more valuable general cargo, including containerized, comprising 20% of the tonnage. Port traffic increased by almost 8% p.a. during the 1980s, 2% p.a. over 1990-1991 and 4.3% over 1992-1994. Containerized traffic grew at about three times the rate for all port traffic in the 1980s but more slowly afterwards because it is sensitive to import restrictions, and more expensive in some cases than break-bulk, given that the domestic transport system is not equipped to handle containers. It accounts for about 35% of all general cargo traffic versus 60% or more in most countries (paras 1 and 2).

2. Facilities and Equipment

(ii) The total capacity of Indian ports, based on actual productivity, was estimated at 167 million tons in 1992 (para 3). While water frontage is basically adequate, there is an acute shortage of back up land. This is compounded by problems of estate management which have frozen part of the real estate of the major ports. The standards of port facilities at the major ports varies widely. Jawaharlal Nehru Port Trust in Nhava Sheva (JNPT) and Madras have modern container facilities and equipment; JNPT also has modern bulk handling equipment. Other ports, such as those at Calcutta and Bombay have some outdated facilities, especially in terms of configuration and lay-out. In recent years major investments in port construction have centered on container as well as bulk facilities. Slow implementation of projects has made them costly. Converting general cargo berths in container berths will be necessary in the near future; in addition, ports have accumulated delayed maintenance and rehabilitation, even at modern facilities (paras 4 to 6).

(iii) Modern equipment exists for container handling but, generally, the equipment mix does not meet the present cargo handling needs of each port (para 7). Most of the existing quay cranes for general cargo are obsolete. Spare parts are in short supply, procurement takes a long time and maintenance systems are inadequate or obsolete. Availability of equipment, which has improved over recent years, reaches some 75% (para 8), which is still below international and regional standards. The organization of equipment maintenance needs to be improved, and there are not enough technicians trained to handle modern equipment (para 9), or applying the training that they received.

^{1/} Cross references are to the main text of Report.

^{2/} Bombay, Calcutta-Haldia, Cochin, Jawaharlal Nehru Port Trust (JNPT), Kandla, Madras, Mormugao, New Mangalore, Paradip, Tuticorin and Vishakapatnam.

(iv) Facilities and equipment for the protection of the environment have been developed in recent years, but Indian ports still suffer from many shortages in that respect and are also short of trained personnel.

3. Costs of Cargo Operations, Organization, and Productivity

(v) Ports in India are service ports. They each conduct with their own staff and equipment, all port operations: pilotage, towage and other marine services, cargo handling and on shore storage. Only stevedoring on board ships and the pick-up of cargo for delivery are in principle undertaken by private sector firms. However, the shortage of port equipment, and/or operational problems have encouraged private initiative in shore cargo handling and storage. Private firms operate their own mobile equipment in allocated storage areas in Bombay, and there are plans for more involvement of the private sector in container terminals, stuffing/destuffing stations, etc. (para 10).

(vi) Cargo handling at both conventional and unitized berths is fragmented, i.e. cargo is handled by several entities with different objectives, management structures and working practices. The planning and coordination of cargo handling activities are weakened by multiple management control, inadequate communication and duplication of operational and administrative activities. There is little pre-arrival planning and work scheduling, partly because consignments are fragmented and relevant documentation and information from shipowners or shippers are received late. This contributes to poor utilization of resources and to delays to operations. Coordination between the staff in the Traffic Department of the ports, stevedoring companies, Customs authorities and transport operators needs improving. In many ports the working times of different organizations, and even of different departments within the Port Trusts, are not synchronized and valuable operational time is lost. Other improvements would be urgently necessary in equipment acquisition and allocation procedures, allocation of storage space; the recording of information; vehicle appointment schemes; and labor deployment practices (para 11).

(vii) Port productivity (paras 12 to 17) depends largely on the performance of the port authority³ in its own operations and in coordinating the operations of others, e.g. stevedores, truckers, consignees of cargo, railways, etc. Over the last five years, and specially from 1991 to 1992, port productivity at major ports, in terms of ship time at berth, turn-around time and average output per ship berth-day, improved by some 30%, which reflects well on the efforts of management. However, in 1992, even the modern container facilities at JNPT and Madras handled less than ten containers per hour (of vessel at berth), which is half the productivity of equivalent ports of the region. In 1994, given the reported improvements in productivity, the output may have been 11 to 12 containers per hour. Bangkok and Colombo handle 30 containers per hour and Singapore more than 40, but the comparison is not entirely valid since these are large main line ports, which are better equipped. The output per gang shift is low even in relation to the norms set in 1983 by the Government of India (GOI) and these norms are low by international standards. The manning scales evolved three decades ago have not changed.

^{3/} The term *port authority* is used here in its generic meaning of "any entity, public or private, designated by statute to create, operate and/or manage a port". The large port authorities in India are designated as Trust Ports (see para x of this Executive Summary).

(viii) The inadequate productivity levels should not be attributed only to port management and labor: the whole transportation and logistics system is in question. Shippers do not unitize their cargo; consignments and parcel sizes are small,⁴ making palettization uneconomical; small also are many vehicles loading cargo from shipboard for land delivery. Cargo is not pre-slung as neo-bulk and cargo consignees do not keep clearing their cargo rapidly causing congestion in sheds. There is also a shortage of fork lift trucks, and, lastly, ingrained habits and methods of cargo handling, which are slow to change. Since Port Trusts do not control the whole of the transport chain, they cannot be blamed for all inadequacies, but it is especially important to improve productivity in areas which they do control. There have been developments in that respect in 1994, as a result of joint efforts by the MOST and the Port Trusts. Specially, a Memorandum of Understanding was signed with the All India Labour Federation which provides for a significant yearly increase in cargo handling productivity.

(ix) The insufficient productivity of Indian ports has resulted in, but is not the sole cause of, increased costs in both throughport and sea transport costs (paras 20 to 33).

(a) A comparison of throughport costs i.e., the total cost of delivery of a containerized or breakbulk consignment, including stevedoring, shore handling, storage, customs clearance, etc., between four major ports (Bombay, Calcutta, JNPT and Madras) and Bangkok, Colombo and Singapore shows that these costs are 45% to 50% higher for containerized cargo in the Indian ports. Haldia, only, has lower throughport costs. The structure of costs varies widely from one port to another. Port authorities themselves do not automatically reap benefits, which are widely distributed between operators. Specially, customs agent fees and transport and handling charges are higher in Indian ports. The latter represent up to 38% of total through-costs of containers. Miscellaneous expenses, which include the direct payments to individuals for speeding operations, make up from 9% to 38% of total through cost. These throughport costs, which are estimated at \$US 70 million per year, are at the detriment of Indian imports and exports. In terms of throughport costs for breakbulk traffic, Indian ports appear to be more competitive with neighboring foreign ports. However, neighboring ports tend to discourage this type of traffic and future growth into a modern economy requires improved productivity in containerization, including door-to-door deliveries.

(b) The sea transport costs, that is costs of a vessel's waiting and working time, are much higher in the case of India than in other countries. Because of lower productivity vessels spend more time in these ports, per ton loaded and unloaded, then they have to spend elsewhere. These ship costs are higher than the throughport costs and are reflected in freight rates which make them a major burden to the Indian economy. Even a moderate reduction of ship time at berth, in line with international output standards, would allow a potential saving to ships of Rs. 300 crores (\$100 million) per year based on 1990-91 traffic volumes. The difference in port performance, and in cargo handling methods, has resulted in Indian ports being served mainly by relatively small vessels (1000 TEUs) via Colombo and Singapore rather than by larger and more cost efficient vessels. While it is likely that the largest container vessels will not call in Indian ports because India is off the major routes of world sea trade (on which Singapore and Colombo are well located), if all the containers handled at Bombay and JNPT alone had been loaded and discharged

^{4/} However, a survey of breakbulk cargo in Indian and in other ports of the region shows no major difference in consignment sizes between Indian and foreign ports. See para 20 below.

from and to deep water vessels, potential savings would have been on the order of US\$250 million equivalent annually, and it would have placed these ports and their customers ten days closer to their markets. It is significant that many exporters use more expensive air freight because of unacceptable shipping (and land transport) delays.

(c) Furthermore, increased productivity at existing facilities would also defer the need for major new investments in infrastructure.

(d) The major and real costs which result from slow and unreliable service are in lack of export opportunities due to the slowness and unreliability of operations. These are not yet quantified.

4. Institutional Set-up

(x) The major Indian ports are organized as Port Trusts, i.e. semi-autonomous statutory entities with a non-profit objective, under parliamentary legislation (para 35). The Port Trusts have authority to manage and operate the ports. They are administered by boards of trustees appointed for two year terms by the Government of India (GOI), although it is understood that in late 1994 two chairmen had been promoted from the port professional ranks. Board members are selected from government departments, port labor and industry. The Chairman of a Trust is also its chief executive officer and frequently comes from the Indian Administrative Service Cadre (IAS). In addition, he usually chairs the local Dock Labour Board (DLB). Labor relations are a major issue and absorb considerable time and energy of the chairmen and executives in the Port Trusts (paras 11 and 51).

(xi) The 1963 Port Trusts Act, which governs the ports, is detailed and comprehensive. On the one side, managers of port trusts seem to be reluctant to exercise the powers vested in them by the Act. On the other, implementation by GOI is claimed to be equally restrictive. Supervision of the Port Trusts is generally strict with many instructions, orders, approvals, etc. with low thresholds for awards of contract without GOI approval (5.0 crores since 1991). Little trust seems to exist between the port authorities and their supervisory ministry, where it is claimed that the lack of delegation from MOST originates in the poor management of the port authorities themselves, which caused their powers to be taken from them. Delegation of powers either inside or outside the ports is limited. Although the Port Trusts have extensive commercial activities in cargo handling and storage, they are considered as branches of government rather than as competitive service industries. Planning is centralized in Government; the process is slow; and the planning capacity of individual ports is inadequate. Still, monitoring does not appear successful and there are reciprocal complaints in GOI and in the Port Trusts on port performance and on government supervision. Efforts are being made to improve the situation. A Committee has been constituted in MOST to examine the areas where more jurisdiction could be delegated to the port trusts, specially as regard planning and investments (paras 38 - 47).

5. Staffing (paras 48 - 56)

(xii) Total establishment of the Port Trusts and of DLB is 126,000 employees and workers, plus up to 40,000 unregistered workers, which is very high by any standard. Until 1994, attrition was slow (1% annually). Staff at management level are competent and devoted, anxious to modernize, but also somewhat cautious regarding change. They work under compelling conditions, especially with regard to labor relations and supervision from GOI. They would benefit greatly from more training and international exposure. Since the chairmen of the Port Trusts are generally selected from the IAS, there are few prospects for promotion of regular port managers to the top. Dock labor is known for being hostile

to reforms which would increase their productivity and eliminate their numerous restrictive practices. They have, for example, successfully resisted changes in minimum levels for piece work in cargo handling. Through side payments of speed money, they have secured lucrative positions. The substantial and increasing losses caused by the present labor organization are documented. Significant savings could therefore accrue to the economy if labor productivity were higher. With the development of mechanization, attrition policies and retraining of surplus dock workers should have started more than twenty years ago. However, strong labor unions, the directions given by GOI, the absence of a sense of fiscal responsibility, a captive (or apparently captive) market of port users, probably have been the principal causes of excessive caution of port management and the port industry. This has led to an impasse. The Indian economy suffers from overstaffed and under-performing port systems, and workers are now justifiably alarmed by the prospects of a massive attrition. There are, however, signs of change. Ports have been instructed not to fill all their vacant positions and a voluntary retirement scheme has been put in action, resulting in significant (9000 workers and employees over two years) decline in staffing.

6. Private Sector (paras 57 - 64)

(xiii) Indian Port Trusts were originally established in some defiance of the private sector because of the early monopolistic position of some private colonial companies. As noted in para (v), some private sector activity has developed beyond stevedoring, in shore cargo handling and transport, but there is little interaction between the private sector and the Port Trusts. This has had negative consequences: absence of competition between operators of similar activities, inadequate labor discipline and productivity in a public enterprise environment, lack of sense of responsibility to the users, overburdening of Port Trusts finances with the cost of large investments, some of which could have been financed by users, and sizeable losses for GOI from foregone taxes (since Port Trusts do not pay taxes on their commercial activities). The development of private sector intervention in containerization, through licensing, build-operate-transfer or other schemes would have a positive impact on institutions. Port staff would devote more time and activity to planning, monitoring and administering for the public interest, rather than in direct operations and the public purse would be relieved. Ports would act as landlord ports rather than as service ports. A definitive evolution is taking place. It is the GOI's position that the economic reforms initiated in recent years, which involve a much greater private sector participation to development, are irreversible. All ports have identified facilities to be leased out to private parties. The stated policy⁵ is that (i) the MOST takes the lead in developing a receptive atmosphere for the privatization of key port facilities; (ii) rules and regulations are being relaxed, systems upgraded, and procedures simplified; (iii) charges to be levied for services that are to be provided by the private operators would need to be within limits determined by Government; (iv) existing labour laws will apply; and (v) there will be no standard model, privatization depending largely of the requirements of each specific mode or sub-sector. A number of licenses have been granted and leases contracted, and there are plans for more development. But it remains that tender documents for the contracting out of operations at JNPT, which the Bank reviewed, have been prepared in late 1993 and that, over the last year, no decision has been taken for their issuing to national or international competition. The issuance of these documents on an open and transparent basis and the start of the procurement process would send an important signal to the port and shipping community as to the firmness of the declared policy of Government.

⁵/ See *Chartering a New Course*, Ministry of Surface Transport, 1994 *booklet for the use of private sector investors).

7. Finance (paras 65 - 85)

(xiv) The Trusts have their own budgets, and can raise dues and incur debt subject to government approval. Their financial situation is mixed. They generally have cash reserves and some of them derive substantial resources from financial investments, through a system of sinking funds and depreciation funds. Their rates of return vary greatly (from 2.3% to 25.9% for the four main ports). This has no great significance: depreciation is on historical costs, assets are not revalued, the ports are generally undercapitalized, many facilities are obsolete and dilapidated, a loss of substance that balance sheets do not reflect. Calcutta needs a yearly subsidy to finance its dredging and the JNPT Port Trust cannot service its debt in the long-run unless its finances are restructured. Since ports do not pay taxes to GOI, even on their commercial activities such as cargo handling and storage, and since they do at least in part draw on GOI funding for new investments, they have a negative impact on public finance, although less than in a number of other countries, where ports are heavily subsidized. Accounting systems are not up to international standards and current tariffs are not based on clearly defined costs nor structured to encourage efficient use of resources.

B. STRATEGY AND RECOMMENDATIONS

1. Diagnosis

(xv) The overall diagnosis is that the use of resources in ports is at present sub-optimal. Despite improvements of productivity in recent years and the efforts of port management and the GOI, ports do not satisfy the needs of external trade and do not participate enough to a much needed modernization and technological change of the transport sector. They have tended to be considered large social welfare organizations rather than economic services organizations (para 87).

(xvi) To meet the changing economic environment in India with increased emphasis on exports and the extensive containerization of the international sea trade, India now needs a more economically oriented and competitive port management, with increased private sector participation, for better efficiency and financing. Attrition of an excessively numerous labor force raises major issues and will take time, but supervisory staff at ports and in the Government increasingly recognize the need to modernize. An adequate balance needs to be established between the necessary autonomy of ports, their accountability to the public and to users and the exercise of the monitoring and supervisory powers of government. The ports and those who have to manage them deserve a better institutional set-up and implementation arrangements to operate than at present, for which the following principles of reform and specific recommendations are formulated (paras 87 - 102).

2. Strategy of Reform

(xvii) As service ports, Indian ports perform many of their own service tasks, especially cargo handling and storage, in a system of common user berths. They are currently working at nearly full capacity, based on an inadequate level of productivity. Building new facilities would be more expensive than would increasing productivity. Not only will the financial cost be high, but also confronted with low productivity, shipowners will continue to ship cargo to India at higher costs. Thus, diffuse economic losses due to poor productivity will continue to permeate the economy. The choice is between new facilities, at a high cost, or increases in productivity.

(xviii) In line with GOI's economic reforms, the strategy should be to increase the productivity of the existing facilities through commercialization and competition. This strategy would involve:

- (a) more autonomy and accountability for the Port Trusts;
- (b) reorganizing the ports within a system of integrated terminals;
- (c) increasing private sector participation in both operations and investments;
- (d) improving Port Trust financial management; and
- (e) selected investments to modernize and redesign outdated facilities and in replacing outdated equipment.

3. Recommendations

(xix) The recommendations are broadly summarized here under each element of the strategy. Detailed recommendations are in para 91 to 101. Recommendations take due account of the changes that the GOI, MOST and the trust ports have introduced since 1993.

A. Increasing Autonomy and Responsibility/Accountability for Indian Ports

(xx) This is dealt with at the three levels of relations between GOI and the port trusts, staffing policies, and management by objectives.

(xxi) Relations between GOI and Indian Port Trusts (para 94). At all levels of port management, among port users and even in GOI, the consensus is that the system of port monitoring of the Port Trusts by GOI is not effective, due to lack of clear objectives, to the administrative culture, partly to the lack of delegation from the supervisory ministries in New Delhi and to the fact that ports are not always making use of their present powers. Controls and approvals on Port Trusts and inside their management structure are repetitive thus causing delays in maintenance and project execution, and slowing the whole decision making process, which in turn causes increased costs and hampers development. At lower management levels minor decisions are frequently referred to the top. It is therefore recommended:

- (a) to establish boards of management in the Port Trusts to relieve the Chairman of day-to-day management tasks and/or organize systematic delegation of powers inside the Trust.
- (b) to benefit from the appointment of a Committee in MOST to review the whole system of approvals of Port Trusts Board decisions by GOI and identify; (a) decisions by the Trusts' board which are immediately implemented; (b) decisions implemented on a non-objection basis; and (c) decisions requiring formal approval;
- (c) to use the approved budget as the basic document for management decision making: after budget approval by GOI, no further authorization should be needed for borrowing and appropriations;

(d) to increase the threshold of contracts to be awarded by Port Trusts without compulsory approval by GOI; and

(e) to reorient the monitoring of port activities and planning at ministerial level towards policy orientation rather than towards detailed control.

(f) to examine whether the establishment of a port advisory committee of professionals and users would be a viable proposition.

(xxii) New Personnel Policies (para 99). Nothing can be achieved without adequate staff. The upgrading of port administration and improvement of quality of port staff as well as responsible staff at GOI level, need to be conducted in parallel with other reforms. The new type of ports which will emerge from the reforms will necessitate new talents and professionalism at all levels. Changes in attitudes are also required. This could be encouraged by more contacts with the international port community through training, seminars, visits, etc. It is recommended that a national port cadre be established, giving access to all positions in port management including that of Chairman of Port Trusts.

(xxiii) Pay scales, productivity norms, labor categories of dock labor, and gang sizes all need to be reviewed on a mutual basis, together with the number of laborers being employed (para. 99).

(xxiv) Port Trusts Objectives (paras 94 - 98). Neither the Port Trusts Act nor subsequent legislation assign clear objectives to ports. Basically, they are supposed to accommodate the needs of traffic, i. e., satisfy demand. The conditions of such satisfaction, however, are not formulated in any terms; not for productivity, economic optimum for the transport chain, the national economy, users' satisfaction or financial return. Port management has no permanent guidelines on which it can base its decisions and establish its own internal objectives. It is therefore recommended that ports be assigned long term strategic (permanent) and short-term (variable) objectives:

(a) The *strategic long-term objectives* would be embedded in a modified Ports Act. They should reflect the basic port policy of government with regard to port jurisdiction, private sector involvement, economics (maximizing economic surplus for the transport system), finance (self sustainability), and GOI supervision (graduation in levels of approval and decentralization of the decision making process).

(b) The *short-term operational objectives* would be defined in a less formal legal instrument, such as an agreement between GOI and each port trust, or in a letter of instructions from GOI. They would be set for a given period, e.g., Plan period, or two years, in a quantified form. A system of monitoring objectives should be established. Government has made a first step in that direction with recently issued *Memorandum of Understanding* issued to each port.

B. Reorganization of Port Operations (para 100)

(xxv) It is recommended that the distinction between stevedoring and shore handling be eliminated; wharves be operated as integrated terminals; the same operator to be responsible for stevedoring on board ships, cargo handling on shore, storage and delivery in and outside sheds with the operator having direct control of staff and work-force.

C. Development of Private Sector Participation (para 101)

(xxvi) This recommendation derives from the preceding recommendation to develop integrated terminals.

(a) It is recommended that ports should become landlord ports leasing facilities to private sector operators through a system of concessions on an open and transparent basis. While the common user berth of the past, where ship operations are independent from shore operations, was well adapted to a division of operations between on board stevedores and shore handling by the Port Trusts, the new integrated container terminal lends itself better to a sole operator and therefore to licensing to private parties. The risk of private sector intervention creating monopolies and cartels can be dealt with through adequate licensing arrangements. Port Trusts will therefore act less as direct operators of their facilities and more as regulators of private activity in ports; and

(b) It is further recommended that public investment should be limited and port users should participate more in the costs and risks of financing port facilities and equipment. This is complementary to the recommendation in (i) above. The strategy would result in (a) increased productivity; and (b) a lesser burden on Port Trust finance.

D. Improvement of Port Trusts Financial Management (para 102)

(xxvii) Based on the assessment quoted (para xi), it is recommended that financial objectives for ports be formulated and monitored in terms of: (i) accounting systems and procedures; (ii) financial ratios; (iii) debt service; (iv) tariff structure; and (v) taxation. It is also recommended JNPT be recapitalized.

E. Strengthening of Planning and Undertaking of Selective Investments (para 98)

(xxviii) Port planning needs to be modernized and sped up with greater freedom to ports within approved budgets, strengthening of the planning capacity at the level of individual ports and at MOST. Priority should be given to maintenance and rehabilitation as well as investments aimed at modernizing existing facilities and equipment and increasing their productivity and capacity. The above would be particularly relevant for general cargo facilities with special emphasis on container facilities. Specialized bulk facilities, particularly new facilities, should for the most part be constructed or paid for by the users, either directly or through long term contracts.



I. OPERATIONAL AND ECONOMIC FRAMEWORK

A. Port Traffic

1. General. India has about 6000 km of coast line serviced by 11 major ports (Bombay, Calcutta-Haldia, Cochin, Jawaharlal Nehru Port Trust (JNPT), Kandla, Madras, Mormugao, New Mangalore, Paradip, Tuticorin and Vishakapatnam) and 139 minor or intermediate ports. In 1993/1994⁶ total port throughput was 193 million tons, of which some 179 (166 in FY 1992/1993) million tons of cargo, or 92% were handled by the 11 major ports (Table A). The five main ports of Bombay, Calcutta, Cochin, JNPT and Madras are the most important. For that reason these five were selected for a detailed study which was conducted by consultants in 1991/1992 as the India Port Modernization Study (see Preface). These five main ports accounted for 50% of the total traffic handled by the major ports, for more than 60% of breakbulk general cargo and for 90% of India's containerized traffic. Traffic growth at the major ports was about 8% p.a. during the 1980s and only 2% to 3% from 1989 to 1992 when imports were restrained. Clearly, the recent liberalization measures had a positive impact on traffic growth: container traffic increased by 34% from 1993 to 1994. The VIIIth Five-Year-Plan (1992-1997) projects a growth of about 9% p.a. for all port traffic.

Table A

INDIA: 1993/1994 TRAFFIC AT 11 MAJOR PORTS (million t)

	<u>Unloaded</u>	<u>Loaded</u>	<u>TOTAL</u>
<u>Main ports or Study Ports</u>			
Bombay	17.2	13.5	30.7
Calcutta-Haldia	12.2	6.3	18.5
JNPT	2.1	1.3	3.4
Madras	17.8	8.7	26.4
Cochin	6.3	1.3	7.6
TOTAL	55.6	31.1	86.7
<u>Other Major Ports</u>			
Others	47.1	45.5	92.6
TOTAL	102.7	76.6	179.3

Source: Indian Ports Association, 1994.

^{6/} Indian port statistics are kept on a fiscal year (FY) basis (July to June).

2. Types of Traffic. Liquid and dry bulk cargoes, generated by a limited number of government controlled industries, accounted for 43% and 40% of total tonnage (Table B).

Table B

**INDIA: 1993/1994 COMMODITIES TRAFFIC AT 11 MAJOR PORTS
(million t)**

	<u>TONNAGE</u>
Oil	76.9
Iron ore	34.1
Fertilizers	7.4
Coal	26.6
 <u>General Cargo:</u>	
Containers	12.2
Break-bulk	22.1
 TOTAL	 179.3

Source: Indian Ports Association,
1994.

General cargo represented 19% of total traffic, with containerized cargo steadily increasing its share (14% in 1991/1992). It is now 36% of all general cargoes, i.e., 1,052,000 twenty foot equivalent units (TEU) per annum. These figures remain below those of other ports in Asia and the Pacific. For example, in 1991/1992, general cargo was containerized at 55% in Colombo (Sri Lanka), 47% in Kao Shiung (Taiwan), 78% in Brisbane (Australia), 70% in Kelang (Malaysia) and 75% in Freemantle (Australia). The share of inland movement of containers is less than 15% of international container traffic, indicating that most containerized cargo originates from or is bound to industries and trade located in port cities and that India's transport system and practice is still insufficiently-adapted to containerization.

B. Port Facilities

3. General. Most major ports in India have dedicated bulk terminals but the majority are conventional general cargo berths which handle breakbulk, unitized and containerized cargoes in addition to residual bulk cargoes. Purpose-built container terminals exist only in Cochin, JNPT and Madras (1993). Bombay, Calcutta-Haldia handle containers on conventional berths or on dedicated berths, but their lay-out and configuration do not permit large scale container operations. Based on current low productivity standards, the capacity of Indian ports was estimated at 173 m tons on March 31, 1994. Development in progress would increase capacity to 215 m tons by 1997, of which 34.2 m tons would be for breakbulk general cargo and 9.00 m tons for containers. Compared to breakbulk and container

traffic in 1994 reported in Table B (22.1 m tons and 12.2 m tons respectively), there is little doubt that converting general cargo berths in container berths will be necessary.

4. Condition of Facilities. The lay-out of many berths, especially breakbulk ones are of old design and are outdated. Draughts at these berths are insufficient, aprons are narrow, they offer only restricted maneuverability of equipment and have limited storage areas. They have deteriorated and are operationally unsuitable for modern cargo handling contributing to increased transport costs (para 22). JNPT and, to a lesser extent, Cochin and Madras are exceptions. Civil works are in poor condition because of insufficient maintenance and delayed rehabilitation. Berths suffer from corrosion, many sheds show fissured walls and leaking roofs, drainage is inadequate and operating surfaces as well as access roads require urgent repair. The lack of proper maintenance of civil works not only concerns older facilities, but also affects more recently constructed port installations (e.g. berths in Haldia, surfacing and roads in JNPT). While funds for maintenance appear sufficient, delays in planning must have been too long, contracting and the release of funds too slow and, probably, the importance of regular preventive maintenance was underestimated.

5. Port Estates. The major ports own large amounts of land in the dock estate and surrounding urban areas, but they are surrounded by cities and are generally short of land suitable for port operations. This shortage of port land is also the result of the use of port land for non-port related activities. It is impossible for the Port Trusts to legally terminate the present leases or even to stop unlawful occupation of land (para 43). This restricts availability of additional back-up land for modern cargo-handling operations and upgrades to the internal road and rail network. The lack of space slows port operations and makes them less efficient. A number of activities (container freight stations, empty container pools, etc.) need to be located outside the port area, necessitating additional investments, aggravating urban traffic congestion and imposing considerable additional expenses on both shippers and receivers.

6. Dredging. In 1989/90, Indian ports required 62 million cubic meters of maintenance dredging, of which 56 million were for the 12 major ports. In 1989, the Working Group for the port sector for the preparation of the Five-Year Plan found that dredging output had been effectively satisfying only about 70% of requirements and that the ports had been facing an unusual increase in siltation in the past five years. This reduced the available draft, contributed to pre-berthing delays and necessitated the use of less economical vessels. There were not enough operational dredges of the right type and capacity available. In addition, the use of equipment, their maintenance and the organization of the work need considerable improvement, rather than the purchase of new equipment, which may be considered as the solution to the problem. Many ports want the maintenance dredging to be done right at the close of the monsoon season, which makes planning and timing of dredging work difficult. Most ports arrange for dredging with their own equipment inside the port basins and along the berths. Capital dredging is usually contracted out; particularly to the public sector Dredging Corporation of India (DCI). It appears to have benefitted from a virtual monopoly on maintenance dredging, often based on negotiations rather than on tenders. However, it is understood that competitive tenders are increasingly used for larger contracts. Contracting maintenance dredging for several years based on tenders, possibly covering more than one port, might be considered as a way of increasing competition in this field. Individual ports finance their maintenance dredging, except in Calcutta-Haldia. There cost of channel dredging is as much as 13% of total operating expenditure of the port and the Government finances it. The Major Ports Reforms Committee, which met in 1985 proposed to consider dredging expenditure as a national obligation to be financed by the Central Exchequer. The proposal was not adopted. If implemented it would perpetuate assistance to ports which from an economic point of view is not desirable.

C. Port Equipment

7. Composition and Condition. The present equipment mix (wharf and mobile cranes, forklift trucks, tractors and trailers) and equipment specifications do not meet current cargo handling needs. These needs include higher capacity, capability to handle a greater variety of cargo classes and in particular more unitized and containerized cargoes. Specialized handling attachments for cranes and forklift trucks to handle specialized cargoes (hook gear, container spreaders, clamps for bales, cartons, drums) are either not available or are in short supply. The equipment for handling general cargo in conventional form is in most cases outdated, past projected use-life and in general does not meet user demands. In the case of the study ports most of the general cargo handling equipment is not only beyond its useful life but also largely beyond repair even if not already cannibalized. For example at Bombay's Indira Dock some 85% of the electrical wharf cranes are of 1955/65 vintage; two-thirds have a capacity of only 3 tons; and only 4% of all cranes have a capacity of more than 6 tons. As a result, they are under-utilized: while they are available 85 to 90% of the time, their utilization rate is only 20 to 24%. Most conventional cargo handling equipment would be obsolete if the criteria set by the Indian Ports Association (IPA) and the Bombay and Madras Port Trusts were effectively applied. In some cases, users provide supplementary handling equipment.

8. Availability. Availability of equipment, which had been improving, the average availability being 76% in 1991/1992, seems to have reached a plateau, as availability was 78% in 1993 and 76% in 1994. This compares with common norms of 85% - 90% throughout Asian ports generally. Container handling equipment is available at 85% - 95% for ship-to-shore gantry cranes and approximately 85% for rubber tired gantry cranes, which is good. But, as noted above, there are considerable gaps between availability rates and utilization rates, reflecting the obsolescence of equipment. The low availability of floating craft delays ship berthing and further, floating crafts are also generally beyond projected use-life; frequently 25-30 years old. In Bombay, Calcutta and Madras the average downtime of craft, including annual lay-up and repairs, are respectively 6, 7 and 4 months as compared with a normal duration of about 1 month. Indian ports have, in general, limited maintenance capability, either in terms of facilities, equipment, or technical staff. Wrong specifications of the equipment, inappropriate working environment and the marked increase in the use of equipment from outside contractors are the main causes for reduced capacity for maximum utilization of equipment and efficiency of cargo handling

9. Maintenance. Equipment maintenance is the responsibility of the Mechanical Engineering Departments (MED) at the ports, which employ large numbers of staff. Most divisions in MEDs are overstaffed except those for modern specialties, such as in electronics and hydraulics. The majority of the workshops are very old and untidy with inadequate lay-outs and dimensions. Most of them are not suited for carrying out indoor maintenance of large mobile equipment. The ports also have very different maintenance policies. Madras concentrates on preventive maintenance while Bombay and Calcutta rely on break-down maintenance. Contracting for maintenance is unusual and limited to service contracts for specialized equipment, although in ports such as Bombay and Calcutta sub-contracting part of the maintenance function could be an attractive proposition.

D. Port Operations and Performance

10. General. The major ports are service ports. As such they are responsible for pilotage, towage and mooring of ships, as well as shore handling, storage and warehousing of cargo. Private stevedores generally conduct ship-board cargo operations. In most ports, however, private contractors have been

admitted to perform the quay transfer operations and many provide their own equipment and labor. Often these contractors are subsidiary companies of the private stevedores or ships' agents. This situation occurs particularly in the containerized trade.

11. Cargo handling at both conventional and unitized berths is fragmented, i.e. cargo is handled by several organizations with different objectives, management structures and working practices. The planning and coordination of cargo handling activities is weakened by multiple management control, inadequate communication and duplication of operational and administrative activities. This fragmentation of operations is a major issue which needs to be addressed. There is currently a lack of coordination between the staff in the Traffic Department of the Port Trusts, stevedoring companies, Customs authorities and transport operators. In many ports the working times of different organizations, and even different departments within the Port Trusts, are not synchronized and valuable operational time is lost. Equipment requisition and allocation procedures are poorly developed and implemented; allocation of storage space and the recording of information are often inadequate; there are no vehicle appointment schemes; and labor deployment practices are poor. Inter-departmental communication also seems to be poor and there appears to be a lack of cooperation - possibly even suspicion - between management and staff of the different departments. Labor and staff rotate daily between different work areas of the port. A consequence of this is that staff do not concern themselves with the next day's operations or take a long-term view of cargo handling operations. Cargo is indiscriminately placed in storage areas, space is poorly utilized and more care and attention should be given to the cargoes in storage. These practices also result in supervisory staff being unable to exercise effective authority and control over labor.

12. Performance Standards. Port productivity, in terms of ship turn-around-time, waiting time and average ship berth-day output has slowly improved over the last decade (Table C). At first sight, Table C would seem to indicate that productivity has reached a plateau in 1994. In fact, productivity increased in Bombay, Calcutta/Haldia, Cochin and Kandla, while it collapsed in Madras, which strongly distorts the 1993/1994 average.

Table C

INDIA: SELECTED PORT PERFORMANCE INDICATORS
AT 11 MAJOR PORTS

	<u>1984/85</u>	<u>1988/89</u>	<u>1991/92</u>	<u>1993/94</u>
Average pre-berthing time (days)	3.6	2.8	1.4	1.8
Average turnaround time (days)	11.9	8.9	6.5	6.9
Output per ship berth/day (t, all ships and types of cargoes)	2314	3549	4668	3963
Output per ship berth/day (t, containers)	n.a.	1310	1430	1571
Output per ship-berth/day (t, breakbulk general cargo)	39	40	42.3	42.8
Idle time at berth to total time at berth (%)		600	623	660
	39	40	42.3	42.8

Source: Indian Ports Association, 1992 and 1994

Recent steady improvement in productivity reflect port management and operators efforts. Still, based on port productivity indicators, such as ship turn-around time, pre-berthing, operational delays, output by ship/day, gang/shift output, berth occupancy and dwell times, the performance of the selected Indian ports is still modest when compared with generally accepted international standards and the performance of other regional ports. This has discouraged most shipping lines from contemplating direct container services. Feeding from neighboring countries' ports is preferred even though the Indian traffic volumes may warrant direct calls by main-line vessels. Details follow, based on 1992 figures published by the Indian Ports Association. The range of values shows considerable differences in productivity from one port to another.

13. Ship Working Time. The high percentage of non-working time per vessel is one important factor in the still modest performance of Indian ports. In 1993/1994 and for the five major ports, the ship non-working time for breakbulk and container vessels, was 41% on average, when 10% - 20% would have been an optimal figure. In the best case it was 19.8% for break-bulk and 16.5% for container ships. In the worst case, it reached 58% for break-bulk and 59% for container ships. Pre-berthing delays attributable to port account, which should be as short as possible, accounted for some 21% of the turnaround time. These ranged from 0.2 to 2.4 days for container vessels and from 0.9 to 4.3 days for general cargo vessels. They have increased in 1993/1994 over 1991/1992, confirming that, despite the productivity increases registered in cargo handling performance, Indian ports are at present unable to cope with sizeable increases in traffic.

14. General Cargo Performance. For the Study Ports, in 1994, the general cargo (break bulk) performance, in terms of tonnage of cargo loaded and discharged per vessel day at berth (output per berth day) ranged from 434 t at Cochin (370 in 1992), 448 t at Calcutta (380 in 1992), 685 tons at Bombay (480 in 1992) to 735 t at Haldia. The average over 1993/1994 is 737 t, and 823 t in 1994. That is a good performance which, if maintained, would place the average of Indian ports at the same level as Colombo in 1992 (800 ton/day) but far from Singapore with 2000 t.

15. Container Handling Performance. The difference in performance is more marked in this area than for breakbulk cargo. In 1990/1991, the study ports without special container terminals handled only 5.9 containers per vessel hour at berth, increasing to 6.8, 8.5 and 10 containers per vessel hour, respectively, for the three ports with special container facilities (Haldia, Madras and JNPT). However, even the most modern and expensive container terminal at JNPT only reached 10 containers per hour in 1991/92, up from 9.3 in the preceding year. Similar figures are not available for 1993/1994, but the 10% increase in output per ship/day registered in 1993/1994 over 1992/1993, indicates improvements in productivity. This still compares with 30 and 40 per hour at the two container terminals at Colombo, 38 at Bangkok and up to 69 in Singapore, which is recognized as one of the leading container ports of the world. In the case of JNPT, some of the modest performance is no doubt accounted for by the lack of sufficient equipment. JNPT has three gantry cranes for three berths, which is globally sufficient but insufficient when all berths are operating at the same time. There is evidence of productivity improvement at JNPT compared to the 9.5 containers handled per crane hour which was the performance in 1991/92. JNPT reported in 1994 that cases of 15 to 18 containers per hour or more, but information is lacking on the percentage and distribution of ships that benefitted from that performance. In 1991, other ports of the region such as Colombo handled 15 and 20 containers per hour, Bangkok 20 and Penang 22 (Table D). The different sources of information available in 1991/1992 on the matter all concurred that the average values of productivity in other ports were 80% - 100% above those recorded on specialized container terminals in India. In most Indian ports, the container handling output is still lower because a substantial proportion of the containers are handled at conventional berths, where output rates are typically between

5 and 8 gross moves per hour. As a result, there are large differences in container productivity from one port to another. The range for the study ports was from 1,340 tons/day (some 112 TEU) to 2,530 tons (210 TEU) in JNPT in 1991. It is reported by the Indian Ports Association to have been 1,066 tons/day (some 88 containers) to 2,890 (240 TEU) in 1994. At the lowest point of the range, container productivity is at the level of breakbulk productivity in a port of average performances; at the highest point, there is marked improvement, but productivity is still a way from what it should be.

Table D

**CONTAINER HANDLING PERFORMANCE
SELECTED INDIAN AND ASIAN PORTS
(1991)**

<u>PORT</u>	<u>Container per ship/h</u>	<u>per crane/h</u>
Bombay	5.9	
Calcutta	5.9	
Haldia	6.8	
Madras	8.5	
JNPT	10	9.5
Bangkok	38	20
Colombo	30/40	15/20
Singapore	69	25
Penang	22	
Busan	23	
Tanjunk Priok	18	

Source: Consultants (1991).

16. Potential for further Improvement in Productivity. The potential for increasing output performance and handling capacity through the introduction of improved handling techniques varies by cargo type. The objective for dedicated container handling facilities in Cochin, Madras and to an certain extent in Bombay and Haldia, should be that they perform in accordance with their technical design. Present management systems, organization structure and labor practices have been inherited from the conventional berths. New operational procedures and practices need to be developed regarding pre-arrival planning, container movements, stacking of containers, supervision, plus simplified documentation and communications/information systems. All this needs to be integrated into the terminal concept in line with the requirements of new technology. Institutional reform is needed, supported by profound changes in management organization and style. This issue is developed in Chapter II on institutional framework.

17. The adoption of more modern packing and handling technologies is necessary for non-containerized and neo-bulk cargo. Most of these cargoes are presently handled in loose form, with labor-intensive practices, at conventional berths, which suffer from inherent limitations (para 4). There is little dock palletization or pre-sling of cargo. Indian shippers still do not unitize their cargo because premises are unsuitable for that purpose, consignments are small, appropriate transport is not available, and there are no tariff incentives. Multi-unitization is almost unknown and virtually never applied. Containerization

meets many obstacles, including: (a) imbalance between imports and exports of general cargo, which makes container repositioning expensive; (b) high port through-costs for import containers (see para 20); (c) unfavorable container transport regulations; (d) restrictive Customs regulations; and, above all, (e) labor union resistance, which plagues Indian ports, as demonstrated by the low productivity parameters on which piece work pay rates of dock labor are based (para. 52), and by the ups and downs of cargo handling productivity in correlation with social peace or unrest in the docks. It is significant that, in 1993/1994, all agencies participating to port operations succeeded in reducing by 35% their man/days lost due to stoppage of work, the number of man/days lost due to stoppages by port unions and workers increased 250%. However, a Memorandum of Understanding was signed with All India Labour Federation in end July 1994 which provides for an annual increase of 7% in all productivity parameters. Gang shift output, turn round time, idle time at berth, etc. should therefore improve by as much over future years (para. 56).

18. Surface Transport. No figure is available concerning the distribution of future container traffic between railways and roads. It is clear, however, that most of the long distance movement of containers in the export and import trade is by rail, particularly in the Delhi-Bombay /JNPT and Delhi-Madras corridors. It is known that land transport capacity is currently insufficient. On one hand, railways concentrate on transport of bulk cargo and do not yet have the necessary equipment and system for a steady flow of container traffic. However, progress has been made in recent years to improve the rail transport system and to link the ports to a developing network of container depots. One of the VIIIth Plan objectives is to remove all potential bottlenecks which may hinder the smooth flow of railway traffic on trunk routes, and this applies to container routes. On the other hand, the poor quality of road links between the ports and the city centers or the ports and the hinterland impedes the flow of cargo and slows the development of intermodal and multimodal transport. The internal road transport systems were not designed for the current type and volume of traffic, and ports may have been developed without sufficient consideration being given to the adjacent land transport networks. Furthermore, road approaches to the ports pass through heavily developed urban areas, under the jurisdiction of different authorities, a source of institutional problems. There is a need, in the future, to better integrate port development with the development of the internal transport network, but the VIIIth Plan includes no specific recommendation in that respect.

19. Issues of Logistics. Because of the inadequate inland transportation and current documentary procedures, most import and export containers are still packed and unpacked in ports, thus sacrificing many of the advantages of containerization. Customs regulations impose a physical check of 10% of each consignment; in containers, 10% of the contents of each box. Progress was made recently to improve the rail transport system and to link the ports to a network of container depots. Customs also are more flexible, especially regarding the imports and exports by approved organizations, i.e., mainly nationalized industries. Their export containers may be sealed at the factory and shipped directly. Import containers may benefit from green channel facilities. But there are still many customs and freight agents ill equipped for modern trading practices; with the liberalization of foreign trade and the reduction in Customs duties, there may less justification now for detailed Customs inspection and control and the rules and procedures should be reviewed with the objective of simplification and acceleration. They do not automatically enjoy the confidence of Customs and do not benefit from relaxation of rules. The Multimodal Transport of Goods Ordinance was issued in October 1992, creating the multimodal transport document and facilitates multimodal transport, limited to exports. At the current rate of improvement, quite some time may elapse before India's intermodal and multimodal transport areas will be able to offer service efficiency in line with her international trade requirements. Progress in port operations must move forward in parallel to progress of facilitation of external trade. It would serve no purpose, for example, to accelerate and

simplify Customs formalities if container productivity does not improve. Conversely, it is of little help to discharge 25 containers per hour if these containers are not expeditiously cleared from Customs.

E. Economic Impact

20. Port Costs and Effectiveness: International Comparison. The competitiveness of India's ports needs to be assessed in comparison to ports in other countries competing with her in the international export market. The comparison here deals with ship and cargo related expenses, but not with the costs of the ship itself. Those costs are discussed below (para 27). A survey, uniform in methodology for all ports, was conducted of the port through-costs at five major Indian ports and in the selected Asian ports of Bangkok, Colombo, and Singapore. These ports compete with India's for exports, or affect Indian trade as transshipment ports. The survey was conducted to establish estimates of the total cash cost to importers and exporters from ship-side to gate of each port. The collected data are based on cost charges to users, not on the actual cost of operations. (This figure is not available with any reliability from Indian ports.) Costs are calculated on a per box and per ton basis for consignments and vessels of normal size, excluding Customs duties. The survey indicated that the size of consignments is comparable between Indian ports and those abroad, with consignments of 400 to 500 containers. For breakbulk, consignment size is also comparable, with the exception of Colombo, where it is significantly larger. These data permit the identification of the main areas where action should be directed to produce the most economically significant impact.

21. Impact of Labor Situation on Port Costs. Many aspects of operations in Indian ports (labor restrictive practices, dredging, maintenance of equipment, Customs procedures, etc.) affect their productivity and cost; but not all direct costs relate to labor. The overall costs are only known indirectly, through increased freight rates or reduced traffic. However, the substantial and increasing economic losses caused by the present labor organization are documented, despite the low pay of labor (para 23). Significant savings could therefore accrue to the economy if labor productivity were higher. With the development of mechanization, attrition policies and retraining of surplus staff should have started more than twenty years ago. However, strong labor unions, the directions given by GOI, the absence of a sense of fiscal responsibility, a captive (or apparently captive) market of port users, probably have been the principal causes of excessive caution of port management and the port industry. This has led to an impasse in many ports, an energetic stance of port management gave some results, with improved discipline, increased productivity and some labor attrition. Still, the Indian economy suffers from over-staffed and under-performing port systems, and workers are now justifiably alarmed by the prospects of a massive attrition.

F. Containers

22. Total Through-costs. The sample demonstrates that total through-costs for all major Indian ports is significantly higher than that of other Asian ports (Table E).

Table E
THROUGHPORT COSTS, CONTAINERS
 Distribution of costs for one import TEU (12 t cargo)
 (in US \$ equivalent, 1991)

<u>IMPORT</u>	<u>Bangkok</u>	<u>Sing.</u>	<u>Colombo</u>	<u>Bombay</u>	<u>JNPT</u>	<u>Madras</u>	<u>Calcutta</u>
a) to ship							
Port charges	6.1	2.1	3.4	2.1	7.2	5.2	5.5
Stevedoring	32.4	129.6	114.7	23.5	76.5	62.2	27.5
b) to cargo							
Terminal	128.6	172.8	63.6	200.8	99.0	229.6	245.7
Wharfage	97.5	0	33.0	9.8	0	21.2	4.7
Custom agent	102.5	15.4	30.0	196.1	196.1	117.6	176
Sundry	25.5	0	25.5	78.4	117.6	58.8	47.1
Others 1/	0	24.7	65.0	0	21.6	0	0
TOTAL	392.6	344.6	334.7	510.7	518.0	494.6	507.0
Ship share	9.81%	38.22%	35.29%	5.01%	16.16%	13.63%	6.51%

1/ Documentation tax and other miscellaneous taxes or administrative fees.

Source: Bank consultants, 1992

The import throughport cost in India is typically US\$500 - 520 per box compared to US\$330 - 350 in the selected foreign ports. This corresponds to a cost differential of up to US\$190 per box, which is ultimately borne by the Indian consumer. The corresponding figures for exports lead to similar conclusions: the throughport cost of Indian ports is on average US\$420 per box, compared to about US\$340 for comparable foreign ports. Indian exporters bear a cost disadvantage of about US\$80 per box compared to their competitors. The estimated impact on the Indian economy, based on the container import/export structure for each of the major ports, is about US\$70 million per annum. This corresponds to a reduction in cost competitiveness of US\$40 million and an additional cost of imports to the economy of US\$30 million per annum. These figures disregard lost export potential.

23. Identification of Costs. The comparative structure of through-costs leads to the findings itemized below.

(a) At first sight, India's labor intensive port operation does not result in a cost penalty compared to other ports. This is, however, highly misleading. As mentioned in para 21, the poor productivity of an inflated labor force reflects in economic costs, tentatively quantified in para 27.

(b) Port charges are not significantly higher than in competing ports.

(c) Stevedoring charges per box are comparable or lower than in other ports; relatively low stevedoring charges translate as an imbalance between ship charges and cargo charges.

(d) Terminal charges (shore handling, storage, delivery, transport in port) are higher in Indian ports except at JNPT; specifically, obsolete and inadequate facilities may in some cases increase the cost of handling and delivering containers 30% to 40%.

(e) Administrative costs resulting from extremely complex procedures are high in Indian ports. These complex procedures result in money paid directly to speed up the process (speed money), and identified in cost tables as sundry (Table E). The cost of speed money as estimated by port users is consistent from port to port, amounting to US\$50 to US\$100 per box in Indian ports, compared to US\$0 to US\$30 in other ports. Additionally, the systematic stuffing and unstuffing of all containers, for control by Customs, accounts for up to 30% of terminal costs of a container.

(f) Custom agent charges are considerably higher in Indian ports than in other ports: they amount to US\$120 to US\$200 per box, compared to US\$50 to US\$100 in other ports (see para 24a).

(g) Larger container vessels in Bombay, JNPT, and Madras suffer a cost disadvantage compared to smaller carriers, because they bear higher ship-to-port charges. However, the size of their consignments is similar to those carried by smaller vessels with lower ship-to-port charges, so this point may require/merit further analysis.

24. Priority Areas for Savings. These findings lead to the conclusion that the priority areas where direct significant savings can be achieved for the benefit of the Indian economy are as listed below.

(a) *Administrative and customs agent processing fees.* Customs agents' fees make up 20% - 40% of container through-cost. This reflects two costs:

i) the cost of complex administrative procedures for imports and exports which have been identified separately⁷. However, a detailed analysis of the tasks performed by the Customs agent versus the cost involved would be highly desirable. This would allow an assessment of the extent to which the corresponding costs are justified, or rather result from excessive mark-up related to the licensing system of Customs agents. And

ii) the cost of the numerous rebates and premiums which customs agents need to pay to shippers, carriers, intermediaries, etc. The amount involved are not known and, these payments being traditional, there are few chances that they can be eliminated rapidly.

(b) *Speed money.* Since speed money represents from 10% - 20% of container through-costs, the ethics and attitudes of Customs officers becomes a priority area. However, they will be difficult to eliminate as long as the practice to distribute rebates and premiums all along the facilitation chain subsists (see sub-paragraph above).

(c) *Terminal costs.* Total terminal costs (particularly stuffing/destuffing) represent from 20% to 40% of container through-cost and therefore an area for probable cost savings.

25. The activities, and related costs, of the operators enumerated above are closely interrelated and any reduction of costs on one operation should trickle down to the others. For example, transport and

7/ See Study on Simplification of Customs Procedures by RITES, Delhi, August 1991.

handling charges might be significantly reduced, if stuffing-destuffing activities were not overstaffed, and if there were less checking and tallying operations. The large port and administrative organizations with overstaffing foster inefficiency and slow decision making. This does not automatically appear in rates, but translate into inventory costs. Lastly, any change will meet with resistance, because the port sub-sector has become a privileged environment for rent-seeking, in government agencies as well as in the private sector.

26. Savings on Port Charges. In contrast, there are few savings to be gained in terms of port through-costs from port charges on vessels or cargo charged by port authorities, since their total represents only about 1% of port through-cost. Hence, the most promising opportunities for reducing port through-costs are less with the management and operation of port authorities, which represent only US\$5-US\$10 per box, than with sector regulation as discussed previously.

27. Economic Costs of Sea Transport Under Less Than Optimal Conditions. The international comparison above provides an estimate of the additional cash cost borne by the Indian economy, but it does not capture the economic cost resulting from longer vessel turn-around time in Indian ports. This is true particularly for Indian vessels and vessels chartered by India. It also does not include costs of delays and transshipment, or those costs due to the use of ships of less than optimal size. The difference with the direct cash costs recorded above is not only in amounts, but also with distribution. While most of the additional cash costs are internal to India and are therefore somewhat of a transfer, shipping costs, which are reflected in freight rates, are mostly paid to foreign shipowners. This is due to Indian flag ships carrying only some 10% of the general cargo and foreign container maritime trade of the country. The following examples are significant.

(a) The computation of potential gains resulting from an improvement of berth times in line with international standards shows that, in 1990-1991, less than optimal conditions of operations in Indian ports cost US\$57 million in ship time for breakbulk cargo ships, US\$58 millions for container ships, and US\$5 million for combined cargo vessels.

(b) At Bombay alone, the ship cost in port has been estimated to US\$15 million equivalent in 1991-92, for 555 container vessels with an average port stay of 4.7 days. Productivity on container handling being altogether some 50% of what it is in most ports of the region, any increase in productivity would result in considerable savings.

(c) The majority of containers discharged and loaded in Indian ports are transhipped via Colombo, since main liners do not call, even at modern ports such as JNPT, because of inadequate productivity. The transshipment cost Colombo/Bombay is about US\$500 per TEU. Also, there is an additional ten days transit time, which translates into higher inventory costs, more marketing risks, greater uncertainty in delivery schedules, inability of Indian exporters to meet the increasingly demanded "just in time delivery", as well as greater cargo damage due to multiple handling. Bombay/JNPT jointly receive 400,000 containers annually, with a potential savings on transshipment costs of more than US\$250 million equivalent. To that savings, one should add the flows of revenue and/or added value which would accrue in the Indian economy from additional ship calls and stays in port, possible savings on freight rates, and savings on the cost of foregone investments in ports (para 28). The major and real costs which result from slow and unreliable service are in lack of export opportunities, and have not been quantified yet.

28. Magnitude of Possible Savings Through Improvements. The higher direct throughport costs for containers have been estimated at about US\$70 million. It is estimated that an improvement of the ship-time-at-berth, in line with *moderate* international output standards, would allow an additional potential saving of Rs 300 crores or US\$100 million per year (based on the 1990-1991 traffic volume). This further translates into savings of some Rs 230 per ton for container cargoes carried by cellular vessel, or some US\$110 per container. This is the equivalent of the handling charges from ship's hold until delivery on truck in a competitive European terminal. Finally, improving port performance through institutional and operational changes, linked with modest investments, would substantially increase the capacity of the existing facilities. This would, in the short run, avoid or reduce port congestion as the traffic volumes increase and would also, in the short and medium term, defer the need for substantial new investments for additional port facilities. It is significant that the total cost of the new port at Nhava Sheva, with the extension necessary to handle 5.0 million tons of containerized cargo is estimated at US\$350 million equivalent. This gives the measure of the magnitude of possible savings resulting from increased productivity, and is particularly important since port traffic is expected to grow relatively fast with additional container capacity needed by 1997 estimated to be 4.4 million tons.

G. Breakbulk

29. The sample shows that, regarding breakbulk, Indian ports are competitive with other ports of the region (Table F). The collected data for Colombo and Bangkok may need further elaboration, as they differ considerably from the similar data collected for Singapore.

Table F
THROUGHPORT COSTS, BREAKBULK

Distribution of Costs for 12 t Breakbulk Cargo
(in US \$ equivalent, 1991)

<u>IMPORT</u>	<u>Bangkok</u>	<u>Sing.</u>	<u>Colombo</u>	<u>Bombay</u>	<u>Madras</u>	<u>Calcutta</u>
a) <u>to ship</u>						
Port charges	5.8	7.9	9.0	15.6	10.1	11.6
Stevedoring	16.5	48.1	43.8	47.1	32.9	58.8
b) <u>to cargo</u>						
Shore/Transp	29.4	92.9	300.0	0.2	23.7	0.0
Wharfage	0.0	7.4	23.4	11.8	18.8	56.5
Custom agent	720.0	185.2	360.0	352.9	352.9	470.6
Sundry	308.3	0.0	300.0	117.6	58.8	23.5
Others 1/	0.0	222.2	180.0	0.0	0.0	0.0
TOTAL	1080.0	563.7	1216.2	545.2	497.3	621.0
Ship share(%)	2.06	9.93	4.34	11.50	8.65	11.34

1/ Documentation tax and other miscellaneous taxes or administrative fees

30. The international comparison points at the surprising conclusion that import/export of goods as breakbulk bear about the same port through-cost per ton as the same goods imported in containers, assuming an average of 12 tons of general cargo per 20-foot box: port through-costs per ton are about US\$45 per ton of breakbulk, compared to US\$40 to US\$50 per ton of containerized cargo (Table E). Other Asian ports show a significant difference in the throughport costs per ton of containerized and breakbulk, with about US\$30 per ton of containerized general cargo compared to about US\$85 per ton of breakbulk. The reasons for the observed discrepancy may be:

(a) the comparatively low handling cost in Indian ports, probably resulting from the limited use of fully depreciated equipment, which increases ship-time at berth, but reduces port cost per ton. This may be considered acceptable in India, where a significant proportion of breakbulk traffic is carried by old vessels with a low cost per day;

(b) the comparatively high cost in non-Indian ports, because breakbulk operation is becoming increasingly exceptional and more costly on a per ton basis, as economies of scale are less, and the cost of port labor is higher;

(c) cross-subsidizing in Indian ports between other traffics (possibly oil and other bulk) and breakbulk; and

(d) the breakbulk mix is not identical with that of other ports of the region, and the degree of unitization within this class varies considerably with the other ports.

31. The comparison between port through-costs for containers and breakbulk suggests, subject to more detailed studies, that the cost for containers may be inflated. The reasons may be:

(a) the lack of confidence of the Government, which has set more rigid and limiting procedures for administrative processing of containers than for breakbulk, based on the presumption that the probability of fraud is higher for the containerized traffic;

(b) high handling costs for containers, as the gang strength and productivity for container handling is based on the requirements and performance for breakbulk, thereby destroying some of the benefit of containerization; and

(c) containerized cargo being in general high value commodities, the rates and fees are set significantly above the actual cost of processing.

32. The main conclusions to be drawn from the comparative analysis of charges are that port through-costs are significantly higher for containers in Indian ports than in selected foreign ports. The cost competitiveness of Indian ports for breakbulk is better. The charge structure is clearly detrimental to containers, as the port through-cost per ton is basically the same for containerized and breakbulk cargo, whereas the difference to the benefit of containerized cargo is about 50% in other Asian ports. The charge components which explain the cost disadvantage of Indian ports are not related to the cost of operation but to the administrative and institutional costs related to ports, trade and Customs regulation, i.e., mainly Customs agent fees and, to a lesser degree, handling charges. Other components, including port dues, play a comparatively negligible role. The charges in Indian ports are heavily biased against containers, reflecting possibly an inherent bias against this new type of conditioning imbedded in the administrative procedures and regulations.

33. In Asian ports, there is a strong bias against importing/exporting cargo as breakbulk compared to container (with a cost per ton double for breakbulk compared to containers), while in Indian ports, through-costs per ton are the same for breakbulk and containerized cargo, hence little incentive in favor of containerization. The comparatively low level of port through-costs for breakbulk needs further examination and detailed studies.

H. Environment

34. Pollution. Substantial spills can be observed in Indian ports, especially during the handling and transport of bulk commodities such as coal, fertilizer and iron ore. Products leak through the grabs or underneath belt conveyors, or spill from trucks and from storage areas, the wind blowing the products into the air and water. This has in some ports reduced the available draught alongside the berths. The degree of oil pollution is unknown. Although the need to incorporate the necessary environmental safeguards in planning, design and construction of ports has been recognized, presently only the major ports provide even very basic facilities for the reception of oily wastes. There are no reception facilities for residues and mixtures containing noxious liquid substances and sewage. Contingency plans have been drawn up in case of accident, but there is little equipment for dealing with spills of bulk products. Water quality and air pollution, in particular in the industrial port zones, requires much closer attention. India ratified Annex I and Annex II of the Convention on Maritime Pollution (MARPOL), covering oil and liquid spills. The ports have generally adopted a set of rules and regulations for safety, but are short of trained staff for inspection and control. They also lack suitable equipment.

II. INSTITUTIONAL FRAMEWORK

A. Present Institutional Set-up

35. Basic Legislation. The 12 major ports (para 1) are under the control of GOI and the 138 minor ports under the States. Major ports are statutory corporations; they are organized as trusts under the 1908 Indian Ports Act (the 1908 Act) and the 1963 Major Ports Trust Act (the 1963 Act)⁸. The Dock Workers (Regulation and Employment) Act of 1948 (the 1948 Act) regulates Dock Labour Boards (DLB) and dock labor.

36. Port Trusts. The trusts are administered by Boards of 17 to 19 Trustees, appointed for two year terms by the Government of India. These appointees are selected from government departments, port labor and industry, both state-owned and private, especially ship-owners and shippers. The composition of boards gives importance to government and public enterprise representation rather than to the private and industrial sector (e.g. 8 state and 6 public representatives on the Bombay Port Trust out of 16 members). The presence of labor representatives, with access to management information, has been said to give labor an unfair advantage in its dealings with the Trust and with the DLB. However, that presence is increasingly the rule in many countries. Boards of trustees meet frequently, as a whole, or in committees. The chairmen, who are also chief executive officers, are usually recruited from the Indian Civil Service Cadre (IAS) outside the port sector, or from the Navy. In most ports, a deputy chairman comes from the port sector.

37. Services, Powers and Jurisdiction. Port Trusts are to serve the public interest on a basis of charging their services without the object of a private gain and distribution of profits, but they must deploy their assets in the most profitable manner. In addition to infrastructure planning and construction, Port Trusts have the power to operate ship and cargo handling facilities and services (pilotage, cargo storage, container stations, etc) and to frame regulations for same. The trustees are local conservators. They can raise dues and incur debt. Their revenues finance recurrent and capital expenditures. They finance investments from their own cash generation, from government loans or loans from other ports (Chapter III). As mentioned (Chapter I) Port Trusts are service ports conducting all shore operations themselves.

38. Trustee Limitations of Power. The trustees are bound by the statutes and by directions on policy and by written orders from GOI. Regulations issued by the Board, tariff schedules, appointments to management positions, estimates of revenue and expenses, recruitment of engineering consultants, leases of more than thirty years, borrowing and conditions thereto, etc. are subject to prior approval and/or sanction by GOI. Available funds which are not immediately required must be deposited in the State Bank, invested in public securities or lent to other ports. GOI may cancel any of the tariffs in force or modify them if they consider it in the public interest. Some of these limitations are quite strict. In India, the interpretation and the extension of limitations to the powers of trustees through executive instructions are said to have led to a detailed control of ports by the government. The 1963 Act encourages strict interpretation by its extensive list of required approvals and imposed commitments. Close control by GOI leads to centralization of power both in the Ministry of Surface Transport (MOST) and within the Port Trusts: a management under permanent scrutiny hesitates to delegate.

8/ Haldia comes under the same trust as Calcutta. Therefore, while there are 12 major ports, there are only 11 Trusts.

39. Examples of Centralized Control. All contracts above Rs 2.5 millions (US\$100,000 equivalent) need GOI approval, after a review by committees and boards taking six months to one year for the approval of the procurement of spare parts. This is considered a cause of poor maintenance of port equipment (para 11). Further, port tariffs are revised at irregular intervals, on proposal by Port Trusts to GOI. Frequently, requests are rejected or revised downwards after long delays. The approved rate then may be no longer adequate, thus leading to further requests for increases and new discussions. On the contrary, railway tariffs are adjusted annually as part of the budget process. Lastly, staff appointments and conditions of employment are controlled by MOST, thus jeopardizing efforts to restructure port management's internal organization or to adapt it to the demands for new technological skills. A Committee has been constituted in the MOST to examine the areas where more jurisdiction could be delegated to the port trusts, in consultation with other ministries, specially the Ministry of Finance. This, hopefully, should result in amendments to the 1963 Major Port Trusts Act. These would be as regard (i) the appointment of Department Heads by the Chairman, not by GOI; (ii) the appointment of consultants by the Board; (iii) tariff rates flexibility (freedom within a minimum/maximum range); (iv) officialise leases and concessions (build-operate-transfer) system as the standard system of third party intervention in port operations. While it is true, as explained below, that in many cases, the problem may be more of excessively cautious attitudes than of excessively limitative statutes, modifications to statutes, reflecting GOI's reform policy, are likely, in turn, to encourage changes in attitudes. Port staff need the legal support to feel safe in the changes ahead. As for GOI, it would gain in authority over the implementation of basic policies what it will lose in detailed control.

40. Overall Management Issues. Port Trusts have become large bureaucratic organizations, with many management layers and little lateral movement of staff or internal delegation of power. Staff is dedicated, but "seems unable to ride over somewhat deep rooted prejudice against change" as stated in 1985 by the report of the Major Ports Reform Committee (MPRC). The long assignment of staff to the same Port Trust does not stimulate innovation. The Chairman, with a dual role, can hardly perform properly any one of the two functions of policy planning and control on one side, and day to day management on the other. He should act only as chairman and leave day to day management to a General Manager acting also as Deputy Chairman. Possibly Port Trusts do not exercise all their powers and prefer to refer decisions to New Delhi. Initiative and dynamism vary from one port to another, as the better performance of some ports demonstrates. The 1963 Act does not prohibit the establishment of a Board of Management, formed of department heads, to handle day to day management and coordination, but Port Trusts have not tried to establish such boards. This somewhat passive attitude is due to: (a) the priority given to hierarchy and seniority in the public administration culture which induces managers to compromise with MOST and erode their own accountability; (b) appointment of chairmen for short periods and from the IAS, to which they are to return and continue their career, encouraging caution in their handling of GOI officials; (c) the extension of the type of control, originally designed for planning and major investments, to any kind of investment or major activity of Port Trusts, which is not what the legislation stipulates and is adverse to the concept of management by trustees; (d) the insufficient management capability of many managers - a cause of serious concern to MOST (para 51); and (e) ports being seen as branches of government, a condition reviewed in more detail below.

41. Indian Ports as Statutory Bodies. Because Port Trusts are statutory bodies, they are viewed mainly as authorities sharing the privileges and imperium of government rather than as service industries. Like local authorities, they are immune from most taxation, and the 1963 Act makes reference to other Acts equally applicable to such authorities. Close control is therefore accepted as inherent to their nature despite that in fact, Port Trusts have very few quasi governmental powers. Even police powers are vested not to the Trusts, but to government officers who simultaneously also happen to be Port Trust

officers (e.g. harbor masters). Being service ports, port trusts are much more service corporations than they are part of the machinery of government. It has been argued in GOI that since major bulk-traffic flows at ports are either allocated by government or location-specific and because government owned industries exist in the port hinterland, ports are links in a chain of government related activities rather than independent economic units operating in a market. However, while bulk cargo for large state industries may, and at times should, be taken care of in a planned system, containerized and general cargo, which make up 40% of dry cargo traffic necessitate a different approach for optimal efficiency. The present restrictions and controls delay decision making and layers of administration interfere in port management. Capacity and devotion of port staff and their ministerial counterparts could be better utilized if redirected. The desire for improvement is evident, as demonstrated by the 1985 MPRC Report. It pointed out, as did many earlier reports, "MOST's propensity to directly take over management from ports rather than to delegate authority, monitor their performance and coordinate their development..." It also stated that "...ports must function on commercial lines... and provide service at acceptable levels of efficiency and productivity".

42. Parliamentary Control. Parliament is informed through the Annual Administration Reports of the Trusts. No major parliamentary debates on ports have taken place for years, but there have been examples of excessively detailed questioning. This reflects on the attitudes of the supervisory staff in MOST, who have to work within an exacting framework. The parliamentary system imposes limitations on the executive branch, which in turn reflect on its relationship with the Trusts' boards. Any change, for example, in the threshold level for approval of Port Trusts contracts would necessitate changes in the thresholds applicable to other levels of the governmental hierarchy: minister, cabinet, etc., who share their approval powers with committees and commissions and with the Investment Board. The legislation is very detailed and therefore quite inflexible. It could be shortened and simplified, and some of its content transferred to statutory regulations or ministerial orders. The revision should however be cautious, since Port Trusts find stability in a detailed parliamentary legislation, which protects them from abrupt and possibly contradictory changes decided by successive ministers. Also the legislation needs to be more substantive and provide policy guidance to port managers. Box 1 gives some examples.

BOX 1
WORDING OF MODERN TRANSPORT LEGISLATION

Much transport legislation reflects the legitimate concern that public resources not be wasted by transport and port authorities and these authorities remain under adequate control. The result is legislation worded in rather negative terms. Further, lawyers frequently draft port legislation based on traditional models, and during their deliberations, members of Parliament rarely innovate on what appears to them as basically technical, rather than political bills. The result is much legislation, although comprehensive, is lacking in substance.

More recently, however, this has changed and modern legislation stipulates objectives and reflects broad policy statements which serve to guide and instruct port authorities.

The French 1982 Act on Domestic Transport, rather than referring simply to the public interest, stipulates that "the systems of domestic transport need to satisfy users' needs in the best economic and social conditions for the public as a whole. They contribute to national unity and solidarity, to national defense, to a balanced development of the different parts of the country, and to the development of foreign trade, specially European" (Section D).

This means that, in evaluating their investments and their management decisions, managers of public transport systems need to take these objectives into consideration, with adequate quantifying whenever possible. Indeed "Investment decisions regarding infrastructure, facilities and equipment are based on economic and social efficiency criteria".... "they take in consideration (not only) financial costs, (but also) the actual economic and social costs" (Section 14). Such stipulations, in a fundamental legislation, it should be noted, protect transport authorities from political pressure in favor of non-justified projects. By promoting such projects, these authorities would act *ultra vires* and illegally.

The 1983 Memorandum of Understanding between the French Government and French Railways reflect these principles. It stipulates that the company must satisfy users' needs "in the best macroeconomic and social conditions for the public as a whole". When it comes to non-profitable lines, the company is free to take its decisions "within its autonomy of management, taking in consideration the type of connection, users' needs, and costs of the service". As for tariffs, the company is free to act, except that it should be financially sound: "The company implements a tariff policy... which permits to balance its accounts".

In Canada, the 1985 and 1986 legislation on the administration of public ports, Canadian Port Corporation and the Port Commissions all refer to and stipulate the national port policy. The objective of the policy is *to create a port system that is an effective instrument of support for the achievement of Canadian trade objectives and of national, regional and local economic...objectives; is efficient; provides port agencies with a high degree of autonomy for the management and operation of the ports for which they are established and is coordinated with other surface and air transportation systems*. The port policy is therefore legally binding on port authorities. The legislation is no longer a document stipulating only the due process of port affairs; it stipulates the long term strategy.

Few developing countries have recent port legislation reflecting broad policy statements. In the Islamic Republic of Mauritania, however, the 1975 Ordinance establishing the Nouadhibou Port Authority stipulates that "all investment projects must be proposed to the supervisory ministry together with their economic justification and the financing plan", thus introducing the economic legislation as a legal norm compelling to the port authority. The Cameroon Ports Act of 1972 is on the same lines and defines with some precision what should be the financial policy of the National Port Authority.

43. Impact of Other Government Agencies and Legislation. Neither the Port Trusts nor MOST operate in a political vacuum. Management is forced to be more anxious to respond to GOI's imperatives (including social peace) and to a global but vague concept of public interest than to be cost conscious, responsive to users' immediate needs or accountable to the port's clients. The optimal policy, from a port sector approach, may not be the optimal policy at the government's level, but there is evidence that the costs of constraints imposed to the port system by other government agencies are excessive. Port management complains that port regulations cannot be enforced against nationalized industries nor other public bodies. The Customs legislation and practice is not yet fully adapted to container traffic (para 17). Also, the Rent Control Act, not applicable to leases of port land, is abused by sub-lessees, which

frustrates the port efforts to recover rents. This sheds a light on port users' attitudes: while they are quick to criticize the management of Port Trusts, they draw benefit from their weaknesses.

B. Port Planning Procedures

44. Five-Year-Plan. Port planning is conducted by each port and all port projects proposed by Port Trusts and approved by GOI are included in the Five-Year-Plan (the Plan). Coherence between individual port plans and the Plan orientations is therefore considered essential. When a project is proposed, its validity in the light of the general principles underlying the Plan is a basic criteria for its acceptance. The Planning Commission (PC) initiates the planning process in New Delhi. It establishes a Port Working Group as well as its specialized ad hoc sub-working groups. These groups are headed by MOST and composed of representatives of users, other ministries and the major ports. Individual ports prepare their own plan documents for discussion by the Working Group and approval by the PC. A basic distinction is made between modernization of existing facilities, renewals and replacement and additions to capacity. Once priorities are set and the Plan approved by GOI, the programs of each port are adjusted according to resources available, giving priority to the "Continuing Schemes" over the "New Schemes". The mere inclusion of a scheme in the Plan does not ensure automatic approval for implementation and a full appraisal is necessary.

45. Annual Plan Execution. Plan execution is annual and involves the same procedures. Projects selected for the year need in general to have already been included in the Plan, but changes can be introduced. The annual plan and projects are discussed with MOST, approved by the PC based on financing available, on the needs of the ports and on their earlier performance in implementing development schemes. The final decision rests with the Ministry of Finance, also based on availability of resources, especially foreign exchange, and on the total Plan package. Resources available at port level may not be released at GOI level, for macroeconomic reasons. Port Trusts have the power to approve schemes (infrastructure and equipment) costing up to Rs 50 million (US\$1.8 million), provided they are included in their plans and annual capital budget, and subject to the approval of contracts as previously described (para 39). The MOST has reiterated to the Bank that GOI retains the power regarding formulation of the national port policy and investment decisions. The decentralization of powers for execution is currently under review by the Committee mentioned in para. 39 above. The outcome of the meetings of the Committee, and the delays in which recommendations will be issued are at present unknown.

46. Evaluation of Planning Process. The planning capacity of individual ports is modest, resulting in projects which are insufficiently prepared for proper presentation. This causes rejection or delays of approval. How the port users at port level are actually involved in the process, see their priorities taken into consideration, and are confronted with the costs and implications of their requests for development, is not clear. Nor is it clear that considerations other than engineering play a major role in decision making. The distinction between the different types of investments has led to a preference being given to development projects over rehabilitation projects: the former are easier to finance.

47. Institutional Correlations. This procedure still reflects India's centralized planning system and, until recently, government controlled economy and scarce foreign exchange resources. It was established with the view of restricting competition between ports. Successive governments, MOST and the users successfully resisted past recommendations for the creation of a National Port Authority (NPA), which would decide on investments, pool resources and allocate cargo, especially that imported on Government account. This would have added another level of command and decision making to an already overloaded

regulatory system. Even those who favor some national planning insist that ports should be free to manage their own daily affairs and that central planning should in no way impede their capacity in that respect. In fact, planning processes and close control by government are closely related to the situation of port finances, since few ports have been able to self-finance their investments (paras 76 to 79). Port Trusts have not been able to implement their investment programs. On average, from 1985 to 1990, Madras spent only 73% of its VIIth Plan allocations, Cochin only 46%, Calcutta/Haldia and Bombay only 36%. The differences from one port to another are too large for delays in GOI to have been the only reason for slow contracting and disbursement. The difference of quality of management and planning capacity in the different Port Trusts certainly played a role.

C. Staff and Labor

48. General: Port Trust Labor and Dock Labour Board Labor. Port labor at major ports is divided along two different lines:

(a) in terms of legal status : Port Trusts labor is employed under Port Trusts' conditions of contract; and dock workers scheme labor is employed by stevedores and other operators, under the local Dock Labour Board (DLB); and

(b) according to its occupation: there is division between cargo handling labor and other staff, especially administrative and technical.

Cargo handling labor itself can be employed either ashore (Port Trusts labor) or on board ships (stevedore labor). The distribution of tasks between ship and shore rests on the distribution of liability for cargo between ship and shipper/consignee, the cut-off point being the ship's rail. This has led to a sizeable work force, inherited from the period when mechanization was limited and traffic was calling at random intervals. This mode of port operations is becoming outmoded, since, especially through containerization, the concept of terminal, regular services and unified operations now tends to prevail. The labor force in modern ports tends to be more permanent and smaller.

49. Total Establishment and Work Force. At the end of 1993, the establishment and work force of major ports was some 114,000 employees (94,000 for Port Trusts and 20,000 for DLBs). In addition, up to 40,000 casual workers were an unregistered complementary labor force. Cargo handling dock and shore workers (Port Trusts and DLB) numbered 65,700 for 33 million tons of break-bulk and container cargo and 67 million tons of dry bulk cargo. These numbers are far above what they are elsewhere. While the standards of other countries are not fully relevant to the employment conditions prevailing in India, the difference is considerable. Based on the above figures, each member of the dock labor force handles 500 t of general and container cargo per year. In Australia, after the waterfront reform, each dock worker will handle 4000 t; in France it was 7500 t in 1992, which was considered inadequate and should be 15000 t when the on-going waterfront reform will be completed. These figures are not directly comparable as the mix of breakbulk and containerized traffic differ, but they are nevertheless, indicative. The total surplus of cargo handling port labor was estimated at some 15,000 workers in 1991. This figure appears to be low. DLB dock workers establishment fell by some 1,500 units from 1989 to 1990; traffic figures for FY 1991/92 and 1992/93 indicate improvements in productivity (para 12). Attrition has been going on for about twelve years to 1991 at the rate of some 1% p.a. and has accelerated since; the MOST has reported in 1994 that the work force declined by 15% from December 1991 to December 1993.

50. Port Trusts Staffs. The establishment of the major Port Trusts (94,000 by end 1993) declined by some 20% over 1984-1991, and by 9% from 1991 to 1993, mainly among dock labor workers, currently numbering 57,000. The remaining (37,000) are managers, supervisors, clerical workers, mechanics, and officers and managers. The ratio of professionals (Class I and II officers) to other staff, including dock labor, is on average 1:21 (1:36 in Bombay, 1:16 in Calcutta, 1:25 in Cochin, 1:17 in Madras, 1:9 in JNPT). This is low, far too uneven from one port to another and indicates overstaffing at lower levels. At intermediate level the number of supervisory staff is inflated. This may be due to the pressure applied to promote staff in compensation for low salaries. Ports have become immense social welfare organizations, to the main benefit of the lowest categories of staff. The new Jawaharlal Nehru Port Trust (JNPT) at Nhava Sheva can be considered already more than well staffed with 2,000 dock labor workers, despite a still modest traffic and a high degree of mechanized cargo handling of containers and bulk commodities.

51. Personnel Administration. Port Trusts chairmen spend an inordinate amount of time dealing with personnel matters. There are no personnel departments in the Port Trusts for a unified personnel policy, for staffing plans, job evaluation, career development or training. On the job training is general, with all its inherent weaknesses. The country, despite genuine efforts in establishing institutes of port management, has limited training resources for senior and middle managers of ports. There does not seem to be any deliberate high level training policy. Training overseas is considered costly and of low productivity, therefore Indian staff do not usually participate in internationally organized training, which would contribute to updating their professional capacity. The quality of middle management is apparently modest. Not all senior staff are up to standards. This is a cause of concern and embarrassment to GOI and one of the reasons of MOST's reluctance to relax its control (para 40). MOST claims indeed that, while the present centralization, which port managers deplore, is a direct consequence of their inability to manage. Professionals in the shipping sector and in trade in general are exasperated by the lack of response of port management to their needs. Port personnel policy calls for a detailed review and reform oriented towards efficiency and professionalism. The GOI has started to act in that direction. Ports have been instructed not to fill up positions vacant for more than one year and to identify and abolish redundant positions. In addition, port officers are being offered to participate in a voluntary retirement scheme (para 56); the number of officers declined by 1.5% annually from end 1991 to end 1993, 0.5% over the earlier gross attrition rate for all staff (para. 50).

52. Dock Labor Salaries. By Indian standards, salaries are considered high. In 1992, wages and salaries constituted about 70% of the total cost of port operations. The average annual earnings of port workers were estimated to be 120% to 400% of that of workers of equivalent skills in other industries. Private operators in one large port consider that using their own staff rather than Port Trusts or DLB staff would reduce their labor costs by 75%. Part of the salary is based on piece-work, which is common in the profession. This was developed before unitization and containerization and is obsolete in its present form. The standards on which piece-work premiums are paid are too low and the system is abused. Workers make no effort to achieve reasonable outputs on cargoes for which the piece-rate is low. Recording of idle time by piece-rate clerks appears generous. This reduces the working time used for calculating piece-rate data, and creates artificial salary increases. Measures recently taken to alleviate this are outlined in para 56 below.

53. Port Staff Salaries. Port Trusts have their own, rigid and numerous salary scales for staff other than cargo handling. Contrary to dock labor salaries, compensation is modest by industry standards. It does not stimulate performance or career development, nor does it facilitate recruitment of promising talents. Working conditions are difficult for professionals confronted with a well organized union dock

labor force. The issue cannot be isolated from the overall issue of compensation of public employees in India generally, but it is clear that the financial situation, status and working conditions of professionals need upgrading. The establishment of a national port cadre, which would increase professionalism and permit rotation of senior staff from one port to another, has been considered. The cadre would be open, on the basis of merit and professional qualification to all employees of every discipline. It would permit the selection of first class candidates from all ports to fill vacancies of department heads and other senior positions, including in the port office in MOST, regardless of the port from which they originate. Now staff are hesitant to rotate, usually for family reasons.

54. Dock Labour Board (DLB) Labor System. Dock Labour Boards are tripartite bodies comprising an equal number of representatives of GOI, dock workers and employers of dock labor and shipping companies. Traditionally headed by the chairmen of the Port Trusts, they administer registered dock workers, who are de-casualized and have full regularity of employment (minimum 21 days/month), wages, welfare and unemployment benefits. The DLB acts as a labor supply agency (holding employer) administering the legal framework and branch agreement signed with the unions, or Dock Labour Scheme. The operator (usually the stevedoring company) is the operational employer which makes use of the occasional services of the docker, against payment to the DLB for wages, welfare benefits and a levy for financing compensatory payments when there is no work. This levy is an insurance premium which guarantees the presence of labor when needed to operate a ship, but relieves the operator of permanent employment of workers when there is no traffic. In fact, unregistered casual workers are employed by the stevedores and other operators to speed up the work of registered workers or replace them in unpopular or hazardous tasks. There are probably a large number of parallel and non-recorded payments between registered workers and casual staff. A rent mentality has developed among registered dock workers. The DLB system, which has achieved its justified social objectives of securing employment, at least minimum stability and wages for dock labor, was fairly well adapted to the old traffic conditions, and to a labor force of modest or no specialization. However, it has encouraged irresponsibility in competing unions, inefficiency and poor discipline of workers. The ports and operators are hostage to the cost of satisfying union demands which are always lower than the cost of ship demurrage when a strike erupts. But container traffic develops as scheduled traffic and work is no longer casual. Tasks are more elaborate, labor is more specialized and regular, and as a result, the DLB scheme is less adapted to present conditions.

55. Restrictive Practices. Restrictive practices are numerous. Job classifications are strictly demarcated in separate specialized sub-schemes. Workers refuse to be transferred from one sub-scheme to another, to undertake work outside their job classification, or to move from one area of the port to another. Excessive manning levels, delays in reporting to work, wetting, early stoppage before end of shift and deliberate slowness in conducting handling equipment are typical practices. Drivers are insufficiently motivated and lack discipline. Skilled operational staff are in short supply and operational planning is imperfect. Restrictive practices such as rigid equipment and driver allocation policies, and inadequate communications add to the difficulties. Therefore, speed money, although illegal, is reportedly paid to port labor to obtain productivity levels above the low official requirements. Speed money increased the productivity in some Indian ports during the last decade, but the expectation that speed money is to be obtained is presently a cause of slow work. It is clear also that the payments made openly to others than dock labor have an impact: port labor also feel that they are entitled to some perk.

56. Present Changes in the System. Port labor has, over the years, resisted most schemes for improvement of productivity, while not being able to stop a slow attrition of the dock labor force (para 50). Bombay and Paradip have been able to increase the cargo handling standards, while rates of

incentives have been simultaneously increased so that the total earnings of the workers do not suffer at the new productivity level. The agreement signed in 1994 with the All India Harbour Federation *para. 17) should result in increase in productivity. It has also been decided to merge the DLBs with Port Trusts. This will be done port by port on the basis of agreements with unions. Labor gangs will be interchangeable, salaries and working conditions will be unified and administration simplified. The elimination of DLBs means the attrition of intermittent labor, at present intermittently paid, and its replacement by permanent labor permanently paid. The establishment of the Port Trusts would increase massively, for which they do not seem prepared. If attrition is later necessary, it would be difficult to discharge any new permanent staff. By the end of 1993, the seven original DLBs were still in existence. The only ports where the merger seems to be in progress are Bombay and apparently Cochin. Details on the Bombay scheme (attrition by early retirement, retraining, elimination of unregistered workers, etc.) are well documented. It can be expected that entrenched habits of registered dock labor, which at present generate individual financial benefits, will be slow to change or to disappear. Also it is doubtful there will be acceptance of unregistered casual labor to simply disappear from port premises, in a national situation of widespread underemployment. It will be necessary to observe closely the development and implementation of reforms before progressing further in that direction. The issue is important because reform is not automatically popular with port labor. If it fails, it would be a long time before it could be tried again. In Madras, a massive reduction in the number of workers employed in gangs working on containers, without attrition of the total work force, led to an increase in gang productivity, which offset the cost of paying workers for not reporting to work. This is obviously a second-best solution, but such solutions are frequent when it comes to solving problems of port labor. There are limits, however, to what can be done at the local level. A broad national scheme of voluntary retirement has been offered: from 1992 to end 1994, some 9,000 workers/employees/officers have accepted it. The cost may be high, but it may be possible to use the National Renewal Fund to finance a national scheme; the matter should be explored. Boxes 2 and 3 give examples of recent dock labor reform schemes in Australia, New Zealand and France.

BOX 2

AUSTRALIA AND NEW ZEALAND: WATERFRONT REFORMS

In Australia and in New Zealand, major issues facing the port industry have been mainly related to the performance of the dock labor force. Over-manning has been the rule, with many restrictive practices causing low productivity, and resulting port services to be expensive.

In Australia, a Waterfront Industry Reform Authority (WIRA) was established in 1989 with a three year mandate to oversee the reform of the structure and performance of stevedoring activities. To achieve this, WIRA set in motion a process centered around reducing, rejuvenating and re-training the work force. It also encourages enterprise based employment agreements which include training, multi-skilling and a defined career path, along with performance incentives.

From 1989 to 1992, following the reform, the average containership turnaround (560 TEU ships) has been reduced from 44 to 22 hours; the average turnaround for grain ships is 2.4 days against 4.5 days in the past; the number of longshoremen employed to unload a grain ship has dropped from 12 to 2; the total number of Australian waterfront workers, once 9000 is now 3950; 40 ship days per month were lost in 1989 to work stoppages at Sydney but only 2 in 1992; and the percentage of longshoremen over 50 year old is 11%, down from 49%.

New Zealand also established a temporary WIRA in 1989. At the same time, the Waterfront Industry Commission, which employed all waterside workers engaged by stevedoring companies, ceased to exist. In its place, normal employer-employee arrangements came into effect. Negotiations were opened on new terms and conditions of employment, and the redundancy provisions which were to apply to longshoremen who were not reemployed. Fully 50% of the waterside workers were discharged, the average redundancy payment US\$16,000 equivalent. Total cost of the scheme was US\$22 million for some 4000 workers. The direct savings resulting from improved productivity are estimated at US\$26 million equivalent.

The impact on productivity in New Zealand has indeed been impressive. The turnaround of vessels decreased by 40% to 50%: the volume landed by gang/hour increased by 40%: ports are now working 7 days a week. Greater flexibility has resulted from multi-skilling and the breakdown of rigid demarcation issues between categories of workers, and management now has a challenge to devise better, quicker, cheaper and/or smarter ways of doing things.

Sources: B. Lewarn and R. Wallace. Port Services - The Privatization Issue. Australian Maritime College, 1992. And Port Reform in New Zealand. A Mid-Term Update, New Zealand Business Roundtable, August 1990.

BOX 3
DOCK LABOR REFORM IN FRANCE

French ports are landlord ports in which private operators conduct cargo handling operations with either their own or port authority equipment. Until 1992, 1947 legislation governed the waterfront work force. The 1947 Dock Labor Act established Dock Labor Boards in each port. Registered workers had the monopoly of employment at common user berths and a guaranteed payment of a minimum number of days per month, whether or not they worked. The dock labor force in each port included a reserve force; in man/hour, this could be equivalent to or lower than 25% of man-hours effectively worked, to accommodate traffic peaks. The compensation of idle workers was by a special trust fund financed by the stevedoring and shore handling industry, and common to all ports.

The legislation was originally implemented with success. Full employment in the country from 1947 to 1975 permitted a 50% decline of the work force as productivity increased, at no social cost. Salaries were well over national average and dock workers were well qualified. However, an illegal but tolerated closed shop system developed and one union, the Federation Nationale des Ports et Docks, took control of the system and of the Dock Labour Boards, and imposed its conditions regarding working hours, wetting, overtime, productivity, job demarcation, etc.

Conditions started to deteriorate seriously after 1975, when containerization and the concentration of ports developed while the need for manpower diminished. Despite that the 1947 Act provided for staff attrition when idle hours reached 25% of hours worked in any port, union resistance, supported by wildcat strikes, prohibited any attrition. The trust fund being national, the most successful ports were increasingly financing declining ports, where unemployment reached 50%, and where there was no incentive to reform since these ports did not absorb the cost. Dock labor tried to expand their monopoly to dedicated berths and inland truck and container terminals, but failed. The increase in number of dedicated berths with the development of shore based industries was the cause of many strikes and severe incidents. Discipline was poor, since dock labor was not directly employed by port operators, but by the Dock Labor Board, which they controlled. Traffic was diverted to foreign ports, especially those at Antwerp and Rotterdam. An indirect but noticeable result was the development of overcapacity in French, Belgian and Dutch ports: all competing for the same French traffic.

The June 1992 Dock Labor Act

Following severe strikes in Dunkirk in 1991, and a precedent setting December 1991 decision by the Court of Justice of the European Communities, the French Government passed the 1992 Dock Labor Act. The former declared the monopoly of dock workers in Genoa (Italy) to be contrary to the stipulations of the Rome Treaty establishing the European Community. Under the new Dock Labor Act, all dock workers have become permanent employees of port operators and, therefore, employed under the Labor Code, branch agreements and same conditions as any other worker. The result was 50% of a dock labor force of 8000 discharged, under favorable conditions financed by port authorities, the industry, and government. Dock labor has been given a limited period of time to accept these conditions, after which they would be discharged under less generous common law conditions. In each port, the Dock Labor Board lost most of its jurisdiction. It survives only to administer a small number of occasional workers to be employed during peak periods. Indemnification of idle days of occasional workers is to be financed locally: the interport trust fund is dissolved. This should prevent declining ports from keeping idle workers on their rolls, and encourage occasional dock workers to leave the trade when they are no longer needed. In any case, the policy is such that occasional dock workers should, over time, be completely eliminated. This is already the case in a few ports, where the Dock Labor Board has been dissolved completely.

Early Results of Implementation

The main dock labor union fought very hard against the new legislation, multiplying strikes in 1992 in the hope it would not be passed or implemented. Losses of traffic were severe. Finally, all ports fell in line except Marseilles where the conflict dragged until late in 1994 when a compromise was finally agreed upon between unions and port operators. Many dock workers are in fact satisfied with the change. With the 1947 legislation, which was frozen they had, over the years, lost ground in relation to the standard labor code benefits applicable to other workers.

Main lessons

First, the French experience demonstrates that political will is essential. Here, the minister who initiated the reform was a docker's son and knew all the details of the industry. The task was carried forward under two successive ministers and prime ministers, without hesitation; the opposition implicitly supported the government. Second, the scheme was well publicized, and all interested parties were consulted openly. Nobody was taken by surprise, and the process was honest, although risky. Third, the senior civil service preparing the project proved loyal and efficient; it carefully worked out details

and produced legislation and regulations which were well drafted, realistic and sustainable. Fourth, the financial conditions were generous and the load was shared between different parties who will all benefit from the reform. Specifically, the industry was asked to participate before any benefit would accrue, and to take the risk of failure. Lastly, it must be added that the government agents took advantage of the tactical errors of the monopolistic dock workers' union. The latter's other unions supported a reform which opened the way to pluralism in the unionization of dock labor.

Costs and Benefits

Initial financial cost has been high. Redundancy payments, provisions for early pensions, etc. amounted to the equivalent of 12 to 15 months salary per worker discharged. Benefits have already accrued as traffic has returned to French ports, productivity has increased and new jobs are being created. It is estimated that about 2/3 of traffic currently using foreign ports should be regained if French ports establish their reliability; the remaining traffic uses foreign ports because they are nearer to the points of origin and destination of cargo.

Source: *Journal de la Marine Marchande*, Paris. *Transports*, Paris, et al.

D. Development of Private Sector Involvement

57. General. Both service and landlord ports can be either publicly or privately owned, but generally landlord ports are public. Private ports are usually service ports closed to third party operators. The landlord port is really in the nature of a government-owned entity like a highway. It is a place where a public body, administered in a cooperative way with the interested parties, concentrates at creating and maintaining the right conditions for economic development. This is done by operators placed as much as possible in competition, and running the full financial risk of their businesses. The development of private initiative in a public port is not therefore a major innovation. Rather this is part of a trend to move from the service type of port authority, performing all tasks on its own forces, to the landlord type, which leaves operations to third parties while keeping control of infrastructure and land. This returns public bodies such as Port Trusts to their real role: that of planners and of wardens of the public interest in a competitive, open and business oriented system. If, as it is believed, this is the direction in which India is presently moving, this is not a revolution and the issue does not deserve to become emotional. India is simply joining a large number of other countries in their approach to port management.

58. Past Policy. Indian Port Trusts were originally established, in the XIXth century, in some defiance of the private sector. The view was that trade interests were seriously endangered by the monopolistic position of some companies in shipping, cargo handling and storage, and, more importantly, by their ownership or control of shore properties. Since then, port policies have not visualized private sector involvement. Still, according to Section 42(3) of the 1963 Act, a trust port may authorize any person to perform some of its services such as landing and shipping goods, receiving and delivering cargo, pilotage, mooring, etc. While the enumeration is limitative (towage, for example, is not included), this was an opening towards the private provision of port services, which has not been clearly taken advantage of. In some ports, even the use of private equipment by operators has been prohibited. The private sector, not encouraged to own or to operate port facilities, has quite naturally limited its activities in ports to services: especially those requiring little investment and generating good profits, such as Customs agents, ship's agents, stevedores, etc. Similarly, neither MOST nor the Port Trusts have prepared for the intervention of the private sector, because it was not visualized. The absence of intervention of the private sector has had a number of negative consequences, at port level and at macroeconomic level:

- (a) absence of competition between operators of similar facilities;
- (b) inadequate labor discipline and productivity creating poor industrial relations in a public enterprise environment, where all the burden of labor problems fall on the managers of the public port authority;
- (c) lack of sense of responsibility by users, who should share the blame for insufficient productivity (ship cargo distributed in two hatches only out of five, slow clearance of cargo from transit sheds, late arrival of cargo for export, absence of import documents, etc.);
- (d) overburdening of Port Trusts finances, and indirectly of GOI finance, with the cost of large investments; and
- (e) foregone taxes, because Port Trusts do not pay taxes on their commercial activities.

Besides, as the Indian economy develops rapidly, the pressure will increase on ports to provide modern dedicated facilities in greater number. Any additional industrial investment in the hinterland will reflect in increased demand, for which resources will be necessary. Industries must consider their port terminal as an integral, if remote, part of their plant and system, which they must finance, even if, because of its location in a public port and on public land, a specific legal regime of ownership and operation may apply⁹. A greater role for the private sector would be not only in the interest of efficiency but also in the broad financial and fiscal public interest, quite in line with the Ports Trusts' basic mission. As will be seen from developments in para. 64, this appears to be the trend of present policy.

59. Impact of Technological Changes on the Role of the Private Sector. The common user berth, where ship operations are independent from shore operations, was fairly well adapted to a division of operations between stevedore and shore handling operator (here the Port Trusts). The new integrated terminal on the contrary lends itself better to a sole operator, and therefore to licensing or other form of devolution. The main issue is how to regulate the monopolies which may develop from privatization, or assure some competition. For the time being, few ports in India have traffic justifying more than one container terminal. Private management of such a terminal would need to be satisfactory to all users. This might be realized by leasing it to a consortium of companies rather than to one single operator.

60. Modes of Private Sector Involvement. Indian ports can use the build-operate-transfer (BOT) process for new facilities, the leasing contract for existing facilities, the joint venture, or the licensing system. In the first two cases, the ultimate owner of the facility is the port authority, but BOT relieves the public purse of the cost of financing. The lease contract may include the obligation for the operator to finance partially or totally any development to the facilities which it leased, in which case the leasing contract is more a BOT than a straightforward lease. The lease may cover the waterfront only, the quay-wall and the land area behind, the quay-wall and surfaced terminal area, the complete infrastructure of the terminal, or the fully equipped terminal. In the joint venture, the lessee is a company jointly held by the port authority and the operator: it enters into an agreement with the operator alone for the operations of the facility. In the licensing system the owner of the facilities or equipment is private. Port Trusts can also contract out tasks at present conducted by force account, such as maintenance. All

^{9/} Significantly, in French ports, all dedicated berths and facilities have been financed and are operated as concessions by private industries, not by local port authorities, which act only as landlords and wardens of the public interest.

contracts involving private sector intervention should be awarded after public bidding based on well defined investment, service and financial criteria. The complete sale of existing port facilities may not be relevant to the present situation in India despite the fact that it is the simplest way of privatization, since there is a global transfer of property from the State to private investors, for the immediate benefit of the public purse. However, it raises, *inter alia*, the major issue of whether valuable shoreline property should be sold to private interests.

61. Institutional Impact. The intervention of the private sector would have major institutional implications. Port administration in India needs to be increasingly oriented towards operational and economic efficiency. The development of private sector intervention will call for a greater capacity to administer the system for the benefit of the public interest. This requires keeping private activities under a balanced control, neither oppressive nor lax, and ensuring adequate competition. The transfer of public activities to the private sector will be the easiest part of the privatization exercise. The administration of privatization will require talents that are neither those of the private operator nor those of the present civil servant. Port authority staff will be less numerous, but more qualified. More analytical work will be performed, in law, in economics and in finance. The public interest is at present the policy framework in which port trusts are supposed to operate, but is not otherwise defined. Still, the regulation of private sector activities, especially to ensure competition and the functioning of a market, will need to be weighed in relation to such public interest and standards will need to be elaborated and implemented. Privatization, therefore, will change not only the system of port operations, but, more importantly, the way and style in which port administration and control will be conducted. Hopefully, the senior staff at both MOST and the Port Trusts will find very quickly that, far from diminishing their role - which they seem to be concerned about - this will enhance it. Although it will be very different from what it is at present, they will be upgraded in a much broader perspective.

62. Performance, Monopoly and Labor Issues. Privatization is not without risks, especially in the context of Indian ports. The risks are in terms of performance, cartels, monopolies and acceptance by labor.

(a) Performance may not be what is expected. Everything depends on the interests of the cargo handling company, and the conditions under which it operates. It may benefit from fast turn round of ships (if a subsidiary of a shipping line), or may find advantage in conducting its operations at a more steady pace. This is, however, unlikely if there is competition.

(b) Cartels may increase cargo handling costs. At present, the structure of through-costs of containers in Indian ports indicates that private sector activities such as Customs forwarding are very expensive. Stevedoring rates are said to have been too high in the past and to have necessitated GOI's intervention to bring them down.

(c) Labor is a major issue. Any lessee, operator, concessionaire, etc. of port facilities will expect to use their own labor rather than that of the Port Trusts (including supervisory and middle level staff) and/or DLB labor. Also, the contracting out of maintenance would impact on the establishment of Port Trusts. Still the resistance to any change from dock labor in India is well known, and the more involvement of the private sector the more labor resistance may build up.

Box 4 provides an example of the positive impact of privatization of a container terminal.

BOX 4

WELFARE CONSEQUENCES OF PRIVATIZING KELANG CONTAINER TERMINAL IN MALAYSIA

The sale of Kelang Container Terminal in 1985 was the very first Malaysian sale of public property to third parties. A study of its impact is therefore especially relevant, since terminal operations were a very lucrative activity. Only 10% of the shares were actually sold to the private sector: the remainder went to other public enterprises. While in fact the government retained most of the ownership, the way it is exercised is quite unusual. Indirectly held public enterprises, in practice are accorded considerably greater autonomy than those directly controlled by government.

Productivity increased at the terminal after privatization. In the late '70s and early '80s, the operating efficiency, in terms of containers handled per hour, was rated as poor. In 1985 Port Kelang was rated eleventh in a list of fifteen rated container ports worldwide, but went to sixth in 1987. It was fourth in 1988, and although dropping to sixth again in 1990, its rating was still higher than Bremerhaven, Hamburg, Hong Kong, Jeddah, Kaoshiung, Le Havre, Pusan, Rotterdam and Southampton.

Labor is internationally a potential loser from divestiture of public enterprises. In the Kelang case, workers received an immediate salary raise of 20%, an increment which has since risen to as much as 50%, but pensions, house loan conditions and medical leave are less favorable. However, labor relations are better, there is a new feeling of "belonging" resulting in less loitering and absenteeism, and incentive bonuses have been established. A new work culture prevails and this is a very significant achievement.

Cost of maintenance and administration have gone down at an annual rate of 18.4%. This compares with an annual average rate of increase of 0.2% before privatization. The monetary impact of the devolution process is summarized below.

KELANG CONTAINER TERMINAL
DISTRIBUTIONAL IMPACT STATEMENT 1986-1990
(in million US \$ 1985 present value)

<u>Source of gains/losses</u>	<u>Gains/Losses from Privatizing</u>
I. DOMESTIC CONSUMERS	
Improved service	2.3
GOVERNMENT	
Taxes	27.3
Profits from direct operations	-15.1
Share sales	1.9
SHAREHOLDERS	
Profit	3.9
LABOR	
Increases in salaries	2.3
COMPETITORS	
Loss of traffic by other local terminals	-4.0
Sub Total	18.6
II. FOREIGN CONSUMERS	
Improved services	1.0
SHAREHOLDERS	
Profits	1.0
COMPETITORS	
Loss of traffic	-1.0
Sub Total	1.0
GRAND TOTAL	19.6

Source: A. Galal, L. Jones, P. Tandon and I. Vogelsang, *Welfare Consequences of Selling Public Enterprises*, World Bank, 1992.

63. Conditions of contract. Performance criteria should be included for concessions/leases of operators. They may include profit sharing arrangements with the Port Trusts. If facilities are in competition, the operator should be free to set the level of charges, and proposals in that respect included in the offer of each bidder. In the case of a monopoly, a maximum tariff with adjustment clause should be set based on the fair return principle. As for labor, there is a direct relation between the rationalization of port labor reviewed above and the devolution to the private sector of some port activities.

64. Present Status of Private Sector Involvement. There is at present, in Indian ports, a healthy dialogue on the issue of private involvement. It is the GOI's position that the economic reforms initiated in recent years, which involve a much greater private sector participation to development, are irreversible. All ports have identified facilities to be leased out to private parties. The stated policy¹⁰ is that (i) the Ministry of Surface Transport takes the lead in developing a receptive atmosphere for the privatization of key port facilities; (ii) rules and regulations are being relaxed, systems upgraded, and procedures simplified; (iii) charges to be levied for services that are to be provided by the private operators would need to be within limits determined by Government; (iv) existing labour laws will apply; and (v) there will be no standard model, privatization depending largely of the requirements of each specific mode or sub-sector. Workshops have been held with and without international and foreign participation, and a consensus is being formulated. Privatization of management takes place while keeping public (trustees) the property of assets. Main consideration in deciding on the privatization of segments of the port industry would be i) the attractiveness of the rate of return offered by private parties to ports on the leased assets and ii) assurances of no-retrenchment of labor for an agreed period of time. This is an indication of a move towards a more open port management policy and the outline of a strategy. This trend is confirmed by i) the on-going study on *Policy Reforms in the Indian ports and Shipping Sector*, commissioned by MOST with Asian Development Bank financing and conducted by TecEcon of London and Hong Kong; and ii) the preparation, by the World Bank, on request by GOI, of terms of reference for technical assistance for preparation of tender documents and guidelines for private sector involvement in port operations and development, to be financed by the Dutch Government. But it remains that tender documents for the contracting out of operations at JNPT, which the Bank reviewed, have been prepared in late 1993 and that, over the last year, no decision has been taken for their issuing to national or international competition. The issuance of these documents and the start of the procurement process would send an important signal to the port and shipping community as to the firmness of the declared policy of Government.

65. Actual achievements are as follows:

(a) As of early 1992, in *Bombay*, parts of the dock estate have been allocated for the stacking and storage of containers for specific operators or ship's agents. They operate with either port equipment or their own, and employ either their own permanent staff or dock workers. President Lines of the U.S. has been allocated the use of a dedicated berth.

(b) In *Nhava Sheva*, JNPT leased its tugboats to a private operator, licensed a public sector company to operate the container destuffing station and leased land to a private industry for the setting up of storage facilities for liquid bulk cargo. JNPT has also invited private bids for the provision of additional equipment for the container terminal as well as for the construction of an additional container yard and warehousing space. One bid has been received.

^{10/} See *Chartering a New Course*, Ministry of Surface Transport, 1994 *booklet for the use of private sector investors).

- (c) At *Calcutta*, memoranda of understanding were signed with the Steel Authority of India and with Tata Industries for the operations of bulk terminals.
- (d) At *Cochin*, the Port Trust has invited bids for establishing a transshipment container terminal. The Port Trust would act as landlord providing the infrastructure, with the private sector providing equipment and performing operations. The same Port Trust is seeking investors to develop a floating dock and ship repair project.
- (e) Other schemes for private sector participation, in the form of leasing of land, allocation of berths, license to create dedicated port facilities and/or industrial facilities such as ship repair yards are being developed in *Kandla*, *Madras*, *Tuticorin* and other trust ports.
- (f) Inland container depots (ICD) currently operated by public sector companies have been recently opened to the private sector.

Conditions of contract for third party operations at berths owned by the Port Trusts show that the process is on the right path and Indian Port Trusts should adjust satisfactorily to a new policy associating the private sector to port operations. The lease contract for the steel company SAIL at Calcutta/Haldia is for 10 years with a possible extension of an additional 5 years. The lessee will provide all cargo handling equipment and will conduct operations with its own labor. The public interest is protected by a minimum output clause and rules regarding priority berthing. There is also a productivity clause in the contract with TISCO, a private steel company at Haldia, and a clause giving access to the berth by other users when TISCO does not use it. One may have reservations about a standard long-term lease for berths at Calcutta. On one hand, the conditions are too restrictive concerning the compulsory use of dock labor and concerning tariffs. On the other, the minimum annual throughput is too low, not encouraging increases in productivity.

III. FINANCE

A. Financial Performance

66. Consolidated Results and Results. Based on the 1993/1994 financial records, the Port Trusts, as a group, show a return of 21.51% on net fixed assets at historical cost, which is significant of an inadequate depreciation schedule. The net return on capital employed was 18.8.0%. Capital employed was in the form of GOI loans at 25% and 14% from inter-port loans. The four ports of Bombay, Calcutta-Haldia, JNPT and Madras were reviewed in detail. They account for 59% of capital employed by the Port Trusts and 66% of their revenue, compared to 68% and 74% respectively in 1991/1992, indicating a healthy redistribution of traffic between port trusts. Their income statements and balance sheets for 1993/1994 are summarized in Tables G and H. Some of the figures are still tentative as the accounts have not yet been audited. The figures are generally favorable, but a detailed analysis of the income statements and of the balance sheets of the different ports leads to some qualification.

Table G

1993/1994 INCOME STATEMENTS OF BOMBAY, CALCUTTA, JNPT AND MADRAS
(in Rs billion)

	<u>Bombay</u>	<u>Calcutta</u>	<u>Madras</u>	<u>JNPT</u>
Gross Income 1/	4.891	4.132	3.013	1.243
Working Expenses 2/	2.935	3.124	1.483	0.462
Cash Generation	1.956	1.008	1.530	0.781
Depreciation/Provisions	0.130	0.094	0.010	0.322
Financial Charges	0.000	0.145	0.062	0.346
NET RESULTS	1.825	0.769	1.458	0.113
of which, Financial Income	0.541	0.101	0.781	0.208
Retained earnings to:				
Reserves for add. depreciation, modernization, replacement	1.133		0.300	0.070
Res. for debt amortization	0.550	0.246	0.029	0.010
Other reserves	0.143	0.523	1.129	0.033
Balance	1.825	0.769	1.458	0.113

1/ For Calcutta, includes subsidy for dredging of 0.410 Rs. billion.

2/ For Bombay, includes staff pensions and bonus contribution of 0.86 Rs billion.

Table H

1993/1994 BALANCE SHEETS OF BOMBAY, CALCUTTA, JNPT AND MADRAS
(in Rs billion)

	<u>Bombay</u>	<u>Calcutta</u>	<u>Madras</u>	<u>JNPT</u>
Fixed Assets	2.314	9.285	3.636	10.062
Investments	17.176	0.100	1.329	1.539
Current Assets	4.758	3.350	0.236	0.363
Cash and Banks	0.097	0.943	5.451	0.327
TOTAL ASSETS	24.345	13.678	10.652	12.291
Equity and Reserves	17.175	5.638	5.766	0.624
Provisions	5.519	0.893	3.480	1.410
Long-term Debt	0.000	5.252	1.015	9.904
Current Liabilities	1.651	1.895	0.391	0.353
TOTAL LIABILITIES	24.345	13.678	10.652	12.291

67. Structure of Revenue. Sizeable revenue (60% or more of total revenue) derive from cargo handling and storage. But two important qualifications are necessary.

(a) Included in this revenue are, in some ports, substantial amounts from demurrage on cargo stored for long periods on port premises. This is in fact an unmistakable sign of inefficiencies in the trade and transport system (voluntary storage because no alternative storage is available, bottlenecks in land transportation, problems of import licenses, cash flow problems of importing firms, etc.), from which the Port Trust derive a rent. It is also typical of the absence of economic signals issued by a less than adequate tariff structure. In that respect, adequate operating surpluses and good rates of return are not signs of good economic management: quite the contrary. Improved port operations would result in reduced revenue.

(b) In Net revenue from cargo handling and storage, charged to cargo consignees and shippers, is inflated because of low depreciation allowances. The real costs are not reflected in the accounts. Even so, it is clear that this is a profitable activity; from 1987 to 1993, revenue on this account, and for the main port trusts, was 7.5 billion Rs against 3.3 billion Rs in expenses.

68. Port and dock charges, charged to ships cover direct costs of port and dock facilities, but in much modest scale than cargo handling and storage charges. Over six years from 1987 to 1993, total revenue was 1.5 billion Rs, expenses being 1.3 billion Rs. An adequate depreciation schedule would probably demonstrate that these services are operated at a loss, and that the bulk of port costs is charged to cargo. This is not unusual in service ports such as Indian ports, but may introduce severe economic distortions. Contribution of real estate revenue to surpluses is disappointing. It reaches 6.5% of total revenue in Calcutta, and is barely positive or negative in all other ports.

69. Structure of Expenses. Wages and salaries are a major cost component in all the ports, accounting for 52% to 66% of operating expenditures, except in the case of JNPT. That percentage, however, has been declining over recent years. As mentioned above, depreciation is underestimated and thus the cost of capital. But since wages in the short- or medium-term may to a large extent remain a fixed cost to the ports, they have little to gain financially from investments or other measures that reduce the need for labor. Any major effort which requires additional investment to improve labor performance will tend, in the short-run, to increase costs more than it will boost revenue. However, this results because the high costs of the present less than optimal performance to the economy (para 26) are not internalized in the port accounts.

70. The relatively affluent situation of the selected ports, as suggested by their consolidated high profitability, high level of financial investment, and low level of indebtedness is confirmed by the fact that their liquidities (cash plus other financial deposits) represent about two years of turnover in 1992. But the net final results would be flat or negative if adequate levels of investments and depreciation were undertaken and financial income eliminated. The present apparently sound financial situation of the Port Trusts rests on a paradox. Because they do not pay taxes or dividends, they can invest in government securities, which amounts to lending to their tax creditor and sole shareholder. But it is fair to point out that the accumulation of financial reserves for future investments is for the Port Trusts the only way to compensate for the absence of cash flow due to an inadequate depreciation allowance.

71. Capital Assets. Most ports show relatively high values of depreciated capital as a percentage of original cost (from 68% to 77% in Bombay, Calcutta, Haldia and Madras). But depreciation is straight line at 3% annually without consideration of inflation, which greatly distorts the figures. The use of the original cost for assets valuation when the rate of inflation has been approximately 9% during the last ten years, reduces significantly the usefulness of the capital accounts as a source of information on the real value of capital assets being employed by the respective ports. A proper assessment of capital assets would require a physical inventory and revaluation at current prices. It should take into account obsolescence, because some outdated assets, even not fully depreciated, may have no real value left.

B. Performance of Individual Ports

72. The financial performance of the major ports depends on: (a) the cost effectiveness of operations, which can be measured by the working ratio of each port; and (b) the rotation of fixed assets, or turnover ratio. These and other significant indicators appear in Table I for the four ports of Bombay, Calcutta, JNPT and Madras.

Table I
FINANCIAL INDICATORS OF MAIN PORT TRUSTS, 1993/1994

	<u>Bombay</u>	<u>Calcutta</u>	<u>Madras</u>	<u>JNPT</u>
Working ratio	0.60	0.76	0.49	0.37
Working ratio, operations 1/	0.49	0.73	0.23	0.20
Debt/Equity	1.27	0.24		16.43
Equity Ratio	0.71	0.41	0.54	0.05
Debt Ratio	0.07	0.52	0.13	0.83
Return on net fixed assets	78.88%	8.28%	40.10%	1.12%
Current Ratio	2.94	2.27	14.54	1.95
Fixed assets turnover 1/	2.11	0.45	0.83	0.12

1/ Financial assets and income, and subsidies, not included

73. Two working ratios have been presented, the second one being more significant of typical operations of a service port. The working ratios differentiate clearly the capital intensive modern ports with comparatively low working ratio (JNPT, with working ratios of 0.20 or 0.37) from the older labor intensive ports with a higher working ratio (Bombay, Calcutta, with a working ratio included between 0.49 and 0.76). In each port, the determining factor is the share of labor cost in working expenditures. In that respect, Madras performs better than Bombay.

74. Bombay has 71% of its total assets invested, mostly in GOI securities which yield an annual return of about 8%. The port, like Calcutta, still suffers from an excessively large labor force, with labor costs absorbing 55% of its revenue compared to 52% in Calcutta and 44% in Madras.

75. The rotation of fixed assets measures their utilization. The older ports clearly have a higher rotation of 0.83 (Madras) to 2.11 (Bombay) while the more recent ports have a rotation of 0.12 (JNPT) to 0.35 (Haldia, reported here together with Calcutta). In terms of overall financial performance, the advantage of a lower working ratio in the more recent ports has been insufficient to offset the additional ownership costs of capital intensive installations. After revaluation of the depreciation allowance, the ports of Haldia and maybe JNPT have a lower or negative net result, while the older ports have a positive result (with the possible exception of Calcutta). The poorer performance of the more recent ports very likely originates in the insufficient utilization of existing capacities, because of insufficient traffic and/or low port productivity, a situation likely to change if productivity continues to improve. Among the older ports, Calcutta has clearly a negative net result of about Rs. 360 million excluding government subsidies, mainly due to its higher labor costs. The situation would be worse if GOI did not finance maintenance dredging. In terms of accumulated financial reserves, the port of Bombay has accumulated Rs. 17.2 billion of financial investments, of which Rs. 5.0 billion are inter-port long-term loans (mainly to JNPT), other investments being in bonds of public sector institutions in units of the Unit Trust of India. Madras has accumulated financial investments up to Rs. 1.3 billion and increasing rapidly.

76. JNPT. From the start, JNPT was undercapitalized. It was financed up to 98% from long-term loans, half of which came from the Government (including the proceeds of World Bank Loan 2387-IN), and the other half from the ports of Bombay and Kandla. This unbalanced financial structure requires an annual debt service of about Rs. 2.0 billion after the expiration of the grace period on the major loans, post 1992/93. Even under optimistic traffic projections, the port will be unable to service this debt.

Restructuring is necessary to achieve a debt-to-equity ratio of 50/50 or 60/40 at most, as is normal for a port, and as was foreseen at the time of the project preparation. About Rs. 1 billion of long-term government loans should be converted into equity. Originally, loans from one port to another were not intended to be equity participation, and as such should not be affected by the conversion. It is not in principle unthinkable that other ports might be shareholders of JNPT, but this would necessitate changes in the present legislation, since the Port Trusts have no share capital. Until JNPT's financial situation improves, this would affect these ports' finances negatively.

77. The overall picture is that: (a) two ports clearly have financial surpluses (Bombay - with some qualification regarding the source of its surplus - and increasingly, Madras); (b) Haldia has the potential to become profitable, providing its installations are fully utilized; (c), Calcutta is not profitable with little prospects for improvements because of its structurally higher operating cost; and (d) JNPT is a special case.

C. Financing of Capital Investments

78. Past Policy. Before the commencement of the First Five Year Plan (1951-56) and except during the immediate post-war period, the Port Trusts had been financing their capital expenditure either from their revenue surpluses or from loans raised from the open market. So that the Port Trusts would not compete with any level of the government in the marketplace, it was thought expedient, starting with the First Plan, that part of the capital expenditure should, in the context of the Plan, be provided as loans from GOI at concessional rates of interest, for long periods and with generous grace periods. The practice of loans between ports, on MOST's instructions, became widespread. This apparently slowly eroded the financial accountability of Port Trusts, with some ports depending heavily on GOI for financing their modernization and development programs. Centralization of financing translated into the financial burden of ports being transferred from users through tariffs to Government through general taxation.

79. Ports Development Fund. The creation of a Ports Development Fund (PDF), managed in New Delhi by a Major Ports Development Board (PDB), has been proposed. The PDB would redistribute financial resources from the different ports, and absorb the financial surpluses of successful ports, as non-refundable contributions bearing a statutory interest. Such a scheme is likely to have the same impact as inter-port loans: it would discourage successful ports from ever generating surpluses, while encouraging other ports to maintain their deficits. Ports will lobby for financing of their projects as long as there will be money left in the Fund. If individual Port Trusts generate surpluses beyond what is necessary to renew their facilities and finance their development, GOI, as the ultimate owner can either require them to pay a dividend, whose proceeds Government will assign as it seems fit (including but not limited to port investments), or require them to reduce their tariffs. Investments should be financed from retained earnings, from equity contributions (not subsidies) and from loans raised in the marketplace. The argument has been raised that some major port investments may not attract financing because they are not commercially attractive. This may be true of some projects, and each case has to be judged on its own merits. But there is no economic argument in favor of an overall compensation of resources between ports.

80. Financial Capacity. The capital investment financing policy and financial structure reflect the profitability of the major ports. Prior to the opening of JNPT, internally generated funds typically financed 65% to 100% of capital investments. JNPT's construction temporarily lowered this ratio to 33% in 1990 and 13% in 1991. However, the financing structure of this new port was a temporary arrange-

ment and is expected to be revised shortly. The group's low level of indebtedness is reflected in its debt to equity ratio which is 32:68 excluding JNPT, and still 43:57 including JNPT prior to the envisaged financial restructuring. But this low a debt:equity ratio is also due to the inadequacy of the rehabilitation and modernization of the ports (para 64 and 81). Overall, the sub-sector strong financial structure and borrowing capacity is reflected in its debt service coverage well above 2, even including JNPT.

81. Inadequacy of Levels of Capital Investments. Over the past five years, capital investment in existing major ports has been low, averaging Rs. 300 to 500 million (US\$15 to 20 million) for replacement, modernization and expansion of existing ports. The only major investment was the construction of JNPT. This low level of replacement and modernization investment was substantially below operational and technical requirements as demonstrated by the dilapidated state of many facilities. There is no shortage of funds in the sector, as simultaneously, the ports' financial investments in various financial instruments (government and state bonds, fixed-term deposits, etc.) increased from Rs. 600 million in 1987 to more than Rs. 1,600 million in 1991. For the four main ports reviewed here, the VIIth Five Year Plan provided investment allocations of some Rs. 6590 million while actual expenditures were only 42% of the allocation, ranging from 75% in the case of Madras to a low of 30% for Bombay. Delays at all levels of the procurement process seem to be the main reason for slow commitment and disbursement (paras 44 and 46). This level of investment is especially low, considering that GOI generally cuts the ports' investment proposals. It gives the exact measure of the Port Trusts' apparent financial prosperity, which is somewhat artificial, given the obsolescence and the poor condition of many of their facilities, which balance sheets do not reflect.

D. Accounting and Budgeting

82. The ports' accounting systems are different from accepted financial practices in the industrial sector; they fall mid-way between an administrative system and a commercial system. The financial reporting formats and underlying accounting rules vary from port to port. More recent ports such as JNPT use systems very similar to industrial financial accounting, and ports such as Calcutta utilize systems inspired by administrative practices. There is no centralized cash management system. Cash is managed through various separated accounts, each with a specific purpose, and being operated according to specific administrative rules. Gross fixed assets are not periodically revalued (some of them are one hundred years old or more), and annual depreciation allowances are not based on the estimated economic life of an asset, but arbitrarily as a complement to the various appropriations in the different Funds and Special Accounts. Overall, the system is designed for the calculation of cash generated after debt servicing, which is then transferred to the Investment and Capital Management Account. The main weakness of this approach is that it does not permit the introduction of an economically meaningful cost accounting system, and it is hardly compatible with the autonomous management of capital investment. The GOI is at present considering a modernization and unification of the accounting system, on the model used at JNPT.

83. Budgeting and financial control are closer to the practices of a Government agency than to a commercial enterprise. Budgets are not used to monitor expenditures and to analyze the causes of variances from estimates. The concept of treating each ship's call as a unit for costing and revenue, and monitoring the balance is not used nor does the present accounting system easily allow for it to be introduced. There are no profit centers nor is there internal pricing of services. Annual financial objectives are not monitored throughout the year. Basically, all the ports need strengthening of financial management and financial controls. Generally, their financial autonomy is severely limited, which does not stimulate financial performance nor encourage financial efficiency and accountability.

E. Tariffs

84. The overall level of port authority tariffs is modest. For example, the average port charge (pilotage, mooring, towage, wharfage, etc.) levied by Port Trusts is at present some 2% of the total throughport bill for containers of 12 to 24 tons, loaded or unloaded; stevedoring, forwarding and handling make up 98% of the bill (para 22). It is not clear therefore, why, at GOI level, tariff adjustments apparently raise so many objections. The 1985 Major Ports Reform Committee proposed guidelines on the setting of tariffs, but these have not been translated into statutory rules. MPRC considered that the actual rates should be set between marginal cost and what the traffic can bear. Some other factors had to be taken into consideration, such as the preferential treatment of certain commodities in certain periods, or the monopolistic position of ports, which called for restraint in tariff fixing.

85. Tariffs are not cost related because cost data is lacking. They cannot therefore give the right signals and encourage efficiency. As shown in Tables D and E, ship tariffs are generally higher in Indian ports than in other ports of the region. It is likely, however, that turn-around time and associated costs for shipowners, are more important issues than the level of tariffs. Breakbulk cargo is charged ad valorem, other cargo on the basis of weight and sometimes of volume. Bulk, specially oil products, may be over-charged. This may explain why surplus ports are those with a significant bulk and oil traffic. Under the present tariff structure, there is a clear imbalance between ports with a financial surplus (Bombay, Madras) and the other ports which run a deficit or hardly break-even. Under the present system, each port sets its tariffs in agreement with MOST, with a reference to the tariffs of other major ports, particularly if there is an element of competition. The tariffs for leasing real estate are certainly too low. A comprehensive review of the tariff setting policy by category of traffic is needed to avoid the appropriation of large rents by situation of certain ports with specific commodities and to make sure that the tariff structure encourages the efficient use of scarce resources.

IV. FRAMEWORK FOR REFORM AND RECOMMENDATIONS

A. Rationale for Reform

86. The Indian System of Port Administration. Indian port administration rests on two principles: (a) large ports are designated as *Port Trusts* which means that they are in trust from the GOI to their managers; and (b) ports are to be operated by their managers, in the public interest. The public interest for a service industry such as ports should be the optimal use of the economic and human resources which ports are using. Any sub-optimal use would mean that the trust mandate is not fully executed.

87. Overall Diagnosis. The diagnosis at present is that the use of resources is sub-optimal. The overall picture that emerges from the analysis of the current situation of the major ports in India, is one of a system which, despite improvements in productivity in recent years and the efforts of its management and of GOI, has neither kept pace with the changing demands of international trade, nor with the technological and structural revolution in the transport sector. From within a confined Indian perspective the inadequate response from the logistics chain in general and from the ports in particular, may not be fully appreciated. However, when comparing the performance of the Indian ports with ports world-wide, the shortcomings in managerial effectiveness, operational efficiency and facilities as well as the institutional framework become evident. In 1985, the MPRC acknowledged the weaknesses of the Indian Ports System. There had been earlier studies, such as the 1982 Study of the Ten Major Ports by the Bureau of Industrial Costs and Prices, and the detailed reports of the Port Planning Group. All, within their respective terms of reference, made statements, presented suggestions or issued recommendations for change. Too few have since been implemented, not only because of dock labor's resistance, but also because of the difficulty of coming to grips with the need for change. Neither government nor users obtain the quality of services that they could expect. The autonomy of the Port Trusts is unnecessarily eroded. Excellent staff and devoted civil servants are frustrated. Economic losses result, and well established rent situations are factors of social injustice.

B. Strategy of Reform

88. General. Ports are basically public service utilities. They will remain statutory bodies under government control. However, this does not mean that they should continue to perform all the operational tasks that they currently perform, nor that control should remain what it is now. Neither the present organization of operations nor this tight control permit reaching optimal use of resources. In addition, the port policies need to reflect the deep changes taking place as India is moving towards a more open economy. The objectives of the VIIIth Plan reflect a new economic approach: (a) public investment is to be limited to the infrastructure necessary to facilitate growth and development; (b) Government agencies are to concentrate on regulating the long-term interests of society; (c) the principle of market economy should be the main operative principle; and (d) private initiative in the provision and operation of infrastructure is to be encouraged.

89. Achievement of Objectives. A six-point strategy is proposed to achieve the objectives of increasing productivity and of implementing the new government economic policy.

- (1) *Policy* orientation plus operational, economic, financial and other *objectives* of ports should be formulated via legal instruments in terms which provide policy and operational guidance to

managers and permit monitoring and reporting. Increase in productivity must be the basic objective. Management and other parties should be able to assess the Port Trust's performance. Port Trusts should be required to produce corporate plans annually. In 1994, the GOI initiated a procedure of Memoranda of Understanding (MOU) with the port trusts, by which port trusts and the government agree on objectives and performances for the year(s) to come. These MOU stress the improvement of performance indicators.

(2) The sense of *responsibility* of managers must be developed through increased *delegation* and more continuity in tenure of senior management. An evolution is needed in the management culture and the approach to supervision. While keeping their typically IAS positive aspects, especially devotion to the public service, management and control need to be more oriented towards economic, financial and social effectiveness and towards quick decision making. This is necessary for any new policy or legislation to be effective, because there is a limit to what changes in policies or legislation, however useful and necessary, can achieve alone. Port Trusts should have the necessary degree of autonomy with ministerial control over major investments, port pricing in accordance with policy guidelines, rates of return and other performance criteria based upon the ministerially approved corporate plan. More professionalism must be introduced in management and recruitment of managers and board members in industry is essential.

(3) *Port operations* need to be reoriented towards an integrated terminal concept. Port Trusts would evolve from service port to landlord ports leasing their facilities to operators. In turn, private operators should invest in facilities, equipment and training. They should operate under licenses and conditions set by the Port Trusts. Competition must be the rule whenever possible. Again, productivity increases must be the objective.

(4) *Labor and Staffing*. Labor and staffing reform is the key to improving the performance of Indian ports. The distinction between ship and shore work is incompatible with the terminal concept. Gangs are to be integrated to obtain maximum flexibility in manning, and the number of sub-schemes should be reduced, with a view to increase productivity. No reform can be conducted without cooperation from labor. Labor's rights need to be respected and financial incentives provided for change including attrition.

(5) The objectives of *financial management* and of tariffs and accounting systems are not only to establish the ports on a sound financial basis, but also to encourage the optimum use of economic and other resources. The structure of tariffs and the accounting systems must be revised accordingly.

(6) Advancing up-front in the whole of the Indian port system would be risky. The strategy should therefore be applied in *one or two selected ports*, not automatically everywhere at once. This will permit testing and fine tuning of the measures to be applied before addressing the major issues at larger ports.

90. The principles for reform do not upset the traditional institutional framework and are in line with more than one century of evolution of Indian port law towards increased accountability and autonomy. Significantly, MOST has already, in 1991, instructed the Port Trusts to formulate financial and corporate objectives, and apparently has to fight some inertia in that respect. Some of the reforms can be carried out by ministerial or cabinet decisions, but the basic changes will require Parliament's intervention. More important is the necessary evolution of attitudes and practices.

C. Recommendations

Recommendation 1: Legislation

91. Proposed Changes in Legislation. It is recommended to modify the present legal instruments governing Port Trusts as follows.

92. Port Trusts Jurisdiction. The Port Trusts should plan port facilities, provide infrastructure, monitor the functioning of the port, perform quasi governmental duties such as conservancy, and administer the policies relating to the services to be provided by the private sector. Under proper conditions of licensing, any facility, service or activity can be built, leased and/or operated by third parties within port premises, alone or associated with the port authority. This will legally open the way to an increased role of the private sector and, especially, to a greater participation of port users in the cost and risk of financing and operating port facilities, for the relief of the public purse. Dedicated projects, schemes or facilities to be used by a single operator should be financed entirely by the agency or operator concerned, who would be responsible for the operating losses, if any, arising out of under-utilization of the facility. As noted earlier, substantial progress is being made in that direction.

93. Port Trusts Basic Objectives. The legislation should cover the strategic, long-term basic objectives of Port Trusts.

(a) The *economic objective* to operate (or to cause to operate) the ports in the best possible level of economic and service conditions, for the satisfaction of users and the benefit of the country and of its maritime commerce. This will place productivity, level of service and economic return as the basic goals of the port agency.

(b) The *financial objective* consists of two categories.

(i) As outlined above, they need a *permanent* framework of financial policy to be formulated in their statutory legislation. A sound financial policy would be for them to: (a) earn a proper return on their revenue earning assets, (b) pay taxes on any of their activities which, if performed by private parties, would be subject to taxation; (c) service their debt; (d) finance from self-generated resources a substantial part of their new investments; (e) participate financially in port-related investments; (f) pay a dividend on capital invested by GOI in revenue-earning assets, even if this is implemented with flexibility; and (g) keep their books in accordance with internationally accepted accounting standards.

(ii) Based on the above, they need, from time to time, to be assigned *variable* objectives. This could be, for example, for the period of the Plan. These temporary objectives would be quantified in terms of rate of return, debt service coverage, debt-to-equity ratio, dividend to government, allocation of surpluses, etc. Specific financial objectives will encourage ports to look in detail into their sources of revenues and into their expenses. Estate revenue, for example, could be much higher than at present, but there is no clear financial policy regarding real estate.

(c) *Tariff objectives* should be fixed according to the economic and financial ones. They should be set as a maximum, so ports can accommodate the different needs of clients and negotiate with them freely. Maximum tariffs should also be set for terminals run by the private sector.

Based on the legal objectives, each port should set its corporate objectives for the fiscal year and for the Plan period, which GOI would approve. The Port Trusts would be assessed on the basis of performance in relation to objectives. The special case of the finances of JNPT need to be mentioned here. An objective should be to restructure its capital so as to reduce its debt service, by transforming part of the debt in equity.

94. Monitoring of Port Management by GOI. The system of control should be effective, efficient and fast. The legislation should make distinction between (a) decisions by the Trust board which are immediately implemented, with or without reporting to GOI; (b) decisions which are submitted to GOI, and are implemented on a non-objection basis; (c) decisions requiring formal approval; and (d) reports on performance. Decisions requiring formal approval are likely to be few, because the annual budget, and quantified objectives agreed upon between GOI and the Port Trusts should constitute the framework within which the agency will conduct its affairs. Specifically, given the large representation of GOI on the Board of Trustees, budget approval should be among the implicit decisions. After budget approval, no other authorization should be necessary for borrowing or for appropriations. The threshold for approval of contracts by GOI should be increased. Lastly, MOST needs to increase the role of industry professionals in the monitoring of the port sector. On the other, a National Port Advisory Board may be something to be considered. Such boards exist in other countries and play a useful role since they permit users to express their views while not permitting special interests to influence the decision-making process, since the Board would be purely advisory. It could work in cooperation with the India Ports Association, which already plays a useful role of information, training and dissemination of professional knowledge.

95. Trust Boards. The *Board of Management*, formed by the heads of departments of the Port Trusts should become statutory. The Board of Trustees would delegate tasks to the Board of Management and its meetings would be less frequent than at present, while the scope of its jurisdiction would be upgraded. Officers should be appointed by the Board of Trustees and lower grade staff by the Board of Management.

96. Chairman and Deputy Chairman. The present system of IAS recruitment is frustrating for port professionals. There are advantages in the employment, as chairmen, of senior civil servants whose qualities of management and diplomacy, and capacity for planning may be more necessary than the detailed knowledge of all aspects of port operations. However, to be effective and accepted they must have the long-term development of ports, in all its many facets, as their primary goal, rather than their career as senior civil servants. A mixed solution is therefore recommended for consideration. First, Chairmen should increasingly be recruited among ports/shipping professionals; in 1994, two trust ports only, among the most modest in traffic, have port professionals as chairmen. Second, the position of Deputy Chairman, recruited only among professionals of the port industry should be upgraded, with increased possibility of acceding to the position of Chairman. The Chairman should take over major policy orientation functions (planning) and supervisory tasks (audit) and, for the rest, act through a General Manager (Deputy Chairman) and the Board of Management.

Recommendation 2: Planning

97. The planning process rests on sound principles, but needs to be modernized, reoriented and sped up. Its present review by the Committee established in MOST (para. 39) is a step in the right direction. It also should be cleared of minor issues which can be solved at port level, and to include more implicit rather than explicit approvals. There are three basic principles on which the reform of planning should rest.

(a) GOI retains its prerogatives regarding the national port policy to which ports need to adhere: the total level of funding, the economic and financial criteria for projects, the time-table for planning, the evaluation of port proposals and the assignment of planning responsibilities to the individual ports.

(b) All projects need to be appraised in a consistent and uniform manner, regardless of their aim (development, rehabilitation, etc.).

(c) Project planning is decentralized at port's level with increased autonomy regarding rehabilitation of facilities.

98. It is recommended:

(a) to give more freedom to ports regarding their renewal of equipment and investment decisions below a given amount, within the limits of their approved budget;

(b) speed up the procedure for all backlogs of maintenance and rehabilitation, which have reached a high level;

(c) at port level, to develop the planning capacity beyond the engineering tasks, with ports pooling their resources to prepare projects to avoid having appraisal teams lying idle when there are no projects to prepare; and

(d) to staff MOST with an office of port professionals, who would form the nucleus of a small Bureau of Port Planning, whose composition should be very flexible, with the possibility of calling for consultation on specific plans and projects, any professional, user, industry, etc. interested in port development. The Bureau of Port Planning would issue recommendations to GOI regarding port investments, without having a power of decision.

Recommendation 3: Port Labor and Staffing

99. Taking due consideration for the present changes in staffing policies (voluntary retirement schemes, etc), the following is recommended:

(a) restructuring pay scales of Port Trusts and dock labor with systems of incentives coupled with revision of productivity norms, elimination of restrictive practices and in a perspective of rationalization of staffing;

(b) revision of labor categories with a view to develop the integrated gang;

- (c) design of a safety net for workers to be discharged;
- (d) restructuring pay scales of Port Trusts' employees with a view to encouraging qualified professionals to join the Port Trusts;
- (e) study of the composition, role, organization, staffing and jurisdiction of a national port cadre: the proposal of which is indeed sound, but conditions have to be attractive to defuse the existing resistances;
- (f) introduction of compulsory training in career paths and elaboration of a systematic training policy for professionals; and
- (g) organization of the personnel and labor function in the Port Trusts.

Recommendation 4: Operation and Involvement of the Private Sector

100. The improved operational results obtained in recent years, the efforts of MOST and of the port trusts to improve labour productivity and relations, and the relatively better performance of smaller ports demonstrate that the issue is less of men than of modernization of organization, facilities and procedures. The following is recommended:

- (a) in the long-term, cargo operations should be transferred, to the extent possible, away from city center berths and long-term planning based on that assumption;
- (b) the existing berths should be either modernized or converted to multi-purpose terminals with rails for quay-side container gantry cranes. They will be converted into container terminals when necessary, and be supplied with a range of equipment capable of handling all forms of unitized cargoes. Given the expected evolution of India's seaborne trade in the next decade and its increasing potential for unitization and carriage in neo-bulk form, the major ports should give much greater attention to the development of multi-purpose facilities and to rehabilitating and re-equipping the more recent general cargo berths;
- (c) operations in each terminal, berth or group of berths need to be integrated, have the same operator in charge of stevedoring, shore-handling, storage and delivery, terminals should be in competition with each other whenever possible; and
- (d) Customs procedures and logistic systems should be rationalized to derive maximum benefit from containerization.

101. **Involvement of the Private Sector**. The following is recommended:

- (a) privatizing in the form of leasing of facilities presently under port or public sector control, such as container terminals, container freight stations and cargo handling equipment. The container terminal at JNPT is likely to be a good candidate; as reported in para. 64, international style tender documents were prepared in January 1994 as a basis for inviting private tenderers for

the operation of the terminal on a transparent basis; however, approval for proceedings with tenders was still pending as of February 1995;

(b) bidding documents, terms of reference and conditions of contract should be prepared for opening to the private sector of shore cargo handling and storage activities (breakbulk and container), in competition with the Port Trusts;

(c) ports should study contracting out work other than day-to-day maintenance and minor repairs to facilities and equipment; and

(d) any plan for privatization of any facility needs to include manpower planning, including planning for staff attrition and compensation.

Recommendation 5: Finance

102. The following is recommended:

(a) design and implement in all ports a purely commercial financial accounting system, which may be closely based on the system developed for JNPT, together with assets inventory and valuation;

(b) a new accounting system setting up and enforcing cost based tariffs;

(c) Port Trusts real estate investment management should be reviewed; and

(d) ports should pay income tax on their commercial activities.

103. The above recommendations take into account the several actions taken in 1994 at the level of individual ports and at the more general level of the Ministry of Surface Transport. Contracting out the operations at JNPT to a professional container terminal operator on a competitive and transparent basis would represent a clear indication of GOI's commitment to improved port performance and to a greater involvement of the private sector.

