MAURITANIA: Guidelines for a Four-year Development Program

International Bank for Reconstruction and Development
MAURITANIA: Guidelines for a Four-year Development Program

Report of a mission organized by the International Bank for Reconstruction and Development at the request of the Islamic Republic of Mauritania

R. M. WESTEBBE, Chief of Mission

International Bank for Reconstruction and Development

NOVEMBER 1968
The present volume is a revised version of a report submitted to the Government of Mauritania in August 1967, based on the findings of the World Bank Mission which visited Mauritania in the spring of 1967 at the request of the Government. The report evaluates the first Four-Year Plan and recommends another four-year program of action, as guidelines for the next Four-Year Plan, which will be prepared by the Mauritanian Government. It presents a short-run program of action and longer term perspectives for each sector. The sectoral programs are coordinated in terms of an overall strategy of development, with a series of general institutional reforms and Government policy measures, designed to make their implementation possible. Finally, an estimate is made of domestic and external financial requirements and availabilities. It is intended that the precise timing of each program or project, as well as its detailed financial requirements and any specific policy measures or related organizational changes which may be needed, should be specified in a series of successive Annual Development Plans through which the next Four-Year Plan would be implemented.

Following the receipt of the technical assistance report the Government of the Islamic Republic of Mauritania announced its acceptance of the broad outlines of the strategy as well as most of the specific proposals recommended by the mission. No attempt has been made in this revised text to enumerate the many policy changes, institutional reforms and basic studies which have occurred or which are under way. Where it was deemed important to assist the reader, revised figures, and in some cases, explanatory notes on selected recent developments have been introduced.

The principal author of this report is Mr. Richard M. Westebbe who was chief of the mission. Important contributions were made by the other members of the mission who also produced the bulk of the technical material which formed the basis for the analysis of the various sectors. In particular, Mustapha Zaanouni, agricultural economist, made a major contribution to the production and organization of the sections on the rural and fisheries sectors. Henri Boumendil was responsible for hydrology, R. Aubray for the basic work on fisheries, J. P. Marty for livestock, Livio Costa for education, Albert Waterston for plan organization, Wilfred Thalwitz and Bernard Siret for transportation and Pierre Chardon for mining. The bulk of the technical material prepared by the mission has been reproduced by the World Bank in Volume II.

Finally, acknowledgment must be made of the full support and cooperation given to the mission by the President of Mauritania, His Excellency Moktar Ould Daddah, members of his cabinet, numerous public servants, and various members of the private sector. Without their help and encouragement this report would have been far more difficult, if not impossible, to produce, and certainly would be much less useful as a contribution to the country's effort to develop itself.

Andrew M. Kamarck
Director
Economics Department
TABLE OF CONTENTS

BASIC DATA........................................................................................................... viii
LIST OF ABBREVIATIONS......................................................................................... xi
SUMMARY OF DEVELOPMENT STRATEGY AND PRINCIPAL RECOMMENDATIONS.. xii
   I. The Strategy.................................................................................................. xii
   II. Principal Recommendations......................................................................... xiv
CHAPTER ONE: INTRODUCTION............................................................................... 1
   A. The Political and Social Structure............................................................... 1
   B. The People and Their Environment............................................................. 3
   C. The Structure of the Economy..................................................................... 6
   I. Objectives.................................................................................................... 13
   II. Evaluation of Results................................................................................... 14
   III. The Conceptual Problem........................................................................... 18
   IV. Administration and Execution................................................................. 25
CHAPTER THREE: A STRATEGY FOR DEVELOPMENT............................................ 26
   I. General Perspectives................................................................................... 26
   II. The Sectoral Perspectives.......................................................................... 27
CHAPTER FOUR: PROGRAM OF ACTION................................................................. 33
   I. The Rural Sector........................................................................................... 33
      A. Recent Developments............................................................................. 33
      B. General Objectives............................................................................... 36
      C. Livestock Development - Objectives and Recommendations.............. 39
      D. The Development of Crop Production - Objectives and
         Recommendations.................................................................................. 45
      E. Forestry - Objectives and Recommendations...................................... 52
   II. Fisheries....................................................................................................... 57
      A. Recent Developments............................................................................. 57
      B. Objectives............................................................................................... 61
      C. Recommendations................................................................................. 62
LIST OF PRINCIPAL TABLES, CHARTS AND MAPS

MAP - Mauritania: Climate and Economic Zones
MAP - Mauritania: Population Density by Administrative Unit

Table 1: Allocation of Investments of the Four-Year Plan 1963-67 20
Table 2: Plan Objectives ........................................ 24
Table 3: Livestock Objectives .................................. 40
Table 4: Livestock Investments ............................ 41
Table 5: Forecast of Annual Crop Production for 1971 ........................... 54
Table 6: Summary Investments and Production ......................... 56
Table 7: Capacity of Fresh Fish Processing Industries at Port Etienne ... 67
Table 8: Estimate of Possible Further Investments in Fisheries... 68

MAP - Former Limit of the Territorial Waters
MAP - New Limit of the Territorial Waters

Table 9: Projected MIFERMA Taxes, Profits and Sales 1966-75....... 73
Table 10: Estimated Contribution of MIFERMA to the Gross Domestic Product and Employment 1966-75 ..................... 74
Table 11: Iron Ore Prices: Swedish 1950-1967 .......................... 75
Table 12: Projected Akjoujt - Taxes, Profits and Sales 1967-88... 82
Table 13: Estimated Contribution of Akjoujt to the Gross Domestic Product 1967-80 ........................................... 83

CHART - Proposed Organization of Planning and Economic Policy-Making 122

Table 14: Consolidated Government Accounts: Expenditures and Source of Financing ..................................... 136
Table 15: Expenditures: Current Budget ................................. 137
Table 16: Current Budget Expenditures by Administrative Categories 138
Table 17: Current Receipts ............................................ 139
Table 18: Current Budget Financing .................................. 140
Table 19: Equipment Budget - Expenditure ............................ 141
Table 20: Equipment Budget - Financing .............................. 142
Table 21: Government Reserve Fund ................................ 143
Table 22: Gross Domestic Product ................................... 145
Table 23: Rural Sector GDP ........................................... 146
BASIC DATA

Area: 1,085,000 square kilometers

Population: 1,040,000 1965
of which: Nomadic 800,000
         Rural Sedentary 160,000
         Urban 80,000

Ethnic Groups:
80% Moors (30-40% black)
20% Negro (diverse tribes)

Rate of Growth:
1.7% (1964-65)

Population Density (per square mile): 2

Political Status: Independent since November 1960

Gross National Product:
(billion CFAF at current market prices)

<table>
<thead>
<tr>
<th></th>
<th>1959</th>
<th>1964</th>
<th>Annual rate of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1</td>
<td>26.9</td>
<td></td>
<td>15.5%</td>
</tr>
</tbody>
</table>

Gross Domestic Product:
(billion CFAF at current market prices)

<table>
<thead>
<tr>
<th></th>
<th>1959</th>
<th>1964</th>
<th>1966</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.5</td>
<td>35.7</td>
<td>41.2</td>
<td></td>
</tr>
</tbody>
</table>

of which: traditional sectors (agriculture, livestock)

<table>
<thead>
<tr>
<th></th>
<th>1959</th>
<th>1964</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3</td>
<td>13.7</td>
<td></td>
<td>15.0</td>
</tr>
<tr>
<td>71%</td>
<td>38%</td>
<td></td>
<td>35%</td>
</tr>
</tbody>
</table>

: mining

- 7.6 11.0
- 21% 27%

1/ provisional figures
Gross Domestic Production at Factor Cost in 1964:
(billion CFAF)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Amount (billion CFAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Handicraft</td>
<td>14.9</td>
</tr>
<tr>
<td>Mining</td>
<td>6.9</td>
</tr>
<tr>
<td>Diverse Industry</td>
<td>.4</td>
</tr>
<tr>
<td>Building</td>
<td>.6</td>
</tr>
<tr>
<td>Transportation</td>
<td>.7</td>
</tr>
<tr>
<td>Services</td>
<td>.5</td>
</tr>
<tr>
<td>Commerce</td>
<td>3.3</td>
</tr>
<tr>
<td>Public Enterprises</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23.8</strong></td>
</tr>
</tbody>
</table>

Percentages of GDP at Market Prices:
(million CFAF)

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Investment</td>
<td>4593</td>
<td>13%</td>
</tr>
<tr>
<td>Gross Domestic Savings</td>
<td>7842</td>
<td>22%</td>
</tr>
<tr>
<td>Balance of Payments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>current account surplus</td>
<td>3249</td>
<td>9%</td>
</tr>
<tr>
<td>Government Current Account</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>4555</td>
<td>13%</td>
</tr>
</tbody>
</table>

Money & Credit

Conversion 1 CFA franc = US$0.004
US$1 = 246.85 CFA francs

Relationship to larger monetary or customs area:

a) Member of the West African Monetary Union
b) Member of the West African Customs Union
c) Associate Member of the European Economic Community

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Money Supply</td>
<td>2910</td>
<td>3467</td>
<td>3% p.a. 20%</td>
</tr>
<tr>
<td>Time &amp; Demand Deposits</td>
<td>1704</td>
<td>2141</td>
<td>80% 26%</td>
</tr>
<tr>
<td>Commercial Bank Credit to the Private Sector</td>
<td>1388</td>
<td>2592</td>
<td>47% 90%</td>
</tr>
</tbody>
</table>

Rate of Change of Prices

European family consumption - 4% (1965-66) 4%
Mauritania family consumption - 6% (1964-65) 1%

2/ Distorted by MIFERMA.
Public Sector Operations:  

<table>
<thead>
<tr>
<th>Budget</th>
<th>1966 Percentage Change</th>
<th>1967</th>
</tr>
</thead>
<tbody>
<tr>
<td>(mil. CFAF)</td>
<td>1961-1966</td>
<td>(mil. CFAF)</td>
</tr>
<tr>
<td>Government Current Receipts</td>
<td>4,735</td>
<td>220%</td>
</tr>
<tr>
<td>Government Current Expenditure</td>
<td>4,409</td>
<td>119%</td>
</tr>
<tr>
<td>Balance</td>
<td>+326</td>
<td>0</td>
</tr>
<tr>
<td>Government Equipment Budget Expenditures</td>
<td>771</td>
<td>530%</td>
</tr>
<tr>
<td>Public Investment Expenditures</td>
<td>1,380</td>
<td></td>
</tr>
</tbody>
</table>

External Public Debt:  

Total debt including undisbursed = $33,733  
Total annual debt service = 3,750  
Debt Service Ratio (over total exports) = 4.9%

Balance of Payments:  

<table>
<thead>
<tr>
<th>1964 (billion CFAF)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total exports (CIF)</td>
<td>16.4</td>
</tr>
<tr>
<td>Total imports (CIF)</td>
<td>12.7</td>
</tr>
<tr>
<td>Trade balance</td>
<td>+3.7</td>
</tr>
<tr>
<td>Non-factor services</td>
<td>-0.3</td>
</tr>
<tr>
<td>Factor payments</td>
<td>-1.0</td>
</tr>
<tr>
<td>Expatriate remittances</td>
<td>-1.8</td>
</tr>
<tr>
<td>Net</td>
<td>-5.4</td>
</tr>
</tbody>
</table>

External Financial Assistance:  

<table>
<thead>
<tr>
<th>Commitments</th>
<th>(CFAF millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-62</td>
<td>3,444</td>
</tr>
<tr>
<td>1963</td>
<td>4,444</td>
</tr>
<tr>
<td>1964</td>
<td>3,738</td>
</tr>
<tr>
<td>1965</td>
<td>2,292</td>
</tr>
<tr>
<td>1966</td>
<td>1,684</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15,602</strong></td>
</tr>
</tbody>
</table>

Total payments (as of Dec. 31, 1966) = 8,591


---

3/ Budget figures represent the final balances or forecasts of budget years and do not reflect cash receipts or expenditures in any given year.
4/ Payments by FAC & FED during 1965.
5/ Excluding $66 million IBRD loan to MIFERMA, guaranteed by the Government of Mauritania.
6/ If MIFERMA service payments are included, total debt service would amount to about 20% of total exports.
7/ Estimate based on 1964 provisional national accounts. Both the export and transfer figures are heavily influenced by MIFERMA.
List of Abbreviations

SEDES - Société d'Études pour le Développement Economique et Social
FAC - Fonds d'Aide et de Coopération
RIM - République Islamique de Mauritanie
SONIMEX - Société Nationale Import-Export
ONTP - Office National de Transport Public
FED - Fonds Européen de Développement
BIAO - Banque Internationale pour l'Afrique Occidentale
BMD - Banque Mauritanienne de Développement
SOMAUPECO - Société Mauritanienne de Pêche et de Conserverie
SOMAF - Société Mauritanienne d'Armement à la Pêche
SOMIF - Société Mauritanienne des Industries de la Pêche
SCAM - Société des Chantiers et Ateliers de Mauritanie
SIOP - Société Industrielle de Grande Pêche
IMAPEC - Industrie Mauritanienne de Pêche
EGA - Entreprise Générale de l'Atlantique
SOMIMA - Société Minière de Mauritanie
EIB - European Investment Bank
IBRD - International Bank for Reconstruction and Development
IFC - International Finance Corporation
IDA - International Development Association
MIFERMA - Mines de Fer de Mauritanie
MICUMA - Société des Mines de Cuivre de Mauritanie
BRGM - Bureau de Recherches Géologiques et Minières

ha. - hectares
T. - tons
p.m. - pour memoire
I. The Strategy

1. The strategy of development proposed for the next four years by the Mission is based on our analysis of the structure of the economy, the technical possibilities for change and the resources likely to be available for investment.

2. Our strategy assumes that the basic objective of development is to increase the economic well-being of the bulk of the population. This approach does not deny the desirability or even the necessity of expenditures for welfare, culture or national sovereignty. Rather it is based on the proposition that in a poor country like Mauritania such expenditures will inevitably be limited, and that the best way of providing for non-economic needs is to increase economic resources so that in the future adequate amounts will be available for such purposes.

3. The economy of Mauritania is strongly dual in character. The traditional livestock and agricultural sectors yield little more than subsistence standards of living for 90% of the population. Some four-fifths of the entire population consists of Moors who are largely nomadic livestock herders. The balance of the subsistence type of population consists of various negro tribal groups who live close to the Senegal River and who produce mainly millet, using primitive methods.

4. The modern sector at present consists primarily of the MIFERMA iron ore mines in the Northwest and the developing fishing industry of Port- Etienne. By their very nature these enclave industries can have only a limited direct influence on the development process in the rest of the country. They employ few people, provide limited markets for internal products and use a technology not readily transferable to the traditional sectors. The enclaves produce a large volume of exports, but only a small amount of foreign exchange receipts. The iron mines do contribute over a fourth of current budget receipts in the form of export levies and taxes, but even this addition to public savings is not enough to influence the development of the rest of the country. Even the prospective development of the copper mines at Akjoujt will produce no appreciable benefit to the State budget for some time.

5. The basic development strategy evolved by the Mission is to raise output in the livestock and crop agricultural sectors. Our technical findings in livestock and agriculture show that large short-run gains in the output of both meat and millet appear to be eminently possible as a result of both productivity gains and the use of presently unused pasture and crop land. The program requires relatively modest investments in training and equipment, such as animal drawn plows, as well as the creation of farmers' associations, the availability of credit, sanitation and the more rational use of pastures. A substantial effort will be required in setting up an agricultural extension system to introduce and foster the changes proposed.
6. With limited population growth the gains in output should be reflected in significant rises in per capita incomes, import substitution of millet and increased exports of meat and animal products. The program proposed does not involve a sharp break with traditional practices and should accordingly be more acceptable to producers than a program based on the sudden introduction of modern techniques. One important result of increasing output will be a rise in commercial exchanges thereby furthering the progressive transformation of the traditional barter economy to a more sophisticated market economy which will respond better to economic incentives and which will provide greater scope for direct and indirect taxation. Little new investment is proposed in transport where traffic volumes are at present insufficient to justify such investment, nor in education where the recommended changes in the present pattern of education should provide enough trained personnel to meet the future manpower needs of the economy. In fishing, where excessive and badly planned investment has taken place, basic studies are recommended before new investment decisions are made. A number of recommendations cover state institutions and the credit structure. In particular, a detailed reorganisation scheme is proposed, as a matter of the highest priority, for the planning and economic policy making apparatus within the Government in order to concentrate and coordinate the Government's efforts and resources with the sectoral programs of action. The fiscal side of Government is identified as a particular constraint since inadequate local resources will affect the ability of the country to support a large foreign financed capital investment program.

7. Finally a number of projects and studies are proposed which are designed to widen the scope of development activities in the future by increasing the number of productive investment alternatives. The major parts of the proposed investment program are ranked by priorities in accordance with the lowest ratio of capital invested to output. Accordingly, it will be possible to adjust the size of the investment program to the amount of capital available.

8. The investment guidelines suggested by the Mission for the four years of the next plan total some CFAF 8.6 billion with the following sectoral breakdown:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Amount (Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.8</td>
</tr>
<tr>
<td>Livestock</td>
<td>1.4</td>
</tr>
<tr>
<td>Fishing</td>
<td>2.5</td>
</tr>
<tr>
<td>Education</td>
<td>.4</td>
</tr>
<tr>
<td>Mining</td>
<td>.3</td>
</tr>
<tr>
<td>Other</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>8.6</td>
</tr>
</tbody>
</table>

9. Within this total the Mission has suggested a smaller first priority program amounting to some CFAF 6 billion, although not all of this, particularly with respect to the fishing industry, may require public financing. Whether the larger program of CFAF 8.6 billion can be implemented will depend on the readiness of projects and the availability of finance. The above programs are in addition to investments authorized under earlier programs. The recurrent charges to the budget are estimated to increase by some CFAF 1.4 billion annually by 1971, partly as a result of the new investments proposed by the Mission, partly a result of an allowance for the normal upgrading of personnel remuneration and for bringing maintenance expenditures to adequate levels.
10. The overall rate of growth in the Gross Domestic Product is projected as 3.8% annually from 1966 through 1971, far lower than rates recorded in the early 1960's when mining investment and output were expanding more rapidly. The impact of the recommended program of action will fall mainly on the rural and fishing sectors with an annual average rate of increase of 3 and 11 percent respectively (see Appendix II). It should be noted that the base used is 1966 while the program will not even get underway until 1968. With the same overall growth, this implies higher rates of growth for the period 1967-1971. In the rural sector an overall rise of 20% in this period is estimated for millet and livestock output—the two products which will benefit most in the short run from the investments and policies recommended in the program. These increases in traditional products would substantially surpass output gains in recent years. In fishing an annual rate of growth of 11% is projected because of the expected fuller utilization of excess capacity. A good deal of what is recommended in the program for the next four years should also yield substantial gains in output after 1971. The projections take account of ongoing programs and investments.

II. Principal Recommendations

11. The following is a summary of the Mission's principal recommendations. Where appropriate the indicative costs of proposed investments are included in parentheses. The relevant paragraph number of the main report is also indicated at the end of each recommendation.

12. Livestock

(1) Sanitary protection (CFAF 216 million): for the establishment of an immunization center, twenty vaccination parks, continuation of the antirinderpest campaign, laboratory equipment and the provision of vehicles. (162)

(2) Provision of Water Stations (CFAF 741 million): for studies, the location of wells and water resources, maintenance of existing wells, installation of new wells and the purchase of exploratory drilling equipment. (163)

(3) Improvement of pastures (CFAF 136 million): for the creation of pilot zones at Kaedi and Aftout-es-Sahel. (164)

(4) Marketing of cattle (CFAF 207 million): for the study and establishment of cattle ranches at Kaedi and Aftout-es-Sahel. (165)

(5) Animal product industries (CFAF 88 million): for the establishment of a dairy complex at Rosso and a study of a new slaughterhouse. (166)
13. **Crop Production**

(1) Studies (CFAF 70 million): including crop production, family budgets, and research on date palm trees. (167)

(2) Program for improving and carrying out millet cultivation (animal traction) (CFAF 278 million): in the Gorgol Brakna area and the Nema district as well as Aioun, Kiffa and Rosso. (168)

(3) Hydro-agricultural development schemes (CFAF 2,319 million): (169)

   (a) Hydro-agricultural studies (CFAF 399 million) for hydro-geological surveys in the Assaba, hydrological studies of the Kara Koro and the Hodh, the Mauritanian contribution to the United Nations Special Fund projects for the study of the development of the Senegal River and the establishment of a subterranean water authority. (169-1)

   (b) Further development of the Dar El Barka project (CFAF 10 million). (169-2)

   (c) Improvement of the Lower Boghe plan (CFAF 600 million). (169-3)

   (d) Gorgol development schemes (CFAF 755 million) including dams on the Lower Gorgol, Foun El Gleita, development of terrain and experimental plots. (169-4)

   (e) Further development of the R'Kiz Lake (CFAF 80 million). (169-5)

   (f) Development of the Delta (CFAF 275 million). (169-6)

   (g) Small scale irrigated agricultural developments on the Senegal River upstream from Kaedi (CFAF 30 million). (169-7)

   (h) Construction of two flood retention irrigation dams in the Hodh (CFAF 60 million). (169-8)

   (i) Creation of an hydro-agricultural work unit (CFAF 110 million). (169-9)

14. **Forestry**

(1) Protection of gum tree plantations (CFAF 138 million). (171)

(2) Forestry production measures (CFAF 40 million). (172)

15. **Fisheries**

(1) Study of the stock of exploitable marine resources (CFAF 43 million). (197)

(2) Preparation of a market study. (198)
(3) Creation of a Mauritanian fishing fleet (CFAF 1.4 billion in four years). (199)

(4) Training of seamen (CFAF 35 million). (201)

(5) Charter-parties for foreign vessels. (203)

(6) Expansion of port installations (CFAF 845 million). (204)

(7) Protection of territorial waters (CFAF 150 million). (205)

16. **Mining**

(1) Establishment of a geological research service (CFAF 28 million in four years). (251-1)

(2) Charge the Service of Mines with a study of power needs. (251-2)

(3) Creation of a mining and prospecting section in the National School of Public Administration (CFAF 12 million). (251-3)

(4) Revision of mining legislation. (251-4)

17. **Transportation**

(1) Complete the Rosso-Nouakchott road according to present design standards. (265-1)

(2) Avoid investments in improving the long distance road system. (265-2, 10, 11)

(3) Reintroduce competition in the road transport industry and revise the role of the ONTP. (265-3)

(4) Raise road maintenance expenditures to an annual minimum of CFAF 300 million. (265-4)

(5) Start a long-term program to train Mauritanian road engineers. (265-5)

(6) Study the desirability of replacing overage aircraft. Evaluate the financial aspects of exporting meat by air from Kaedi. (265-6)

(7) Meet short-term transport requirements in the region Rosso-Kaedi through marginal investments in improving navigability. (265-7, 8)

(8) Assess and attempt to recover damages on the badly constructed Kaedi-Kiffa road. (265-9)
18. **Primary Education**

(1) Reduce the weekly class periods. (295-1)

(2) Offer education in only one language in the first three grades and introduce the second language in the fourth or fifth grade. (295-2, 3)

(3) Improve the training of teachers who will teach in only one language. (295-4)

(4) Depending on Government policy with respect to the use of a single language in the lower grades of the primary school the training of bilingual teachers would be discontinued. (295-5)

(5) If bilingual teacher training is continued, the Government should reconsider the level at which students would be admitted to the training college, as well as the duration, curriculum, and methods of education. (295-6)

19. **Secondary Education**

(1) Severe selection standards should be imposed for admission to the sixth grade. (302-1)

(2) Permit only one repetition per cycle and only 15% repeaters in each grade. (302-2)

(3) Upper cycle admittance should be based on the best performance. (302-3)

(4) Total enrollment in the fifth grade of the school year 1967-68 should be limited to 480 to prevent a costly rise in total future enrollment. (302-4, 5)

(5) Although the above recommendations will achieve the most important EPEC and BAC level targets at a reasonable annual cost the Government may find it difficult to fully adopt the measures suggested with respect to selection and repeaters. Accordingly the following suggestions are offered for further consideration: (302-8)

(a) Reshape the secondary school curriculum to produce a type of education more suitable to Mauritanian needs. (302-8a)

(b) Maintain the parallel between the Mauritanian and French secondary school diploma and perhaps with other countries. (302-8b)
(c) Maintain one complete lycée with a French curriculum and consider the creation of a complete secondary school providing education in Arabic for teachers and others going on to higher education abroad. The proposed school could be established at the site of the present Institute of Higher Islamic Studies at Boutilimit. (302-8c, 9, 10)

(6) A special national commission should be formed to study these recommendations and alternatives with a view to recommending the most appropriate policy. (302-11)

20. Technical Education and High Level Manpower Training

(1) The girls' lycée at Nouakchott should be expanded to include training in home economics and health. (306-1)

(2) Investments in vocational training should be held in abeyance until the results of present methods have been obtained and expenditure levels determined. The control of the Technical College should be returned to the Ministry of Education and admission requirements of this college should be raised. (306-2)

(3) The Mamadou Toure Center should gradually increase its enrollment. (306-3)

(4) The other centers should expand and alter their programs in accordance with demonstrated requirements. (306-4)

(5) A long-term plan for using scholarships should be drawn up in order to train Mauritians to replace expatriates in accordance with manpower needs established by the Plan Organization. (308)

(6) The budgets for all technical training organizations, except the nursing school, should be included under the High Commissioners for Technical Education and High Level Manpower Training. (311)

21. Investments

(1) Primary education (CFAF 100 million): for 30 new classrooms, offices, vehicles and equipment. (315-1)

(2) Pedagogical Institute (CFAF 20 million): audio-visual aids. (315-2)

(3) Secondary schools (CFAF 270 million): for buildings, staff houses, teaching aids, classrooms and other facilities. (315-3)

(4) Vocational training facilities (CFAF 10 million). (315-4)
10. The overall rate of growth in the Gross Domestic Product is projected as 3.8% annually from 1966 through 1971, far lower than rates recorded in the early 1960's when mining investment and output were expanding more rapidly. The impact of the recommended program of action will fall mainly on the rural and fishing sectors with an annual average rate of increase of 3 and 11 percent respectively (see Appendix II). It should be noted that the base used is 1966 while the program will not even get underway until 1968. With the same overall growth, this implies higher rates of growth for the period 1967-1971. In the rural sector an overall rise of 20% in this period is estimated for millet and livestock output—the two products which will benefit most in the short run from the investments and policies recommended in the program. These increases in traditional products would substantially surpass output gains in recent years. In fishing an annual rate of growth of 11% is projected because of the expected fuller utilization of excess capacity. A good deal of what is recommended in the program for the next four years should also yield substantial gains in output after 1971. The projections take account of ongoing programs and investments.

II. Principal Recommendations

11. The following is a summary of the Mission's principal recommendations. Where appropriate the indicative costs of proposed investments are included in parentheses. The relevant paragraph number of the main report is also indicated at the end of each recommendation.

12. **Livestock**

   (1) Sanitary protection (CFAF 216 million): for the establishment of an immunization center, twenty vaccination parks, continuation of the antirinderpest campaign, laboratory equipment and the provision of vehicles.  (162)

   (2) Provision of Water Stations (CFAF 741 million): for studies, the location of wells and water resources, maintenance of existing wells, installation of new wells and the purchase of exploratory drilling equipment.  (163)

   (3) Improvement of pastures (CFAF 136 million): for the creation of pilot zones at Kaedi and Aftout-es-Sahel.  (164)

   (4) Marketing of cattle (CFAF 207 million): for the study and establishment of cattle ranches at Kaedi and Aftout-es-Sahel.  (165)

   (5) Animal product industries (CFAF 88 million): for the establishment of a dairy complex at Rosso and a study of a new slaughterhouse.  (166)
13. **Crop Production**

(1) Studies (CFAF 70 million): including crop production, family budgets, and research on date palm trees. (167)

(2) Program for improving and carrying out millet cultivation (animal traction) (CFAF 278 million): in the Gorgol Brakna area and the Nema district as well as Aioun, Kiffa and Rosso. (168)

(3) Hydro-agricultural development schemes (CFAF 2,319 million): (169)
   
   (a) Hydro-agricultural studies (CFAF 399 million) for hydro-geological surveys in the Assaba, hydrological studies of the Kara Koro and the Hodh, the Mauritanian contribution to the United Nations Special Fund projects for the study of the development of the Senegal River and the establishment of a subterranean water authority. (169-1)
   
   (b) Further development of the Dar El Barka project (CFAF 10 million). (169-2)
   
   (c) Improvement of the Lower Boghe plan (CFAF 600 million). (169-3)
   
   (d) Gorgol development schemes (CFAF 755 million) including dams on the Lower Gorgol, Foun El Gleita, development of terrain and experimental plots. (169-4)
   
   (e) Further development of the R'Kiz Lake (CFAF 80 million). (169-5)
   
   (f) Development of the Delta (CFAF 275 million). (169-6)
   
   (g) Small scale irrigated agricultural developments on the Senegal River upstream from Kaedi (CFAF 30 million). (169-7)
   
   (h) Construction of two flood retention irrigation dams in the Hodh (CFAF 60 million). (169-8)
   
   (i) Creation of an hydro-agricultural work unit (CFAF 110 million). (169-9)

14. **Forestry**

(1) Protection of gum tree plantations (CFAF 138 million). (171)

(2) Forestry production measures (CFAF 40 million). (172)

15. **Fisheries**

(1) Study of the stock of exploitable marine resources (CFAF 43 million). (197)

(2) Preparation of a market study. (198)
(3) Creation of a Mauritanian fishing fleet (CFAF 1.4 billion in four years). (199)

(4) Training of seamen (CFAF 35 million). (201)

(5) Charter-parties for foreign vessels. (203)

(6) Expansion of port installations (CFAF 845 million). (204)

(7) Protection of territorial waters (CFAF 150 million). (205)

16. **Mining**

(1) Establishment of a geological research service (CFAF 28 million in four years). (251-1)

(2) Charge the Service of Mines with a study of power needs. (251-2)

(3) Creation of a mining and prospecting section in the National School of Public Administration (CFAF 12 million). (251-3)

(4) Revision of mining legislation. (251-4)

17. **Transportation**

(1) Complete the Rosso-Nouakchott road according to present design standards. (265-1)

(2) Avoid investments in improving the long distance road system. (265-2, 10, 11)

(3) Reintroduce competition in the road transport industry and revise the role of the ONTP. (265-3)

(4) Raise road maintenance expenditures to an annual minimum of CFAF 300 million. (265-4)

(5) Start a long-term program to train Mauritanian road engineers. (265-5)

(6) Study the desirability of replacing overage aircraft. Evaluate the financial aspects of exporting meat by air from Kaedi. (265-6)

(7) Meet short-term transport requirements in the region Rosso-Kaedi through marginal investments in improving navigability. (265-7, 8)

(8) Assess and attempt to recover damages on the badly constructed Kaedi-Kiffa road. (265-9)
Education and Training

18. Primary Education

(1) Reduce the weekly class periods. (295-1)

(2) Offer education in only one language in the first three grades and introduce the second language in the fourth or fifth grade. (295-2, 3)

(3) Improve the training of teachers who will teach in only one language. (295-4)

(4) Depending on Government policy with respect to the use of a single language in the lower grades of the primary school the training of bilingual teachers would be discontinued. (295-5)

(5) If bilingual teacher training is continued, the Government should reconsider the level at which students would be admitted to the training college, as well as the duration, curriculum, and methods of education. (295-6)

19. Secondary Education

(1) Severe selection standards should be imposed for admission to the sixth grade. (302-1)

(2) Permit only one repetition per cycle and only 15% repeaters in each grade. (302-2)

(3) Upper cycle admittance should be based on the best performance. (302-3)

(4) Total enrollment in the fifth grade of the school year 1967-68 should be limited to 480 to prevent a costly rise in total future enrollment. (302-4, 5)

(5) Although the above recommendations will achieve the most important BEPC and BAC level targets at a reasonable annual cost the Government may find it difficult to fully adopt the measures suggested with respect to selection and repeaters. Accordingly the following suggestions are offered for further consideration: (302-8)

(a) Reshape the secondary school curriculum to produce a type of education more suitable to Mauritanian needs. (302-8a)

(b) Maintain the parallel between the Mauritanian and French secondary school diploma and perhaps with other countries. (302-8b)
(c) Maintain one complete lycée with a French curriculum and consider the creation of a complete secondary school providing education in Arabic for teachers and others going on to higher education abroad. The proposed school could be established at the site of the present Institute of Higher Islamic Studies at Boutilimit. (302-8c, 9, 10)

(6) A special national commission should be formed to study these recommendations and alternatives with a view to recommending the most appropriate policy. (302-11)

20. Technical Education and High Level Manpower Training

(1) The girls' lycée at Nouakchott should be expanded to include training in home economics and health. (306-1)

(2) Investments in vocational training should be held in abeyance until the results of present methods have been obtained and expenditure levels determined. The control of the Technical College should be returned to the Ministry of Education and admission requirements of this college should be raised. (306-2)

(3) The Mamadou Toure Center should gradually increase its enrollment. (306-3)

(4) The other centers should expand and alter their programs in accordance with demonstrated requirements. (306-4)

(5) A long-term plan for using scholarships should be drawn up in order to train Mauritanians to replace expatriates in accordance with manpower needs established by the Plan Organization. (308)

(6) The budgets for all technical training organizations, except the nursing school, should be included under the High Commissioners for Technical Education and High Level Manpower Training. (311)

21. Investments

(1) Primary education (CFAF 100 million): for 30 new classrooms, offices, vehicles and equipment. (315-1)

(2) Pedagogical Institute (CFAF 20 million): audio-visual aids. (315-2)

(3) Secondary schools (CFAF 270 million): for buildings, staff houses, teaching aids, classrooms and other facilities. (315-3)

(4) Vocational training facilities (CFAF 10 million). (315-4)
22. **Economic Policy**
   (1) A thorough inquiry should be undertaken of interior and exterior commerce with a view to establishing whether a justification exists for reallocating the common customs receipts from the Customs Union with Senegal. (321)
   
   (2) The present arrangements providing for an open economy, a convertible currency and important economic ties to other West African states, France and the Common Market should be retained. (322)

23. **The Credit System**
   (1) The BMD should pursue an active credit policy concentrated in the rural sector in accordance with the requirements of the development program. (329-1)
   
   (2) The problem of control and development policy of the BMD needs to be reexamined with serious consideration given to changing the Bank's statutes. (329-2)
   
   (3) Credit to farmers should be extended through farmers' associations and should include production equipment, storage facilities, and a minimum price policy. (330, 331)
   
   (4) The program of rural credit should be based on current studies and pilot projects. (332)

24. **Plan Administration**
   (1) The Office of the Economic and Financial Advisor to the President and the Office of the National Planning Agency should be combined. (367-1, 2)
   
   (2) The National Planning Agency should contain one directorate for planning and one for statistics; the latter should serve as the Government's central statistical agency and should be given adequate funds, personnel and equipment to perform this function. (367-3)
   
   (3) A sectoral programming apparatus should be set up within each ministry. (367-4)
   
   (4) An inter-ministerial planning and policy committee should be established under the National Planning Agency to coordinate sectoral, national planning, and the budget as well as to advise the Cabinet on current economic policy issues. (367-5)
   
   (5) An Economic Committee of the Council of Ministers should be established to examine development and economic policy issues. (367-6)
(6) The system of budgetary accounting should be revised so as to enable policy makers to identify cash receipts and expenditures, current and capital costs and economic categories in the budget. (367-7)

25. Fiscal Policy

(1) An external debt management policy should be followed to ensure that new debt is incurred only for productive purposes on suitable terms. In particular care should be taken not to permit an excessive expansion of external suppliers' credits. (382, 383)

(2) The Government should revise its purchasing policies so as to avoid paying customs duties on its own imports. (384-2)

(3) The system of local taxation should be revised in order to place a larger share of the burden of social services and education on the urban and rural communities. (384-3)

(4) A full enquiry should be undertaken of the entire tax system including the potential tax base and the management of the fiscal structure with a view to instituting specific reforms and increasing tax yields from present taxes and new taxes. Reforms should change import duties and turnover taxes and introduce tabulating machinery as part of the statistical re-organisation. (384-4)
CHAPTER ONE: INTRODUCTION

A. The Political and Social Structure

1. Before Mauritania achieved independence in November 1960, it was ruled by the French for 60 years. The French did not fundamentally change the tribal and feudal structure they found, rather they modified it and gradually brought it under the control of a governmental structure which included a good part of West Africa. Nevertheless changes were occurring in the social structure, changes which were hastened by the spreading European influence. These changes tended to reduce the rigid class distinctions of the Moorish tribal structure and the system of feudal tribute. The tribal structure of the Senegal River area had been subjected to European influence far earlier. The variety of Negro ethnic groups, which inhabited the Senegal River basin, were consequently exposed to more French cultural and commercial influences.

2. The present Islamic Republic of Mauritania contains a population of whom about 80% are of Moorish background and about 20% of Negro origin. Although virtually all are Moslems, the former group has an Arab-Berber ethnic and cultural background, while the latter consists of such distinct Negro ethnic groups as Toucouleurs, Sarakoles and Peuls. The Moors trace their ancestry back to the Almoravides and their Hassaniya Arab successors who conquered Morocco and Spain, absorbed the Berber Tribes, and spread Islam to the Negro tribes in Mauritania. The Negro tribes can also recall proud kingdoms. They successively fought and made treaties with the Moors and the French, a process which took place over centuries and which had as its focal point the Senegal River basin.

3. The present Islamic Republic of Mauritania has aptly been described as the bridge (trait d'union) between Arab Africa and Black Africa. Culturally and ethnically the majority belongs to the North while the minority looks to the South. Materially, however, the main ties are with the South, particularly Dakar, with which the bulk of commerce takes place. Between Mauritania and the Northern Arab states lies the Western Sahara desert which effectively inhibits communication and large scale trade.

4. The present political structure evolved after independence from a number of political parties that combined to create a single national party, The People's Party, and that in effect agreed to express their differences within this framework. Dissident elements in Morocco and at home are not considered a serious threat in view of the general support the Party has with the people. From the outset the stress was on national unity. Governmental portfolios were distributed in order to effect a balance between the various interests. In 1961 a new constitution was voted creating a Presidential system and vesting legislative power in a 40-member National Assembly. Moktar Ould Daddah was recognized as the dominant political leader and has from the beginning been head of the Party as well as President of the Republic.
5. The system of electing deputies is democratic in nature. The various constituencies vote on proposed candidates, who are approved by the central party organization. Of the three Amirates surviving the French period, only one is alleged to retain real power over his domain. Yet the vast distances and isolated condition of the largely nomadic peoples tend to preserve tribal control in the rural areas, a control which is only gradually being reduced. Evidence of this is the emergence of new political figures who are not always members of the ruling families. An important and controversial step to advance the cause of modernization was the strengthening of the power of the Party in 1964. The Party became the principal instrument for formulating national policy, while the power of the more traditionalist Assembly was reduced.

6. By far the most serious divisive factor is that which exists between the dominant Moors and the minority Negro ethnic groups along the river. It is not primarily a matter of color, since some 40% of the Moors are the black descendants of subject peoples who intermarried with the Moors and who regard themselves as fully part of this group. The problem is cultural. The more militant Moorish groups want Arabic as the official language and the Negroes demand more influence and autonomy. The mother tongue of the Negro groups is any of a number of tribal dialects. These people, who usually speak Arabic also, were particularly successful in adapting themselves in the past to the French language and administration. As a result they now hold a disproportionate number of places in the civil service where French is the official language, a position they are reluctant to lose. The issue erupted into serious disturbances in February 1966 in the capital, mainly between students representing the two groups, over the proposal of the Minister of Education to enforce Arabic as the language of instruction in the secondary schools. This led to the closing of the secondary schools in Nouakchott and Rosso for the rest of the year.

7. A subsequent Party Congress was followed by a thorough reorganization of the Government and the decision not to change the status quo. The reorganization placed special emphasis on the youth and a new High Commission was established for this purpose. The President has managed to re-establish the former consensus between the two groups and the near term prospects for continued stability are good in the opinion of experienced observers.

8. Mauritania has succeeded in establishing cordial relationships with virtually all nations and blocs. It is a member of a number of African blocs, including that of the Arab nations, and has had good political and economic relations with Russia, Communist China and the United States. It joined other African States in breaking diplomatic relations with the United Kingdom over the issue of Rhodesia, and more recently broke relations with the United States following the Middle East conflict.

9. Mauritania has close ties with France which were formalized in 1961 in a series of economic, financial and technical agreements. France is by far the largest single contributor of concessional aid and technical assistance to Mauritania. France also exercises strong cultural influences particularly through the educational system. A number of Frenchmen still occupy important administrative and judicial posts in the Government although
they are gradually being replaced, as trained Mauritanians become available. Mauritania is a member of the Customs and Monetary Union of West African States, and is one of the 18 African States associated with the Common Market, from which it receives considerable economic assistance.

10. The principal external problem is the still unsettled issue of Morocco’s non-recognition of Mauritania’s independence. In particular, the conflicting claims of the two nations to the Spanish Sahara (Río de Oro) are a potential source of trouble. Little pressure is being exerted on the Spanish by the Mauritanians, no doubt in recognition of the dangers that a change in the status quo of the Spanish Sahara would involve. Indeed, Mauritania has important economic agreements with Spain in relation to the Port Etienne fishing industries, in which considerable Spanish investment is anticipated.

11. The nation’s foreign relations reflect the high degree of moderation and pragmatism characteristic of internal relations among the Moors. The pressures for development and the stresses of social changes are less likely to take on an explosive character under these circumstances. Rather it appears that the authorities in Mauritania will have the time, if they choose to use it, to marshall their limited resources in a systematic manner so growth can proceed in an orderly fashion.

B. The People and Their Environment

12. According to the most recent sample census, Mauritania had a population in 1965 estimated at 1,040,000. A forthcoming complete census may well produce important differences in the size and characteristics of the population from the estimates used here. According to the available figures, the population is about 80% Moorish and 20% Negro. The urban population is not known with any precision but is reported to slightly exceed 10% of the total and is spread over a number of relatively small towns. Nouakchott, the capital, has an estimated population of some 15,000, Port Etienne, Fort-Gouraud and Kaedi about 10,000 each, and Rosso some 5,000. Growth has been most rapid in the towns which are part of the modern sector particularly Nouakchott, Port Etienne and Port-Gouraud.

13. The estimated rate of population growth is 1.7% annually; the growth rate amongst the Moors is 1.5%, and amongst the Negroes, 1.9%. This implies a doubling of population in fifty years and a net increase of some 300,000 by 1980. Life expectancy at birth is 40 years. Because of the primitive and harsh conditions of life the infant mortality rate is extremely high. Both the survival and death rates can be expected to change significantly in the event of a great improvement in public health services. In 1964 the country had 23 doctors of whom three were nationals, 3 hospitals, 25 medical centers and 50 dispensaries. Some 180 trained nurses staffed most of these facilities. Despite the progress made in recent years, the bulk of the population has no access to modern medical care.


In 1962 the population was estimated at 880,000.
14. The distribution of population reflects primarily climatic and ecological conditions. The main factor in determining the location and concentration of the population is the availability of water. Close to 80% of the population lives south of the 17° parallel in 1/7th of the country's land area. The concentration of population ranges from less than 0.1 per km$^2$ in the North to 8 per km$^2$ in Guidimaka in the far South.

15. The outer limit of regular pasturable terrain is marked by the 100 mm annual rainfall line which passes through the oasis of Atar in the North (21° parallel) and is close to the 17° parallel in the South West. South of this 100 mm line annual rainfall increases to 600 mm along the river in the South. In areas where rainfall exceeds the 200 mm level dry farming is found in addition to cattle, and the pure nomad is replaced by the semi-nomad and sedentary population. In general, the Moors are nomadic while the Negroes tend to be sedentary, although the distinction is not sharp.

16. The main movement of population is towards the South from the Saharan and Sub-Saharan zones to the more plentifully watered Sahelian areas. In the process increased sedentarization is observable in the form of new villages and increases in the sizes of regional towns. This process is encouraged by official policy.

17. Some two-thirds of the entire population is engaged in livestock herding. The bovine herds are most heavily concentrated in the regions of greatest rainfall along the Senegal River from South of Brakna, Guidimaka, the Hodh Occidental and the South of the Hodh Oriental. The concentration diminishes as the 200 mm zone is approached in the Northeast Trarza to the center of the Hodh Oriental in the far eastern part of the country (see map). The goat and sheep population overlaps the bovine regions in the more northerly reaches and is particularly concentrated in the triangle bounded by M'Bout and Konkossa in the South and Tidjika in the center of the country. Goats and sheep are also numerous in the Western Trarza and the Hodh. Camels are mainly found in regions of less than 200 mm rainfall and East of the line starting 200 km North of Nema to Fort Trinquet in far North.

18. There are three types of livestock herding which affect the degree of nomadism. First, there is the nomadism, called transhumance, of lower Mauritania (Sahelian region). Here the tribal camps are relatively stable with rich pastures and predominantly bovine herds. The herds and people move to different zones and even cross national boundaries (Mauritania and Mali) along fixed routes and according to established patterns in order to take advantage of seasonal vegetation growth. Since the animals leave the inundated and unhealthy zones during the winter rainy period they are generally healthier than livestock belonging to the sedentary people. The dispersion of the animals also inhibits the spread of contagious diseases. It is not unusual to find schools and wells in the more important camps as well as some cultivation of the soil.

19. A second form of nomadism occurs in central Mauritania (Adrar-Tagant) where movements are more erratic and dependent on rainfall. Sheep and camels go South with the beginning of the humid season and return North with the autumn rains. People and herds move over greater distances but less regularly than in the South.
20. Finally, there are the great Nomads of the North who can depend on no regular seasonal rainfall and who travel with their camels, often over a thousand kilometers, in search of pasture. The numbers of people involved are small and they are widely dispersed.

21. The sedentary zones are in the far South; their population raises cattle and produces crops, principally millet and sorghum. In addition to the various Negro ethnic groups identified earlier in this area, the sedentary zones include a number of villages inhabited mainly by black Moors. The sedentary population also includes the inhabitants of the oases in various parts of the arid regions. The greatest part of the sedentary population is situated along the Senegal River. This area has the highest population density in the country.

22. The social structure of the sedentary tribes is like that of the Moorish tribes. In the Moorish tribes the principal unit is the tribe, an ancient social organism, which is composed of a number of family groups or tents with common traditions and habits under a single chief. In its classic form the tribe consists of noble families at the top of the structure, either warriors or Marabouts (learned and religious castes), tributary groups of shepherds and farmers usually of Berber origin, artisans, and haratines who were subject peoples. Many of these are black Moors who engage in sedentary agriculture and often still pay tribute. With the increasing modernization of Mauritania the warrior castes have lost their importance. Members of this class have tended to be absorbed in the police corps and army. The Marabouts tend to become teachers and administrators. It is important to note that the Moorish caste system does not imply marked differences in material wealth but rather defines mutual obligations and privileges. The noble families own little land and the democratic nomadic tradition requires wealth to be widely distributed. Among the Negro tribes the Toucouleurs are most numerous. They inhabit both the Mauritanian and Senegalese sides of the River and frequently have family and property interests in both countries. They too have noble families, free productive classes, artisans and servant classes. The Peuls are spread all over the valley and are partly sedentary. Large numbers leave the villages during the seasons of transhumance to follow the cattle.

23. A complicated system of land tenure and usage exists in the flood plain of the Senegal. There are numerous examples of collective ownership, individual rights to use land and sharecroppers involving both Moors and Negro tribes. No cadastral survey exists and the system of tenure is only known for certain limited parts of the valley. Efforts to modernize agricultural production will have to overcome formidable social barriers with respect to land ownership and rights.

24. Attempts to spread and improve education have been severely hampered by the wide dispersion of the population and the limited resources produced by a primitive livestock and agricultural economy. The primary school age population (ages 6-12) may be estimated at some 20% of the total population. The percentage of primary school age children in school is less than 10%, although primary education absorbs 11% of the total budget. The percentage of children in school also varies widely depending on population concentration. Thus 21% are in school in the North around Port-Etienne but only about
The cost of primary education per pupil in Mauritania (CFAF 21,000) is well above the average for the other francophone states of Africa (CFAF 9,700).

25. The generally harsh climatic conditions, the limited amount of arable land, the great dispersion of the bulk of the population and the traditional social structure constitute serious limiting factors for the process of economic development. The dissemination of modern technology, and the extension of central administration is made difficult by the widely scattered population. Land communication is not only primitive, but expensive improvements are difficult to justify in economic terms given the structure of production.

C. The Structure of the Economy

Modern Sector

26. The outstanding feature of the Mauritanian economy is its strong dual character. On the one hand are the traditional livestock and agricultural sectors which yield little more than subsistence standards of living and in which about 90% of the population is engaged. On the other hand, there is the modern sector in the Northwestern part of the country consisting of an iron mine, a copper mine under construction, and a developing fishing industry. These enterprises are in reality foreign enclaves developed with foreign capital and staffed at the higher levels almost entirely by Europeans. As extensions of the modern industrialized world, these industries are subject to cyclical variations in demand characteristic of their foreign parent industries, as the sharp decline in iron ore prices demonstrated in recent years. In the case of Mauritania, the profitability of ore companies is potentially important, as the Government will receive a large share of their profits, if there are any. The Government also owns a large share in the fish processing facilities, where serious overinvestment makes substantial potential returns questionable.

27. Because of the nature of the enclave industries in the North their direct influence on the introduction of modern technology in the traditional sector can only be limited. In the first place these industries, whether in mineral extraction or in fish processing, are highly capital-intensive in structure. They will therefore employ small, but relatively skilled, local cadres. The specialized training required for these cadres will be largely provided by the industries themselves and will not be readily transferable to the traditional livestock and agricultural sectors. Even in the fishing industry where scope exists to develop a Mauritanian fishing fleet the total requirement for manpower over the next decade is not expected to exceed 1,200.

28. The direct effects of the enclave industries on employment, income and training will be limited. Their primary contribution to the development of the traditional sectors will be indirect in the form of taxes and royalties on output and salaries and possible profit on operations which will accrue to the current Government budget. This source of income already accounts for over a fourth of total Government current revenues. The
possible impact of this source of revenue on the development effort in
general should not be exaggerated. Revenues from such sources will not
have risen significantly by 1971, the end of the second Plan period, nor
will they after that. The copper mines, under the terms now available
for review, are not expected to make an important contribution until 1975,
when they will amount to some 10% of present Government current revenues.
Thus, the Government's financial problem, even with a large contribution
from the export of iron ore, remains critically tight.

29. Although revenues have increased by over three and a half times
in the last seven years - mainly because of MIFERMA - budgetary balance on
the current account has been maintained by keeping current outlays in check
and certainly below the level of pressing demands in the fields of rural
services, social services and maintenance. Even so, a part of Government
outlays has had to be financed by foreign aid through the equipment budget,
as have virtually all of investment outlays.

30. Finally the enclaves can have an important, although limited,
economic impact in providing markets for domestically produced products.
The mining and fishing centers of Port Etienne, Port-Gouraud, and in the
future Akjoujt, with their relatively high salaried European and local
staffs, have been only partially exploited by the vegetable growers of Atar
and Chinguetti in the North and not at all by the livestock industry of
the South and the East. The opportunity exists to replace presently imported
foodstuffs with domestically produced vegetables and meat once production,
distribution and marketing are properly organized. In this connection the
new Government administrative center of Nouakchott should be considered to
be part of the modern sector. It offers similar possibilities to domestic
producers of agricultural products.

31. With a population of some 1 million persons, the potentially active
population (15 to 60 years of age) is estimated to be some 500,000 (less
than half male). The proportion of the population under 15 years of age is
from 40 to 45% of the total; the proportion over 60 is therefore quite small.
A good part of the female population in the active age group should not be
considered as part of the labor force, i.e. willing and able to work, since
traditional social custom generally relegates the female to a quite passive
work role in the nomadic part of the population. These attitudes are carried
over to the modern sector where relatively few females participate in the
labor force. They constitute about 10% of employment in the modern sector.

32. Employment in the modern sector was estimated at 16,200 in 1965,
of which 3,200 were foreigners. In general the modern sector employs some
5% of the potential labor force. The absolute numbers employed have declined
in recent years as a result of the completion of major iron mining invest-
ments. Some 96% of the private modern labor force is concentrated in the
northern part of the country, principally in Nouakchott, Zouerat and Port
Etienne. If public employment (excluding the armed forces) is included, the
North contains an estimated 61% of total employment in the modern sector.
Thus modern sector employment affects a very small part of the population.
It is fairly stable in numbers and is subject, as will be shown, to great
shifts in types of occupation. Finally, the productive part of the modern
sector is heavily concentrated in the most sparsely populated part of the
country, where its higher incomes and modern skills can have but a minimal influence on the bulk of the traditional sector. The difference between the modern and traditional sectors is seen even more clearly from the figures on income distribution. The latest available national accounts estimates are for 1964. These are most imprecise in imputing value added to the traditional sector and most reliable in estimating the modern sector. Nevertheless they are probably reliable enough to give a general impression of the relative importance of the main sectors which contribute to the national product.

33. Total wages and salaries in the private modern sector in 1964 are estimated at CFAF 5.4 billion. Total modern private employment amounted to 9,300 in 1964, of whom some 33% were foreigners (both African and European). The foreigners held the great majority of executive and skilled positions. In the highest class of wages and salary earners, foreigners held 94% of the positions and earned 50% of all wages and salary payments. In general, Mauritanians held two-thirds of the jobs in the private modern sector but received only one-third of total wage and salary payments. It is estimated that foreigners habitually transfer over 50% of their income abroad. In 1964 this would have amounted to transfers of some CFAF 1.8 billion or more.

34. Employment in the modern public sector amounted to about 8,200 excluding the security forces. Total wage and salary payments in the public sector amounted to CFAF 4.1 billion in 1964. Foreigners were estimated to constitute some 10% of public employment. A large number of foreigners in the public service receive most of their remuneration from technical assistance programs paid by other countries and international organizations.

35. Income per capita in the modern sector may be roughly estimated to exceed that in the traditional sector by some ten times on the average. If foreign workers are excluded, Mauritanian income per worker in the modern sector may be estimated at five times the traditional sector.

36. The figures on the distribution of the gross domestic production at factor cost in 1964 indicate that the traditional sector produces some 52% of the total, mining 24%, and commerce 11%.

37. Thus the bulk of the working force is engaged in producing less than half the domestic product. Moreover, the large proportion of the national product produced in the mining sector is offset by heavy factor payments abroad by the enterprise producing the iron ore (MIFERMA), as well as by the considerable transfer payments by the foreign workers who receive the greatest part of the private wage and salary payments. The sum of factor payments abroad by enterprises and wage and salary earners was estimated at CFAF 8.8 billion in 1964. GNP was accordingly estimated at 26.9 billion compared with GDP of 35.7 billion in 1964 (at current market prices).

2/ Preliminary estimates produced in the French Ministry of Cooperation.

3/ National accounts estimate.
Although Gross Domestic Product estimates are available for the years 1959, 1962 and 1964, the breakdown of the figures is not comparable for each year. From 1959 through 1962 the gross domestic product (in current market prices) increased from CFAF 14.5 billion to CFAF 24.4 billion, an annual rate of increase of some 20%. Of this CFAF 9.9 billion increase, the mining sector accounted for CFAF 7.3 billion while the traditional agricultural, livestock and fishing sectors accounted for only CFAF 0.7 billion. The balance of the increase was principally accounted for by the Government sector, mainly salaries whose product rose from CFAF 2.5 billion to CFAF 3.4 billion. The main cause of this growth was the rise in gross fixed capital formation, consisting almost entirely of imported capital by MIFERMA, which rose from 9% of GDP in 1959 to almost 70% of GDP in 1962. Average per capita income rose from an estimated $65 to over $100 in this period. As a result the share of the traditional sector in the national product fell from 71 to 45% between 1959 and 1962.

Accordingly, even with a rate of growth of 20% annually in the gross domestic product induced by investment in the enclave industries, very little effect was observable on the traditional sectors. From 1962 through 1964 the rate of growth in current prices remained at 20% a year. The principal change in the composition of value added to the gross domestic product was the sharp rise in mining output which offset the fall in building activity as a result of the completion of the MIFERMA iron mining facilities. Important increases are also indicated for the tertiary sector, mainly commerce. The national accounts estimates show a rise of CFAF 3.9 billion in the rural sector which principally concerns livestock herding. As neither the quantities nor values of rural sector output can be determined with any precision, the stated growth shown may be subject to a wide margin of error. In the period 1959-1964 account should be taken of an average annual estimated price rise of some 4%. From 1964 through 1966 the Mission estimates that the rate of growth was about 8% on an average annual basis principally because of the levelling off of the rate of increase in mining output and the slow rate of growth assumed in the rural sector. In the subsistence economy where there is little evidence of technological change, rises in output probably approximate the growth in population. Average per capita income in 1964 may be estimated at some $140. (See Appendix II)

Livestock

The livestock herds of Mauritania represent the greatest resource of the country's traditional sector as well as the principal occupation of its people. Livestock contributes about CFAF 10 billion to the gross domestic output; the entire agricultural sector including livestock produces a GDP of some CFAF 13 billion. There are an estimated 2 million cattle, 6 million sheep and goats, 500,000 camels, and 150,000 horses and asses.

The principal factors limiting the development of livestock are:

1. The quantity and quality of pastures.
2. The availability of drinking water.
3. The pathology and sanitary condition of the animals.
42. In general, animals in the drier zones are healthier and less subject to disease than those in the more moist regions. As indicated earlier, the increased concentration of animals under transhumance in the south during the dry season causes a deterioration in sanitary conditions and in the quality of pasture. In addition, vast areas cannot be used in a rational manner to pasture the herds because of the absence of drinking water for man and beast during a large part of the year. Over the centuries these conditions have produced a breed of animal under transhumance particularly adapted to the terrain. In effect, the animals are subject to alternating periods of famine and feast. They often go two and three days without water during the long marches between pastures. The African Zebu cattle are of two distinct types - the Moorish Zebu and the lower yielding Peul Zebu. This is the only type of animal able to survive the natural climatic conditions of the country as well as resist the epizootic diseases which afflict animals in the more temperate zones, although even the Zebu can benefit greatly from sanitary protective measures.

43. Under these conditions it is not surprising that the productivity of the animals is less than that of herds in more favorable climates. Nevertheless despite the regular deprivation of food and water to which they are subject, the herds survive, reproduce and provide nourishment for a human population while leaving an important surplus for export. The limited knowledge of the physiology of the African Zebu makes it difficult to cross breed it successfully with superior yielding types of animals. The natural conditions of the country together with the physiology of the Zebu makes it impossible to apply European or American coefficients of converting fodder into meat and milk.

44. Bovines do not reach maturity until after the fifth year, the cows do not become fertile until the third year, the birthrate rarely exceeds 60% and the rate of survival is 50%. Beef cattle in the traditional livestock culture are marketed young, often yielding less than 300 kg. on the hoof and returning less than 50% per carcass. Meat and milk yields are correspondingly low for sheep and cows. Virtually all of the milk is consumed by the herders, thereby depriving the young calves of adequate nourishment and leading to high mortality rates. Accordingly, the annual rates of output as a percentage of total herds is estimated at 8% for bovines, 30% for sheep and goats and 5% for camels.

45. In addition to the low rates of return, the system of distribution and marketing of livestock is primitive. At maturity, the animals are sold on consignment, usually against an advance, at the major livestock centers, particularly Kaedi, Kiffa and Nema, to middlemen who drive them through Senegal where they are fattened en route to markets in Dakar. It is a system in which a large degree of confidence exists between herder and merchant. The merchant or middleman sells the cattle on the market in Dakar and then pays the herder. Payment from the Dakar market is irregular as the herders come into contact with the sedentary settled areas during only one part of the transhumance cycle. During these contacts a system of barter of animals for grain and other products also takes place. In general, the herder is dependent on middlemen and the vagaries of a market which is from 500 to 1,000 km. from the collection points in Mauritania. It is a system which nevertheless yields returns to Mauritanian herders which compare favorably with the experience of other African livestock raising areas.
The main crops produced in Mauritania are millet and a close relative, sorghum. Output is estimated at some 110,000 tons a year. Three types of culture are identifiable. The first and by far the most important, accounting for some three-fourths of total output, is farming in the flood plain of the Senegal River (culture de décres) and its tributaries. The millet is planted in areas (the oualo) where the river flood has receded. Some 40% of flood plain output is in the Brakna/Gorgol region and 15% in the Guidimaka regions of the river, the yield is an estimated 400 kg. per hectare. The low returns are due to the use of extremely primitive techniques of cultivation, the irregularity of the flood which can double in area from one year to another, and the general inadequacy of water given the techniques of cultivation. Planting usually takes place late, in March and April, after the ground has already lost a considerable amount of moisture. The ground is not tilled; a forked stick is used to make a hole into which the seed is inserted. The growth of the plant is entirely dependent on the remaining moisture in the ground which is diminished considerably by the hot dry winds which blow from the East starting in April and May.

The second type of millet-sorghum culture is that dependent on rainfall. Average yields are about 300 kg. per hectare. In the Guidimaka, where rainfall is some 500 mm a year, yields are higher. The crop is planted with the same primitive techniques described above at the first rainfall. Occasionally, a second crop may be obtained depending on the amount of rainfall. The principal limitations on this type of culture, aside from technique, are the irregularity of annual rainfall and the general lack of adequate moisture which is further accentuated by the rapid evaporation of moisture in a dry climate.

The third type of millet-sorghum culture is grown largely by the nomadic herders and may be considered a strictly secondary activity to their principal occupation of raising livestock. It is based on the brief periods of flood which follow the intense but short desert rainfalls. The collection of water in the wadis leaves enough moisture to produce a poor crop. In the last generation, a number of small dams were erected by the Government and occasionally by local communities to retard the flow of the water and increase the inundated area. The investment in these dams has yielded extremely low returns, while providing some crop supplement to the livestock output of the nomads and to a few sedentary villages in the pasturelands. Where there is virtually no opportunity cost of labor, the increased output of millet, however meager, may be defensible on social grounds. However, the opportunity cost of capital is considerably higher than zero, and it is on these grounds that the investment in dams of this type may be questioned.

The total domestic output of millet is insufficient to meet domestic consumption requirements. Accordingly, a gradually increasing quantity, in accordance with population growth, has been imported annually from Senegal and Mali. Last year, an estimated 30,000 tons of millet was imported.
Dates

50. There are an estimated 1 million date palm trees in Mauritania. They are concentrated in the oases of the Adrar, Tagant, Assaba and the Hodh. Annual production is estimated at 10,000 tons which is apparently sufficient to cover domestic consumption needs. With few exceptions, date palms grow wild without pruning or special care. Yields are accordingly low and variations in quality are considerable. Although adequate ground water appears to exist for irrigation in the main producing areas, the modern large scale cultivation of dates is retarded by a number of factors. Principal among these is the fact that it takes a tree about five years to bear fruit. With limited capital, few Mauritanians can afford to invest in plantation culture without return over such a long gestation period. In fact, the bulk of the trees are owned by a few absentee landlords whose principal occupation is livestock. They have little interest in the difficult process of introducing modern technology in cultivation, packaging and distribution, to say nothing of directing the relatively large labor force that a plantation culture of dates would require. Accordingly, they are satisfied to rent their trees for the annual output and collect whatever revenue this yields.

Other Crops

51. Small quantities of wheat, corn, rice and other crops are grown in isolated areas. The cultivation of vegetables has begun in the oases of Atar and Chinguetti, while market gardening has started on a small scale near Nouakchott and Rosso. In general, great deficiencies exist in the production of vegetables. These deficiencies result in low quality and high prices.

52. The output of gum arabic, which contributes some CFAF 350 to the gross domestic product annually and an export of 2,000 tons (value estimated at CFAF 100 million), is gradually diminishing because of destructive cutting practices.

53. The first formal Mauritanian Four-Year Development Plan was originally scheduled to cover calendar years 1963 through 1967. Since the approval of the National Assembly was not obtained until July 1963, the effective dates of the Plan were adjusted to cover the period June 1963 through June 1967. Figures comparing the actual results with the projections in the Plan by sector and project are available for the first three years of the Plan, that is June 1963 through June 1966. Since the end of 1966 the Plan has no longer been considered an effective guide to development planning. The Government decided to use 1967 as a year of reassessment and preparation for a new four-year plan scheduled to start on January 1, 1968.

I. Objectives

54. The Plan was based on two fundamental objectives:

(1) To complete the independence of the country by reducing its effective subservience with respect to its dependence on foreign financing and on foreign personnel.

(2) To prepare the base for the next stage of development beginning in 1967 which was to be a stage of social economic development for the benefit of the entire nation.

55. The first objective was to be accomplished by a policy of "draconic" austerity in public expenditures coupled with fiscal reforms to increase revenues leading to an elimination of the current budget deficit. Adequate credits were to be provided for maintaining the national capital stock while a proper investment budget was to be established.

56. A program of systematic training and placement of personnel based on a census of the needs at all levels was to be undertaken in order to reduce the dependence on foreign resources while providing for the increasing demand for trained cadres thereby enlarging the absorptive capacity for investment.

57. The second objective was to be accomplished in part by a series of basic studies of the nation's human and material resources to enable the objectives of the Second Plan to be quantified. In addition, a program of

---


2/ Plan Quadriennal de Développement Economique et Social, 1963-66, République Islamique de Mauritanie.
basic infrastructure investments was envisaged for roads, communications, schools and hospitals including the stimulation of regional poles of development. In the livestock sector, sanitation, water projects and capital intensive processing and commercialization facilities were projected. In agriculture, major dependence was placed on pilot hydro-agricultural works. Social investments were to be limited to the minimum. Encouragement was to be given to the establishment of small Mauritanian production and service enterprises to integrate the public services, the big enterprises and the traditional sectors.

II. Evaluation of Results

58. The results of the Plan for the first three years and in some respects up to the present can be evaluated in two ways. First, the results can be compared with the stated objectives. Second, the economic activities which occurred during the Plan period, and which may be considered to have had some relation to the Plan, may be evaluated in terms of such criteria as the optimal use of resources and their contribution to economic development.

59. No elaborate analysis is necessary to determine that the fundamental objectives were by and large not achieved. With respect to reducing Mauritania's dependence on external finance, it is true that the Government renounced the French current budget subsidy in 1963 and simultaneously introduced an austerity budget designed to force current expenditures to match current revenues. Some new tax revenues were obtained, but the reform of the fiscal system foreseen did not take place. In fact, current revenues rose by 50% between 1963 and 1967 (budget projection) while current outlays rose by 18%. Most of the rise in receipts was from increased taxes and advances paid by the MIFERMA iron mines.

60. Budgetary resources were often allocated on grounds other than their likely contribution to economic development. In the absence of an adequate system of control, personnel expenditures rose by 26% from 1963 to 1967 while other expenditures were either stable or decreased in this period. High priority outlays were subjected to the draconic economies proposed by the Plan. For example, instead of providing adequate credits to maintain the national capital stock, maintenance outlays were cut from CFAF 107 million in 1963 to CFAF 81 million in 1964 and only 143 million was projected for 1967. According to the Mission's calculation at least CFAF 250 million would have been necessary annually just to have adequately maintained road systems. Instead of creating a proper investment budget to administer the available foreign investment resources to the big works, the State investment budget included only a number of residual items which could not be covered in the current budget and which could be paid out of special supplementary grants from the FAC. The bulk of the investment program remained outside the State investment program and was financed and supervised directly by the FAC and FED under a system of agreements with the Mauritanian Government. A more detailed analysis of the fiscal situation is contained in Chapter Five.
Only limited progress can be said to have been made in reducing the dependence on foreign personnel. The census of requirements for technically trained personnel at all levels which was to have been the basis for a systematic program of training and placement was evidently never carried out. In some respects, the information available today on the composition and size of the labor force in the modern sector is inferior to what was published in 1962. Recent organizational changes in the Government have focused attention once again on the problem of training and there are prospects for improved performance in this field. Because of the limited progress made to date with the Mauritanization of the public services and because of the rising requirements for trained people, the number of foreign technical personnel has remained approximately constant during the past four years. In a number of fields there are not enough technically trained people, either expatriates or Mauritanians, to perform the work required.

The second fundamental objective concerned the preparation of the basis for general economic and social development during the Second Plan period. This was to be accomplished mainly by the completion of certain fundamental studies as well as by a program of infrastructure investments. The program of studies was based on the quite reasonable proposition that national planning was impossible in the face of an almost total lack of knowledge about the demography, family consumption habits, commerce, surface and sub-surface resources and rural production.

But the only statistical study accomplished, at least in part, was that by SEDES on demography. The results of a pilot inquiry undertaken in 1962 were published in 1964. This was followed by a more general demographic survey in 1964-65, the provisional results of which were published in October 1966.

This study is being revised and a complete census will be undertaken later at a time as yet unspecified. Financing has not yet been obtained for the family budget study while the study of interior and exterior commerce has been postponed until the next plan.

A modest program of geological aerial surveys and geological mapping was included in the Plan. This program is largely on schedule and has resulted in some interesting indications of mineral deposits (beryllium, chrome, fluorine). In view of the extent of area to be surveyed the sums projected in the Plan were not large. No detailed studies of agricultural land resources exist. There are also no reliable statistics on output in the agricultural sector. Figures on the livestock sector are only partially reliable.

In general it is no exaggeration to say that the basic knowledge of the country's people and resources at the beginning of the Second Plan period has advanced only slightly since the outset of the First Plan.

67. In transport infrastructure the objective of the Plan was to relieve the isolation of the eastern part of the country by creating a coherent network of roads and other means of communication which would progressively replace the commercial circuits around Dakar with commercial circuits centered around Nouakchott and Port-Etienne. These investments were to be limited to a level consistent with the capacity of the current budget to provide adequate maintenance outlays.

68. Actual payments on investments for roads amounted to CFAF 633 million in the first three years, compared with CFAF 875 million projected.\(^1\) The Rosso-Nouakchott road projected for completion during the Plan will not even get under way until this year partly because of design changes and other problems. The work on the Kiffa-Kaedi road was completed but because of gross errors in design the work will have to be largely done over. Modest improvements were made on a number of other interior tracks in the desert. Financing was not obtained for important projected routes in the south, in particular the Rosso-Kaedi road.

69. Investments in river works reached only CFAF 28 million out of CFAF 150 million projected, mainly for the port of Boghe. Only a study was completed, no financing was obtained. The wharf at Nouakchott, the key investment in the policy to tie together the east and west, was completed in three years with total payments of CFAF 608 million compared to CFAF 520 million projected.

70. In education and training approximately less than half the sums projected were actually spent in the first three years as a result of delays. The school age population was stabilized at a lower number than had been expected. Secondary school enrollment was not sufficiently selective and classes were larger than foreseen. With a lower than expected primary school population, the program of regionalizing secondary instruction was stopped. Specialized and vocational training goals were only partially met.

71. In public health total payments were some 100 million less than the CFAF 743 million projected. The Nouakchott hospital was put into service with some delays and a number of clinics and centers were opened.

72. In the fields of urban development, water and electricity, total public expenditures were CFAF 470 million rather than CFAF 2.8 billion as projected, although financing was obtained for CFAF 2.5 billion. In particular, the projects for increasing Nouakchott's water supply were subject to great delays, changes and cost increases.

73. Expenditures for local government and national defense buildings reached about one-third of the amounts projected in part because of the lack of foreign financing. Investments in rural production which were projected at CFAF 1.9 billion or some 9 percent of total investments, for the three-year period, lagged far behind with actual expenditures of CFAF 688 million.

\(^1\) Bilan Plan Quadriennal 1963-1966, op. cit.
The abattoir/refrigerator plant and feeding ranch at Kaedi which was supposed to start operating in 1963-64 has not yet been completed. The cost will exceed the original estimate.

Several small hydro-agricultural projects were begun with questionable results. Of 66 wells projected for the Hodh, 20 were completed. Work was completed on 20 new vaccination parks, and the program of vaccination was continued.

As for the objective of creating a number of small Mauritanian enterprises to produce goods and services as part of a network of activity tying together the previously isolated sectors of the economy, actual results are difficult to evaluate. With the completion of the wharf at Nouakchott, the Government created a monopoly on the import of basic consumer goods (Sonimex) with a view to replacing imports from Dakar. In 1964, a national control service (ONTP) was set up for the Road Transport industry which has the power both to allocate freight and to set rates. Neither of these developments was foreseen in the Plan and both have involved considerable expenditures on the part of the State. As is explained in more detail in Chapter Three, there are serious grounds for questioning the success of these organizations in meeting national objectives.

The published analysis of the first three years of the Plan indicates that projected public and private investments for the first three years of the Plan totalled CFAF 22.7 billion whereas investments realized totalled CFAF 28 billion. Another CFAF 1.3 billion of so-called realizations took place outside the Plan. In this context realization refers to finance obtained, not to actual expenditures. Investment expenditures amounted to CFAF 18.5 billion during this period. Of the CFAF 5.3 billion excess of investments realized over those projected, CFAF 3.4 billion can be attributed to the mining sector alone which was dominated entirely by MIFERMA. The costs of investments in mining and processing facilities considerably exceeded the amounts originally believed to be necessary.

In the fishing industry, the investment funds obtained were more than double the CFAF 1.5 billion forecast. The considerable over-investment in facilities which largely accounts for this is discussed more fully in Chapter Four.

The important question to consider in evaluating the outcome of a development plan is not whether the amount of money obtained or spent exceeded the amounts projected. As has been shown, the principal reason for the excess in this case was the higher than estimated cost of a private mining investment. Not only was this unrelated to any influence by the planning mechanism of the Government in directing resources to achieve national objectives, but insofar as the excess expenditure did not involve a comparable rise in output, the returns per unit of investment were reduced. In the case of MIFERMA, the failure to realize profit expectations is an indication of higher than estimated costs as well as lower market prices for iron ore. Investment by itself is not necessarily beneficial to develop-
What is important is the stream of output an investment will produce, which ultimately can be reduced to its rate of return or profitability. It is only by increasing the productive capacity of the economy that investment becomes important.

80. In a significant number of cases investments undertaken during the period of the First Plan exceeded projected amounts because of faulty forecasting, errors in execution or changes in plans. More importantly, in a significant number of cases investments were undertaken without regard to the criteria of highest priority based on the contribution to development. Projects were not ranked according to their rates of return. In some cases projects were undertaken as if the funds involved were virtually a free good. While it is true that the principal sources of plan finance in the public sector are FAC and FED grants, as long as these are not unlimited in amount, it is necessary to treat them as a scarce resource whose allocation must be subject to the same rate of return test as any other expenditure undertaken in the name of development. A notable case in point is the fishing industry in Port Etienne. Clearly excess public and private resources have been and are being invested without regard to the fact that neither the necessary quantity of fish nor adequate final markets have been secured to enable installed capacity to be used at even the minimum levels necessary to avoid losses. Even on the assumption that both fish and markets were available, the capacity of the port was made too small to handle them. To the extent the investment involved is not profitable, i.e. does not return enough to make a normal profit after covering replacement charges on capital, the capital invested has in effect been lost. Instead of investment increasing the national wealth in this case, it has decreased it, since such investment could have been employed elsewhere at a higher return.

81. In terms of national accounting, badly conceived investments can be misleading as they contribute to the gross domestic product and give an illusion of far greater real growth than that which has occurred.

III. The Conceptual Problem

82. Much of the success or failure of planning depends on whether the development problem is properly conceived by the planners and, in particular, whether the Plan is based on a realistic evaluation of the facts at the time it is drawn up. Planners must find the optimal way of achieving stated objectives, given scarce resources and the limited absorptive capacity of the country. If a development plan is well conceived, it will not only allocate existing resources in an optimal way but it will lead to the growth of new resources which can be used to stimulate future growth. In the process of the growth and change brought about by a plan the number of profitable alternative uses of resources should be made to increase. In effect, this means that absorptive capacity should be increased and the prospects for greater growth enhanced. In the case of Mauritania, the widening of the number of profitable choices would lead to much greater independence and control over future development by Mauritanian policy makers.
The projected allocation of public and private resources in the last plan provides an important clue about objectives and priorities.

A third of total investment was allocated to mining almost equally divided between iron ore at Zouerate and copper at Akjoujt. Urban development, both regional and in the main centers, was allocated 15% of total investment. A further 12% was allocated for transport and communications infrastructure and only 9% for the rural sector (agriculture and livestock). Studies, which were one of the main objectives, were allocated less than 6% of total investment.

The planning authorities and Government can directly influence only the public sector. While 60% of private sector investment was in mining and the Government played a substantial role in the granting of concessions and in fixing the terms of operating conventions, the basic decision to exploit the deposits as well as the bulk of the capital required belonged to private foreigners. The public sector accounted for about half of total projected investment. In the public sector close to a fourth was allocated to transport and communications infrastructure and an almost equal amount to urban development. Rural production received 17%. About half of this was allocated to agriculture mainly for several capital intensive hydro-agricultural projects. Of the balance allocated to the pastoral (livestock) sector about two-thirds was for the construction and maintenance of rural wells and about one-third for refrigerator plants and abattoirs. A small sum was set aside for immunization parks. Training and education received only 6.7%, of which about half was for secondary, general and technical education; a small share was for vocational training. The fishing industry at Port-Etienne was allocated some 7% of total public investment.

Nearly half of the allocation of public investment resources, including a large part devoted to transport infrastructure and urban development, was not allocated in accordance with productive criteria. In the case of transport infrastructure, present studies indicate that only the route Rosso-Nouakchott may be economically justified in terms of present and potential freight tonnage. Similarly the wharf at Nouakchott and the port facilities at Port-Etienne may be justified by the role assigned to these ports as centers of national economic activity.

One might reasonably ask what investment test was applied to the other one billion or so of road investment to say nothing of the investments projected in other forms of communication. The Plan itself projects expenditures by project which are not evaluated by rate of return or by their place in a national pattern of mutually complementary investments. Even where investments are undertaken for non-development reasons their cost in lost output should be made clear to policy makers.
Table 1: ALLOCATION OF INVESTMENTS OF THE FOUR-YEAR PLAN 1963-1967a/

(CTAF millions)

<table>
<thead>
<tr>
<th>Nature of Investments</th>
<th>Amount of Investments</th>
<th>% of Public Investments</th>
<th>% of Private Investments</th>
<th>% of Total Plan Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies:</td>
<td>Public 580.8</td>
<td>4.3</td>
<td>-</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>Private 1,000.0</td>
<td>-</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Transport &amp; Communication Infrastructure:</td>
<td>Public 3,191.0</td>
<td>23.5</td>
<td>-</td>
<td>12.1</td>
</tr>
<tr>
<td></td>
<td>Private 160.0</td>
<td>-</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Rural Production:</td>
<td>Public 2,352.0</td>
<td>17.4</td>
<td>-</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>Private 48.0</td>
<td>-</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Mining Production:</td>
<td>Public 800.0</td>
<td>5.9</td>
<td>-</td>
<td>33.8</td>
</tr>
<tr>
<td></td>
<td>Private 8,580.0</td>
<td>-</td>
<td>60.5</td>
<td></td>
</tr>
<tr>
<td>Fishing Industry:</td>
<td>Public 960.0</td>
<td>7.1</td>
<td>-</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>Private 950.0</td>
<td>-</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>Services &amp; Commerce:</td>
<td>Public 1,270.0</td>
<td>-</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private -</td>
<td>-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Training of Personnel, Education and Information:</td>
<td>Public 922.5</td>
<td>6.7</td>
<td>-</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Private -</td>
<td>-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Health &amp; Hygiene:</td>
<td>Public 770.4</td>
<td>5.7</td>
<td>-</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Private -</td>
<td>-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Urban and Municipal Development:</td>
<td>Public 3,043.0</td>
<td>22.4</td>
<td>-</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>Private 980.0</td>
<td>-</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td>Administrative, defense, interior, judicial and foreign affairs:</td>
<td>Public 1,188.0</td>
<td>9.0</td>
<td>-</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>Private 1,200.0</td>
<td>-</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>PUBLIC 13,566.7</td>
<td>100.0</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>PRIVATE 14,188.0</td>
<td>-</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

a/ The figures in this table refer to the entire four-year plan period, whereas the preceding analysis of the outcome is based on the projections and experience of the first three years.

Source: Plan Quadriennal, op. cit., p. 10.
88. Urban development may well have some justification in a program of development, but it is doubtful whether there is any necessary or direct relation to production. While such investments may well be justified for other reasons, relating to the establishment of a new state, it must be recognized that they involve large recurrent and maintenance expenditures. It is not only a matter of the allocation of scarce current investment resources but also involves the use of future resources. Thus the growth of present and future output is adversely affected by a misallocation of investment resources in the past. One of the problems of resource allocation in the past seems to have been that infrastructure investment was regarded as a necessary precondition to economic development.

89. The rural sector, agriculture and livestock, employs about 90% of the population, the bulk of whom are living at subsistence levels of consumption. In agriculture, the allocation of the bulk of the investment funds to highly capital-intensive projects was based on an incorrect analysis of productive possibilities. This analysis was based on the assumption that the ecological limits had been reached in the culture of millet and sorghum. It was assumed that even if improvements were made by submerging the fields and using better technology such as fertilizers, fungicides, and plowing, the maximum increase in output that could be achieved would be 30% and then only over a long period. Capital-intensive agricultural works including the diversification of crops could increase production more rapidly but only if investments ranged in the billions of CFAF. The basic deficit in foodstuffs would remain presumably in any case because of demographic pressures.

90. The results of recent experiments indicate that traditional production can be raised substantially through the use of fertilizers, fungicides and plowing. Also, the 50% yield increases projected for the flood plain areas and those somewhat lower for the dry farming areas are not only conservative for an average four-year goal but are attainable at relatively small cost (see Chapter Four, Section I, A). Further, output can be raised

---

6/ For example, a recent planning document points out that the small proportion of investment devoted to the rural sector was based on the proposition that the construction of a complete infrastructure (roads, maritime, air, etc.) was an essential precondition for Mauritania. This choice was considered realistic and wise as Mauritania at the time of its independence did not contain the infrastructure or experienced administration necessary to permit the undertaking of "classical" economic programs and to set precise quantitative objectives, except for limited agricultural and pastoral operations which could serve as poles of training for future economic development. Nowhere does one find any consideration of the returns to investment or justification of the choices on economic grounds. See Plan Quadriennal 1963-66: 3 années d'exécution, op. cit., p. 27.

7/ Plan Quadriennal, op. cit., p. 24.
on the extensive margin simply by bringing unused ground under cultivation. This again is relatively simple if animal drawn plows are introduced, enabling each farmer to extend the amount of terrain he can cultivate. In effect, this is what was done in the dry farming area of the Hodh Oriental with some success. Shortages of manpower prevented this terrain from being used up to now. Such a program which would increase productivity and production could close the food gap within a few years. Third, hydro-agricultural works of the type projected in the Plan are not aimed at increasing the production of millet and sorghum. These may be considered only as by-products of rice, as rice is the only crop for which the return might justify the relatively large investments required. The huge sums spent so far have increased output relatively little. For example, the dams of the East which will cost CFAF 350 million will not be able to inundate enough terrain for the production of millet to yield more than a negligible rate of return, if any. Perhaps only the project for the Plain of Boghe, which is still in the experimental stage, might become profitable if modifications are introduced (see Chapter Four).

91. In the pastoral sector it was erroneously assumed that fundamental changes in the system of commercialization would be necessary to improve the standard of living of the farmers. By emphasizing the potential consumption of meat in the new urban centers, the Plan called attention to a very limited market. While this market is worth exploiting, it can hardly affect the incomes of the bulk of the livestock herders. Even the Kaedi abattoir-refrigeration plan when at capacity after some years will lead to exports of not more than 3,000 tons a year. The livestock sector relies on the export of live animals on foot through Senegal. This amounts to some 30,000 tons annually plus some 20,000 tons of local consumption. This system yields relatively high returns in comparison with meat production elsewhere in Africa. To attempt to change the system in a short period with massive investments and motorized transport could cause costs to rise sharply and returns to the farmers to fall. The one area where substantial gains in output have been made is sanitation. The installation of 20 relatively cheap vaccination stations during the last few years, even though not well located, and the new wells have been principally responsible for a rise in the number of animals produced. Further investment in this direction would seem warranted by the favorable results achieved so far, although returns will necessarily diminish as the program of vaccination becomes increasingly successful.

92. Finally, as far as developing alternative investment possibilities and thus increasing the absorptive capacity for new profitable investments, the Plan must be considered to have been deficient in concept. The Plan contains no systematic program to accomplish this objective, an objective intimately related to future economic development. In education the sums allocated to creating new cadres and to providing vocational training were not directed to carefully evaluated future needs. Investment in such training can be among the most productive from the point of view of adding to national income.
93. Note has already been taken of the failure to accomplish even the basic studies projected in the Plan at a relatively small cost in relation to total public investment output. In the absence of basic knowledge of the economy and its resources the possibilities of widening the scope of investment planning are limited.

94. Even the formation of rational economic policy is rendered difficult by the absence of basic statistical studies. For example, the lack of reliable external trade statistics makes it difficult to formulate a policy with respect to custom duties and the customs union with Senegal. The size of the market for basic consumer goods can only be guessed by the State import agency. The losses in resources because of incorrect decisions or failure to make timely decisions in matters such as these can be enormous.

95. In summary, the Plan may be said to contain three basic deficiencies in conception. First, it was not oriented towards increasing output, rather it overemphasized investments which either inherently involved no rate of return or could not be justified by any rational calculation of return. Second, the basic assumptions with respect to the traditional sectors containing the bulk of the population were faulty. Not only was the share of investment funds allocated to these sectors too low but the funds provided were to a great extent misallocated. No doubt misconceptions with respect to the production possibilities in livestock and agriculture also influenced the programs of technical training for these sectors. Finally, the Plan did not adequately provide for widening the scope for profitable investments in the future. The program of projected studies was limited, and the program for training personnel needed in order to undertake new investments was inadequate.

96. In addition to these conceptual weaknesses the Plan contains no analysis of rates of return, nor priorities in terms of resources available or timing of investments for achieving the optimum results. There is little or no analysis of the relation between sectors and accordingly of the relation among investments in one sector and those in another. The sectoral discussions are not based on long range perspectives. It is thus difficult to establish priorities between projects in individual sectors and perhaps impossible to draw up meaningful list of projects for study and future financing.

97. The following table sets forth the quantitative objectives of the Plan by sector to the Gross Domestic Product.
Table 2: PLAN OBJECTIVES  
(in 1962 market prices)  

(CFAF billions)

<table>
<thead>
<tr>
<th></th>
<th>1962</th>
<th>1966</th>
<th>Average annual rate of growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Sector</td>
<td>11.0</td>
<td>11.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Secondary Sector</td>
<td>7.9</td>
<td>15.7</td>
<td>19.1</td>
</tr>
<tr>
<td>Mining</td>
<td>(0.6)</td>
<td>(9.5)</td>
<td>100.0</td>
</tr>
<tr>
<td>Food Industries</td>
<td>(0.2)</td>
<td>(0.7)</td>
<td>32.0</td>
</tr>
<tr>
<td>Buildings</td>
<td>(6.9)</td>
<td>(5.2)</td>
<td>-5.8</td>
</tr>
<tr>
<td>Diverse</td>
<td>(0.2)</td>
<td>(0.3)</td>
<td>10.7</td>
</tr>
<tr>
<td>Tertiary Sector</td>
<td>2.1</td>
<td>3.3</td>
<td>11.9</td>
</tr>
<tr>
<td>Administration Salaries</td>
<td>3.4</td>
<td>3.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>24.4</td>
<td>34.6</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

98. The great bulk of the projected increase in GDP was in the mining sector. Important gains were also forecast for the fishing sector. The building sector was projected to decline as a result of the completion of the MIFERMA and other investments. In accordance with the objectives stated and the planned allocation of investment under the Plan the rural sector was expected to show very little progress and it was assumed that per capita incomes would remain virtually stagnant given the anticipated rise in population.

8/ Plan Quadriennal, op. cit., p. 233.  
"The rural sector will show a very slow rate of progress since the main objectives of the Plan concern infrastructure, training of personnel and the equilibrium of the national budget and since in addition the development of the rural sector requires a time consuming period of training the rural population in modern techniques of cultivation and large investments which have not been able to obtain approval in the period 1963-1966."

IV. Administration and Execution

99. If the national plan is to be anything more than a statement of good intent it must be administered by an organization capable of coordinating, supervising the execution of, and adjusting programs in the short term in the light of experience and the resources available. When the Plan was published, provision was made to place it under a Commissioner General in the Office of the President. The Commissioner General was to be responsible for the administrative services and consultative organs dealing with the elaboration, application, animation and control of the Plan except for certain specific tasks which were relegated to the appropriate Ministries. The Plan Organization was to take its authority directly from the highest office in the country as the importance of the Plan as the "engine of development" was such that it would influence the political situation and the Plan Organization would be required to arbitrate between the different sectors of national economic activity. The Plan Organization was shifted in 1965 to the Ministry of Finance and in late 1966 to the Ministry of Foreign Affairs. The Plan Organisation today has no authority to coordinate the development activities of the various parts of the Government nor can it supervise the execution of projects. Even the process of studying, gaining approval and finding finance for new projects often escapes its control as individual ministries frequently deal directly with higher authorities and external sources of finance. Finally, the Plan Organization is inadequately staffed to perform real planning functions. There are neither qualified personnel to draw up new plans by examining the alternatives open to the economy and selecting the optimum way of using scarce resources to achieve objectives, nor people capable of evaluating the economic impact of the programs underway.

100. The Plan Organization consists of three experienced senior expatriate officials plus a Director and his newly appointed Deputy. One service translates the projects proposed by individual ministries into requests for foreign financing. This is a coordinating and negotiation function which is particularly important as virtually all financing comes from the FAC and FED. A second senior official supervises and controls expenditures for projects financed by FAC and FED. His presence is a necessary condition to receiving finance from these agencies. A third service is the Government's Statistical Service and is only indirectly related to the functions of a planning agency. (See Chapter Five for a fuller discussion of the Plan Organization.)

101. Given its recent history, lack of authority and lack of personnel, the Plan Organization cannot be held responsible for the deficiencies in execution which were outlined earlier. A review of the experience of the first three years of the Plan indicates that a significant number of projects selected were not carefully and competently studied even when foreign contractors and consulting firms were involved. This has not only led to widespread delays in execution but has also been responsible for costs greatly exceeding estimates in a significant number of cases. With no effective coordination of the development programs under way, government supervision and control was spotty and at times nonexistent. The loss to the national economy from these delays, excessive costs and at times non-profitable projects has been enormous.
CHAPTER THREE: A STRATEGY FOR DEVELOPMENT

I. General Perspectives

102. The Islamic Republic of Mauritania is a young country with an old and rich heritage. It has been sovereign only since 1960 and the present form of Government was adopted only in 1962. Accordingly, its administrative apparatus lacks experience in running the day to day affairs of a modern government to say nothing of the problems of formulating economic policy and drawing up and executing a national plan of economic and social development. Although the political entity exists, the difficult process of creating a nation from what was, not long ago, a tribal society, is still going on. The country is vast and the relatively small, primarily nomadic population is concentrated in widely separated areas of economic activity such as the mines and oases in the Northwest, the farming regions of the river and the vast pastures of the South and East. The traditional commercial and cultural ties with the neighboring states of Senegal and Mali in the South and East still exert a strong pull and in the case of livestock constitute a necessary economic outlet. Finally, there are ethnic and cultural differences between the dominant Moors North of the river and the diverse, largely farming, Negro tribes on the river banks. Despite these obstacles great progress has been made in establishing Nouakchott as the political and administrative capital of the country. It is increasingly drawing to it an important part of the trade with the South and East as part of a process of tying the country together along economic lines. Most importantly the political system has produced a large measure of stability and even unity of purpose, both essential pre-conditions for economic stability.

103. Mauritania nevertheless has a harsh climate and is poor in natural resources. Its people are largely uneducated, with a subsistence standard of living in a basically barter economy. The country lacks a modern transport and communications infrastructure. At present there is insufficient traffic to justify major investments in this field. It is deficient in economic and social institutions and generates little in the way of mobilizable savings to finance development.

104. Development planning must proceed from the facts as they are. The economic choices open to the Government are limited by the structure of the economy, the nature of the labor force and the resources available for investment. In the end the real development decisions concern the choice of investments in terms of short- and long-run profitability criteria. If other than profitability criteria are used it must be recognized that part of potential growth has been sacrificed for other reasons.

105. In our approach we have assumed that the basic objective of economic development is to increase the economic well-being of the bulk of the people. This approach does not deny the desirability or even necessity of expenditures for welfare, culture or national sovereignty.
Rather it is based on the proposition that in a poor country such expendi
tures will inevitably be limited and that the best way of providing for
non-economic needs is to increase economic resources so that in the future
adequate amounts will be available for such purposes. This implies some
sacrifice of present consumption on the part of the Government and the
people. It further implies that maximizing profitable outputs will be the
aim of national policy. More specifically we believe that the most effective
policy is to maximize short-term growth. Not only are accurate long-range
predictions difficult to make with inadequate knowledge, but short-run
maximization is most likely to produce the greatest gains with the least
distortions. Where appropriate we have taken into account the long-range
perspectives in each sector. These longer-range perspectives provide a
basis for choosing among the short-range alternatives. If the selection
process is done in a rational way the resources available in the future
will have increased, the structure of the economy will have changed and
alternatives not now possible will become profitable. In short the horizons
given to planners and decision makers will increase over time and the
objective of improved welfare will be achieved more rapidly. This is not
to say that long-range pay-off decisions should not be made. On the contrary,
given the long-range perspectives in each sector certain investments should
be made now in order to make available the volume and kinds of output needed
at various times in the future. This is best illustrated in the case of
technical training where long lead times are required to produce trained
manpower for future needs. The problem is not to overinvest in such long-run
pay-off projects otherwise both the current and the future resources needed
for maintenance and replacement will in effect have been sterilized to the
detriment of growth in both the short and long run.

II. The Sectoral Perspectives

106. As has been pointed out, the Mauritanian economy is strongly dual
in character. The modern mining and fishing sectors have been or are being
rapidly developed in the North by outside capital and skills. These
"enclaves" of Western capital and production have had and will continue to
have little influence on the basic productive structure of the economy and
the mass of the people. The mining sector yields important revenues to the
Government budget. These revenues can be expected to increase significantly
only in the distant future after the copper mine becomes fully exploitable.
The amounts involved are not, however, sufficient to liberate the Government
from the tyranny of inadequate current resources in relation to current needs.
An increase in current budgetary resources will remain dependent on the
growth of output and incomes in general. In fact development financing
must still be provided in the form of external assistance. The exports
produced by the industries can be an important basis for the acquisition
of additional resources through foreign borrowing. However, even in this
case, sufficient domestic current tax revenues must be generated to service
new debt. The fishing industry has been less well planned than the mining
enterprises. Substantial investment has taken place without regard for
properly timed complementary investments and elementary supply and demand
factors. This is a result of poor public and private planning and can only
be remedied by a thorough review of the situation which would lead to a
series of specific proposals designed to provide a minimum level of profitability for the investments already made. No new investments are recommended at the present time. Little in the way of resources can be expected to accrue to the State to finance development in the near future. The enclaves provide limited employment opportunities for skilled labor and limited markets for the agricultural products of the rest of the country.

107. The basic problem is what to do about the 90% of the population in livestock herding and in millet farming. Our assessment of the economy indicates that a great deal can be done to significantly increase output in these sectors by the intelligent allocation of investment resources and the application of appropriate Government economic policies. Precisely because productive methods are so backward and land resources underutilized, the introduction of higher yielding inputs and strategically placed investments such as wells and plows can increase output greatly. Our strategy is to propose a coordinated action program of investments, training and public policy by priority designed to exploit these potential gains as rapidly as possible. To avoid a dispersion of talent and resources we will propose a concentration of effort in key livestock areas of the South and East and in the heavily populated millet zones of the Gorgol-Brakna region. The most important gains are projected for the export-oriented livestock sector. Significant increases in output in the cultivation of millet will lead to import substitution. Simultaneously we will propose a program of project studies designed to produce a series of feasible projects for execution during the succeeding period of the Third Plan. The projects suggested for the later period of the Second Plan will be complementary - e.g. rice and sugar cane cultivation - to the basic short-run purpose of raising the livestock and millet output. As population pressures are not great 1 the gains in basic output should be reflected in significant per capita income gains by the bulk of the population.

108. This should lead to a rise in consumption, savings, the import substitution of imported foodstuffs and the commercial exports of meat and animal products.

109. The program proposed in the short run does not involve a sharp break with traditional practices and should accordingly be more acceptable to the producers involved than a program based on the sudden introduction of modern techniques. One important result of increasing output will be the increase in commercial exchanges and the progressive transformation of the traditional subsistence-barter economy to a more sophisticated market economy which will respond better to economic incentives. The Government can assist in this process by encouraging the abandonment of remaining feudal-tribal patterns which either discourage producers by siphoning off a part of potential output gains or limit their personal stake in the land they till or the crop they produce. It is to be sure a difficult process,

---

1/ Population is estimated to increase at the rate of 1.7% per annum.
particularly in sedentary agriculture where knowledge of land tenure arrangements is incomplete. Changes must be introduced gradually so as not to destroy existing socio-economic patterns before they can be replaced by new patterns.

110. The monetization of the rural economy can be encouraged by other Government measures. The subsistence farmer and herder is usually subject to the most exploitation, as he has to borrow on onerous terms from local merchants in order to survive through the non-productive season and then must use his limited output to pay back what he has borrowed. The intelligent use of price support and credit policy with a program of developing local cooperatives to store output and finance necessary inputs can break the barter system while providing the means to increase output per man. In this connection the authorities will have to consider the problem of marketing eventual regional surpluses. In short, a fully coordinated program will have to be mounted if the proposed development of peasant agriculture is to be successful. The cooperative movement is just beginning in Mauritania. Despite difficulties experienced so far we recommend the creation of a series of farmers' associations or simple cooperatives which will constitute the basic institutional element in the execution of the cultivation program.

111. Serious consideration should be given to the effectiveness of the national transport control (ONTP) and basic consumer goods monopoly (SONIMEX) organizations in meeting national objectives. The ONTP has been in existence for several years. The SONIMEX is new and should be given time and means to carry out its functions before any final judgments are made. Both organizations have the same basic objective of supplying the consumer continually and adequately with reasonably priced basic consumer goods from the port of Nouakchott. These goods must be supplied at prices which make them competitive with contraband imported from neighboring states if the policy is to be successful. In fact, the pricing policies of the organizations are not coordinated.

112. The implied subsidy of supplying transportation at lower than its economic cost should be recognized. It is the rest of the economy which ultimately pays for such lower freight costs and thus resources are diverted from other more profitable uses. In addition, a policy of artificially reducing freight rates, below the level required, to make goods from Nouakchott competitive in the remote regions runs the danger of encouraging irrational investment in these regions. Such irrational decisions can only be supported by a continued freight subsidy.

113. The issue is not whether State or private enterprise is in principle preferable. In a country with limited and widely separated markets, as well as few entrepreneurs, the real issue is which form of organization achieves the most practical result. In the present case we see little evidence that either the high costs or limited benefits of the national transport monopoly justifies continuing the complete control of freight rates, the allocation of freight, and new investment in trucks. Accordingly, it is recommended that competition be reintroduced in road transportation
in order to gain the benefits of lower costs and competitive pricing of freight traffic. In order to provide resources for necessary subsidies, taxes should be levied by the State on transportation. The State could then pay the subsidies directly from the budget. The main instrument for providing an adequate supply of reasonably priced goods should be SONIMEX. This organization could supply the market in various localities through a network of private intermediaries supported by adequate credit and local stocks. In order to do this effectively, the organization would need increased capital, credit, trained personnel, and a healthier relationship with the private commercial sector. A situation should be avoided in which a State monopoly incurs high cost, because of inefficient operations, and then requires continuous State subsidies which must be provided directly from the budget or indirectly in the form of special tax relief.

114. The entire credit structure needs to be reexamined with a view to creating a system which can respond to the needs for development, both private and public. At present there is a single private commercial bank (BIAO) and a Government Development Bank (BMD). Neither of these institutions have been willing or able to grant adequate credits to the productive sectors. In particular, credit resources must be made available to cooperatives in the rural sector. In fact an enormous annual export of both private and official deposits takes place, which in effect makes Mauritania an exporter of capital. Despite this the Government, SONIMEX, the cooperatives, and private businesses lack adequate credits to finance their activities.

115. In the field of education no great increase in resources is recommended. While important for cultural reasons, any great expansion in primary and secondary education would greatly increase the recurrent financial charges of the State budget and could only be undertaken at greatly increased cost per pupil in view of the nomadic nature of a large part of the population. Further care must be taken not to graduate more primary and secondary school pupils than can be absorbed in gainful employment by the State or they will have to be absorbed in unnecessary positions at great cost to the budget. In the short run education may be regarded as a consumer good, the supply of which must be limited in the interests of current development. The education program does envisage a change in emphasis in secondary school education toward that more clearly aligned to the needs of the economy. On the other hand spending for technical and vocational education may be regarded as investment in the human resources necessary to achieve development objectives. Detailed recommendations are made in the action program to ensure an adequate supply of trained cadres. The use of scholarships in this connection is also recommended in the program.

116. In transportation and communications infrastructure the great deficiency in facilities is recognized. The Mission believes that the national objectives of making Nouakchott the principal port of entry and of tying it economically with the remote regions of the South and East can be achieved with investments for which financing has already been obtained. There is an urgent need for current financing for maintenance.
The exceedingly low present and prospective volumes of traffic on the road network make it difficult to justify further large investments in road construction on purely economic grounds. Further investments in road transport should, in the opinion of the Mission, be postponed until they can be justified by the economic development of the regions in question. While it may be true that roads will generate traffic by their very existence it is doubtful on the basis of our analysis that the traffic so induced would justify the costs, both capital and current, for a considerable period of time. The real choice is between investing in non-profitable road projects now and investing in immediately profitable, productive projects elsewhere. A good deal can be done to alleviate the paucity and high cost of air travel while reducing the isolation of most of the country by investing further in air infrastructure. Recommendations are made for this field as well as for other forms of communications.

117. Expenditures for rural welfare, urban development and general administration should be limited to minimum levels on the part of both the current budget and the development plan. In particular the State should make a careful review of its personnel policies and reacquire control of its personnel budget which has expanded at the expense of other higher priority needs such as maintenance. A large part of the resources needed for the budget must come from the increased returns of existing taxes. The Mission will make a series of recommendations for increasing tax revenues as well as for changing the tax structure. In addition we will indicate what further studies are required to reshape the fiscal system in accordance with the changing needs of a developing economy.

118. A development program, no matter how realistic and how well it is prepared, can have little impact without an appropriate administrative apparatus to direct it. The Mission has accordingly prepared a comprehensive plan for reorganizing the planning service of the Government. This plan envisages the creation of an organization in the Office of the President with sufficient staff and authority to enable it to properly control the coordination and execution of the Plan. Recommendations will cover the establishment of a staff competent to revise the Plan in the light of current experience and the availability of resources. Basically a sort of rolling plan is envisaged in which annual plans will be prepared to cover specific programs of action and Government policy measures. The Plan will be coordinated with budgetary policy and available foreign aid. The Plan Organization will be linked to the operating Ministries and High Commissariats through programmers in each organization who will be responsible for controlling and preparing sectoral programs based on long-term perspectives. The entire apparatus will be designed to coordinate current economic policy decisions with development planning so as to ensure the optimum use of resources at each stage of development. In effect the plan apparatus will act as the technical economic staff of the President and his Cabinet for the purpose of providing current and long-run economic policy analysis and guidance. In particular an efficient system of project appraisal and control needs to be constituted within the planning apparatus.
119. The short-run effects of the action program on the economy should not be exaggerated. Considerable effort and reorganization will be required before the program can get under way. Yet we believe the means exist in Mauritania to make this effort and achieve the large gains in output projected. In addition a large reservoir of funds has been committed to investment programs accepted in the past. These programs will in many cases have to be completed, while in others a reassessment of their importance may lead to new allocations more closely attuned to the current requirements of economic development.

120. In conclusion, the Mission has recommended an action program of specific investment proposals and training programs, by priority, as well as institutional changes and policy measures for each sector. This has been carefully coordinated with the available internal and external resources in order to produce a coherent national development effort for the short run. The program is also designed to lead automatically into the next, more sophisticated stage of development and to produce the project analyses required to implement this next stage without creating discontinuities in the pace of economic growth. Even the best set of recommendations cannot make a program of development. This will be up to the Government of Mauritania. Regardless of the external resources required, and they are not overwhelming, only the Government can adopt the policies and take the steps necessary to assure the economic progress of Mauritania.
CHAPTER FOUR: PROGRAM OF ACTION

Introduction

121. The program of action described in this chapter follows from the strategy outlined in the previous chapter. It is a program of new projects and activities and is based upon our evaluation of development efforts in the past as well as our best judgment as to what can and should be done in the future. The Mission has taken into account the projects presently underway and assumes they will be carried out. The program recommended is not a four-year Development Plan. It should be considered as a series of sectoral programs of development integrated with a strategy of development involving a recommended pattern of public resource allocation and policy measures. The projects and their cost estimates identified within each sector should be regarded as preliminary and indicative. The Mission studied dossiers available in Mauritania and visited most of the project sites. There was no time for detailed engineering studies, market surveys and an analysis in depth of costs and benefits which alone would justify final decisions to go ahead. Within the limits of the available time and data a broad system of investment priorities by project is suggested. These priorities are designed to achieve the objectives recommended by the Mission and are believed to be consistent with official development policy in Mauritania.

122. The program of action is set in a four-year framework designed to provide main guidelines for the Second Four-Year Plan. The precise timing of each project as well as the specific organizational changes and detailed policy measures required for each project should be specified in a series of successive annual Development Plans. These annual plans will be the Government's blueprints for carrying out the Second Four-Year Plan.

I. The Rural Sector

A. Recent Developments

123. The bulk of the rural sector in Mauritania is engaged in livestock herding either solely or in conjunction with crop agriculture, mainly millet. For climatic reasons some four-fifths of the population is concentrated in the south in a wide belt which roughly parallels the Senegal River. Around the river sedentary farmers plant millet in the flood plain. Beyond the river the farmers rely on natural rainfall for dry farming. The vast pastures extend north roughly to the 100 mm - annual rainfall boundary with the Western Sahara desert. Dates are grown in scattered oases.

124. The livestock herds, although well adapted to the harsh climate, are subject to severe losses because of disease. In the absence of adequate statistics, the magnitude of losses are difficult to estimate. However, the Mauritania Livestock Service estimates that pneumonia alone caused losses in 1966 in excess of CFAF 100 million despite the fact that some 700,000 vaccinations were given.
125. In the first 3 years of the First Plan considerable effort was expended to provide sanitary protection for the herds. This consisted of an investment of CFAF 74 million for 20 new immunization parks (in addition to 79 existing parks), and the establishment of an immunization center. Unfortunately the equipment provided was of limited effectiveness because inadequate transport was made available to the Veterinarian Services. Vehicles deteriorated rapidly because of lack of maintenance.

126. A major limitation on livestock production is the lack of sufficient water to utilize the vast pastures. At present the herds migrate to the north during the winter rainy seasons and then return south to the already overcrowded area of permanent water where overgrazing and high mortality rates are serious problems. The digging of wells at selected points in the pastures would enable the herds to survive the six months dry season in the north. It is estimated that a modest number of wells with limited yields (1 litre per second) would permit the exploitation of 100,000 hectares for an additional six months which is sufficient to pasture and water 10,000 animals. The establishment of these new hydraulic facilities would yield a gross value added estimated at CFAF 5 million. However, only modest progress was made in this respect during this First Plan period. Some CFAF 375 million was spent for 20 wells and to establish 1 maintenance team. In general, the maintenance of wells is badly deficient as the communities lack adequate financial resources and nothing is provided from the State budget.

127. The processing of meat was initiated by the decision to construct an abattoir and refrigeration plant at Kaedi. It is expected to commence operations in August 1967 with a capacity of some 2,500 tons of meat annually. Three quarters of the output is destined for export with the rest going to the urban centers such as Nouakchott, Port Etienne and Atar. The hope is to export the meat by air to the Canary Islands. Assuming no return freight, the abattoir will yield quite modest profits at production levels in excess of 2,500 tons annually, and will incur losses below 1,500 tons. No solutions have yet been found to the problems of collecting and fattening the animals and the selling and transporting of meat.

128. In addition a small abattoir has been established at Nouakchott and a private tannery is being set up at Kaedi. Studies have been made for a dairy plant for Rosso. A proposal of questionable value exists for a refrigerator-abattoir complex at Kiffa, with foreign financing.

129. Livestock investments during the First Plan totalled CFAF 600 million out of CFAF 1,035 million projected.

130. Little has been done to create an effective fire control program. Fire causes serious losses to the pasture as well as to the gum trees.

131. The cultivation of millet and sorghum is the second most important rural occupation. Yields in the flood plain of the Senegal River vary from 250 kg. to 750 kg. a hectare with a national average of some 400 kg. Nothing has been done to raise these yields except on an experimental basis.
These experiments show that average yield increases of some 200 kg. a hectare are relatively easy to obtain generally, through the use of light plowing (animal drawn), early sowing, and non-parasitic seed. Far more spectacular results have been obtained with deep plowing, fertilizers and higher yielding seed, but the general applicability of these results has not yet been established. Finally the partial mechanization of farming through animal drawn plows will enable presently unused land to be brought under cultivation.

132. The Government has encouraged, with FED financing, the construction of a number of rural dams to retain the seasonal flood waters and thus enable millet and sorghum to be cultivated in the interior of the country. Unfortunately the output of the inundated land is not sufficient to justify the cost of the dams. A further disadvantage of such dams is that over-pasturing takes place in the surrounding areas because of the concentration of population and herds around the area under cultivation.

133. Yields from dry farming approximate 300 kg. a hectare. With early sowing and improved methods of cultivation yields can be raised to 400 kg. a hectare; through the use of fertilizer, yields can surpass 600 kg. a hectare; in selected experimental plots far higher yields have been obtained.

134. In the region of Nema in the Hodh Oriental a program of expanding the area under cultivation through the use of animal-drawn plows has been underway for two years. The plows and animals are financed by Mauritanian Development Bank (BMD) loans to farmers' associations. The program has enabled farmers to greatly increase their output and has led to the increasing replacement of imported millet from neighboring Mali.

135. Experiments with date palms on a plantation basis in the region of Konkossa have yielded limited results from the point of view of both quality and profitability. The palm plantations of the Adrar have also yielded limited results because of parasitism. A systematic program is underway to combat this pest and a plant to process dates for export is under construction in Atar.

136. Vegetables are cultivated in a number of areas of which the most important is Atar. Here they are grown in the irrigated areas under the palm trees. Output is 4 tons a month while capacity is estimated at 10 tons. The main market is MIFERMA, which refuses to increase its purchases until problems of quality, variety and packaging have been overcome.

1/ Based on findings of l'Institut de Recherche et d'Agronomie Tropicale (IRAT) and the Richard Toll Experimental Station in Senegal.

2/ For example, at Kaedi.
137. The second volume of this report contains a comprehensive review of recent developments in other less important crops such as rice, cotton, and sugar cane.3/

138. The hydro-agricultural works undertaken so far in Mauritania should in most cases be regarded as still in the experimental stage. A serious effort should be made, in the next few years to redress the errors of conception and execution which have been identified in certain pilot projects (Dar el Barka and Keur Macenê) before the important investments proposed by the Mission can be justified for inclusion in the Second Plan. In particular further technical and economic studies are required to demonstrate the feasibility of a second crop of sorghum following a first crop of rice. At the same time strongly supported studies must be executed on the serious problem of land tenure in the valley. The necessary legislation to solve these problems should be approved and applied in order to guarantee the success of the proposed development program.

139. The second volume contains a fuller discussion of the 6 study projects envisaged by the UNDP for the development of the Senegal River Basin. The study of the proposed dam at Gouina and the study of the 400,000 to 500,000 hectares to be irrigated after the river has been controlled appear to be of little interest for Mauritania at its present stage of development. Both are extremely long-term proposals and must first give some indication of a reasonable cost per hectare of irrigated land before they can become a part of serious long-term planning. In general great care should be taken in considering any proposals which involve a fundamental change in agriculture away from the present submersion by river flood toward large-scale irrigation. Changes of such magnitude involve economic, technological and cultural factors which will determine whether and how fast such a transformation can be accomplished.

140. No conflict appears to exist between the other proposed UNDP studies and the action programs proposed below for agricultural development in the river basin. The proposed dam at St. Louis warrants further investigation as it appears to be potentially very beneficial to Mauritania as well as Senegal.

B. General Objectives

141. In the past, particularly during the last Plan (see Chapter Two), primary emphasis in development strategy and in resource allocation was given to creating the economic infrastructure and carrying out the basic studies which were to become the foundation for a period of economic and social development in the second plan period. Relatively little was done in the rural sector. In crop agriculture the main emphasis was given to expensive hydro-agricultural works. In livestock useful but limited work was done in animal sanitation and pasture improvement. A start was made on a capital intensive refrigeration and processing plant which was to become a model for the future transformation of the livestock sector.

142. The strategy proposed by the Mission constitutes a basic change in the direction of the development effort. In this strategy primary emphasis is given to the rural sector. Within the rural sector instead of concentrating on capital-intensive rural works the Mission proposes a program of substantially raising crop and livestock output by improving the present methods of cultivation and herding.

143. While selected hydro-agricultural works are recommended, these and the studies required to bring them to the stage of implementation are intended to contribute mainly to development in future plan periods. They constitute a logical, complementary step as output levels of the bulk of the rural population rise close to the limits which relatively inexpensive changes in production techniques and organization can produce. Similarly no extension is recommended in the near future of relatively high cost and as yet unproven livestock processing facilities. The proposed program is based on a determination of the technological possibilities in both the livestock and crop agricultural sectors and takes into consideration the problems of furnishing adequate capital, trained manpower and supporting governmental services. In accordance with this strategy, the highest priority projects will be those with the lowest ratios of capital invested to output and those which also affect the largest number of producers.

144. The program is highly operational within the context of a four-year period as it is based on individual projects in selected areas with as careful an evaluation as present data will permit of required inputs and projected outputs. As explained in the introduction, considerable preparation will still be required before individual projects can be undertaken. The program, as projected will have the effect of meeting the basic food needs of the population, of raising per capita standards of living for the bulk of the rural population, and of improving the structure of Mauritania's balance of payments. In contrast to alternatives considered, it does not rely upon the uncertain process of spreading the benefits from a few highly capital-intensive projects in order to raise rural income levels. It also does not involve placing the kind of burden on the social structure and the administrative and educational system which the introduction of a more complex technology would require.

145. Our proposed agricultural program 1968-71 is aimed at achieving the following objectives:

- intensification of livestock production;
- increase of traditional crop output;
- introduction of industrial crops.

146. The intensification of livestock production has first priority in the program since this activity represents three-fourths of the gross product of the agricultural sector in the wider sense of the word, (i.e. approximately 10 billion out of 13 billion CFAF) and sustains two-thirds of the country's population.
147. The increase in the livestock herds will help to increase the export of animals on the hoof to traditional markets and to open new markets for processed meat, while maintaining internal consumption at high levels.

148. The increase in the output of traditional crops is the next priority in the program. It is designed to eliminate millet imports and to reduce rice imports while maintaining the present level of consumption per capita. The program emphasizes the production of millet which is projected to increase from 110,000 tons in 1966 to 140,000 tons in 1971. It should be noted that out of this additional production of 30,000 tons, 21,000 tons will be obtained because of the implementation of a program for the more extensive use of land through animal-drawn plows and improved agricultural methods, which will rapidly help to achieve additional production without requiring a radical change in the present agricultural techniques.

149. The remaining 9,000 tons of millet, together with 9,000 tons of cargo rice, will be obtained as a result of the carrying out of hydro-agricultural projects.

150. The introduction of industrial crops such as sugar cane and cotton has been contemplated by the program in order to enable Mauritania to ultimately discontinue her reliance on sugar imports (estimated at 20,000 tons) and perhaps become an exporter of cotton.

Investments and Returns

151. The investment necessary to carry out the entire agricultural program is estimated to amount to CFAF 4,213 million, approximately half in foreign currency, and will lead to an increase in annual production valued at CFAF 2,108 million. (See Table 6.)

152. The carrying out of the Plan will involve a very large increase in the current budgets of the Ministry of Rural Economy. It is estimated that the total amount of these budgets will increase from CFAF 198 million to CFAF 290 million annually, or an increase of 50%. However, the real cost to Mauritania in personnel may be considerably reduced, because of the possibility of recruitment under programs of international technical cooperation.

153. Special efforts will have to be made with regard to the training of supervisory personnel and in particular extension supervisors and recruiting and training officers. Recommendations to improve the curricula of the Kaedi School in order to meet the needs for agricultural supervisory personnel at the intermediate level were made by the Mission to the Minister of Rural Economy and to the High Commissioner for Technical Educational Training. The Mission's views on this subject are contained in the second report.
154. It has also been recommended to carry out extension work in the use of draft animals in agriculture within the framework of cooperative groups and to concentrate the major part of such efforts in the Gorgol-Brakna region which contains a heavy concentration of population and relies heavily on millet production. It will at the same time constitute a testing ground for regional planning.

155. Finally, recommendations have been made to develop agricultural credit with a view to financing the extension program dealing with the use of draft animals and the storage of the millet crop in order to enable the producers to market this commodity at reasonable prices. (See Chapter Five.)

156. As may be seen from Table 6 at the end of the section, a minimum program has been established, which may be expanded into a maximum program depending on the availability of financial resources. The carrying-out of the highest priority program will require a total investment of 2,398 million CFAF and will lead to a rise in gross output valued at 1,800 million CFAF. (See Table 6.) It should be noted that the projects having a second priority are essentially less profitable hydro-agricultural projects.

157. The implementation of all the agricultural projects in the Plan is expected to produce the following results:

- an increase in the total value of agricultural production of approximately CFAF 2,000 million annually;
- gains in the total receipts of foreign currency exceeding CFAF 1,000 million annually, because of a decrease in some imports (millet, rice, milk) and an increase in meat exports (CFAF 625 million);
- increases in employment in the livestock sector and improvement of labor efficiency in millet cultivation, mainly because of the utilization of animal traction.

C. Livestock Development

Objectives

158. In this sector, the objective is to increase the value of annual production by CFAF 1,431 million against an investment of CFAF 1,388 million. (See Tables 3 and 4.)
Table 3: LIVESTOCK OBJECTIVES
(numbers: thousands of head; quantity of meat: metric tons; quantity of milk: thousands of tons; value: million CFAF)

<table>
<thead>
<tr>
<th></th>
<th>Bovines</th>
<th>Sheep &amp; Goats</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbers of head</td>
<td>2,000</td>
<td>2,140</td>
<td>6,000</td>
</tr>
<tr>
<td>MEAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers of head consumed</td>
<td>35</td>
<td>41</td>
<td>1,000</td>
</tr>
<tr>
<td>Quantity of meat</td>
<td>(5,000)</td>
<td>(6,090)</td>
<td>(15,000)</td>
</tr>
<tr>
<td>Value of consumption</td>
<td>350</td>
<td>406</td>
<td>2,000</td>
</tr>
<tr>
<td>Exports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers of head exported</td>
<td>120</td>
<td>150</td>
<td>800</td>
</tr>
<tr>
<td>Value of exports</td>
<td>1,500</td>
<td>1,875</td>
<td>1,600</td>
</tr>
<tr>
<td>Total Production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers of head</td>
<td>155</td>
<td>191</td>
<td>1,800</td>
</tr>
<tr>
<td>Value</td>
<td>1,850</td>
<td>2,281</td>
<td>3,600</td>
</tr>
<tr>
<td>MILK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production/Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>252</td>
<td>278</td>
<td>163</td>
</tr>
<tr>
<td>Value</td>
<td>2,520</td>
<td>2,780</td>
<td>1,630</td>
</tr>
<tr>
<td>Increase 1967/71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity: head meat</td>
<td>6</td>
<td>170</td>
<td>176</td>
</tr>
<tr>
<td>Value</td>
<td>1,090</td>
<td>(2,550)</td>
<td>(3,640)</td>
</tr>
<tr>
<td>MILK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>26</td>
<td>15</td>
<td>41</td>
</tr>
<tr>
<td>Value</td>
<td>260</td>
<td>150</td>
<td>410</td>
</tr>
<tr>
<td>Exports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>30</td>
<td>125</td>
<td>155</td>
</tr>
<tr>
<td>Value</td>
<td>375</td>
<td>250</td>
<td>625</td>
</tr>
<tr>
<td>Total Increase in Value</td>
<td>691</td>
<td>740</td>
<td>1,431</td>
</tr>
</tbody>
</table>

a/ Add 1,200 T. of canned meat and 1,500 T. of mutton to this consumption.
b/ Of which 10,000 head of bovines exported in the form of meat (1,500 T.) from the Kaedi abattoir.
c/ To which it is necessary to add the export of 10,000 camels (value: CFAF 200 million) and 10,000 horses (value: CFAF 300 million).
d/ To which it is necessary to add the consumption of 60,000 T. of camels' milk and about 6,000 T. of fresh milk equivalent to the import of milk products.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Hygiene</td>
<td>95</td>
<td>94</td>
<td>15</td>
<td>12</td>
<td>216</td>
</tr>
<tr>
<td>Immunization Center</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Vaccination Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interstate Antipest Campaign</td>
<td>80</td>
<td>80</td>
<td></td>
<td></td>
<td>160</td>
</tr>
<tr>
<td>Equipment Nouakchott Laboratory (20 cycles)</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicles</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>Pastoral Hydraulic Works</td>
<td>162</td>
<td>147</td>
<td>225</td>
<td>207</td>
<td>741</td>
</tr>
<tr>
<td>Agropastoral Study (1st phase)</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Hydrosgeological Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Pastoral Wells (3 brigades)</td>
<td>60</td>
<td>45</td>
<td>52</td>
<td>34</td>
<td>191</td>
</tr>
<tr>
<td>Establish 1/4 Pastoral Wells</td>
<td>82</td>
<td>82</td>
<td>118</td>
<td>118</td>
<td>400</td>
</tr>
<tr>
<td>Establish 1/4 Village Wells</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>70</td>
</tr>
<tr>
<td>Rebuild Trarza Wells (2nd phase)</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Equipment for Exploration (2nd phase)</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Pastoral Improvements</td>
<td>80</td>
<td>2</td>
<td>52</td>
<td>2</td>
<td>136</td>
</tr>
<tr>
<td>Pilot Zone at Kaedi (without study)</td>
<td>78</td>
<td>2</td>
<td>50</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Pilot Zone of Aftout (2nd phase)</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Sharecropping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Marketing of Animals</td>
<td>107</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>207</td>
</tr>
<tr>
<td>Study of Ranches at Kaedi &amp; Aftout</td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Establishment of Kaedi Ranch</td>
<td>95</td>
<td>95</td>
<td></td>
<td></td>
<td>190</td>
</tr>
<tr>
<td>Establishment of Aftout Ranch (2nd phase)</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Industries</td>
<td>13</td>
<td>40</td>
<td>35</td>
<td>35</td>
<td>68</td>
</tr>
<tr>
<td>Dairy at Rosso</td>
<td>3</td>
<td>40</td>
<td>35</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Study of an Abattoir</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>General Total</td>
<td>457</td>
<td>283</td>
<td>427</td>
<td>221</td>
<td>1,388</td>
</tr>
</tbody>
</table>
Meat Production Targets

159. On the basis of an assumed rate of increase of the domestic demand for meat of 4% per year during the period of the next Plan, the annual consumption of meat - cattle, sheep and goats - should increase from 20,000 tons at present to about 23,500 tons in 1971 while exports should increase from 920,000 head to 1,075,000 head, including the export of meat processed by the Kaedi slaughter house (1,500 tons being equivalent to 10,000 slaughtered head of cattle). The increase in consumption would therefore amount to 3,500 tons in 1971 (valued at CFAF 396 million) and the increase in exports 155,000 head (valued at CFAF 625 million), or a total increase in value of CFAF 1,021 million.

160. These projected targets for 1971 are to be achieved through a numerical increase of the livestock population (which will increase by 140,000 head of cattle and 400,000 head of sheep and goats), through an improvement of the extraction rate, which will increase between 1967-71 from 8% to 10% for cattle and from 30% to 32% for sheep and goats, and through an improvement in the quality of animals, the value of which has not been computed.

Milk Production Targets

161. The production and consumption of cow's, ewe's, and goat's milk are projected to increase from 415,000 tons at the present time to 456,000 tons in 1971, that is an increment of 41,000 tons (10% in four years). It should be mentioned that part of this surplus will be used to improve the feeding of calves. The value of this additional production is estimated at CFAF 410 million. It should be noted that Mauritania imports a certain quantity of sterilized and powdered milk as well as butter corresponding to approximately 6,000 tons of fresh milk (value 350 million CFAF) and that these imports could be reduced after the Rosso dairy project is carried out.

Recommendations

162. Sanitary Protection (CFAF 216 million)

(1) Establishment of an immunization center at El Ghabra. The creation of this center which will help in completing the prophylactic infrastructure of the country should take place in 1968 and will require an investment of CFAF 9 million.

(2) Establishment of 20 vaccination pens in addition to the existing network. Ten such pens should be established in 1969 and ten in 1970 (CFAF 16 million).

(3) Continuation of the interstate anti-rinderpest campaign which will require an investment estimated at CFAF 159 million of which about half will be spent in 1968 and half in 1969.
(4) Equipment of the Nouakchott Laboratory involving expenditures of CFAF 6 million in 1971. This Laboratory will be restricted to diagnostics and in particular to the detection of diseases among the livestock.

(5) Provision of vehicles for the "Service de l'élevage." The scrapping in 1968 of the whole vehicle fleet of the Service, except for six units should be followed by the gradual purchase of nine short "châssis" and 14 long "châssis" vehicles. This will involve an investment of CFAF 26 million.

163. Provision of Water Stations: CFAF 741 million

(1) Studies: In order to determine the proper location of wells in the Trarza area, an agropastoral study should be undertaken at the beginning of the Second Plan in that region at a cost of CFAF 10 million. In addition hydro-geological studies should be carried out in 1969 and 1970 at a total expenditure of CFAF 20 million.

(2) Maintenance of pasture wells: The maintenance of the existing wells will require the creation of three maintenance teams at Aioun, Nema and Aleg. Upkeep for these three teams is included as well as for the team already existing at Rosso. Total estimated expenditures of CFAF 191 million are to be distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aioun maintenance team</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Creation</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Upkeep</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Nema maintenance team</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Creation</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Upkeep</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aleg maintenance team</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Creation</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Upkeep</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Upkeep of the existing Rosso team</strong></td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60</td>
<td>45</td>
<td>52</td>
<td>34</td>
</tr>
</tbody>
</table>
(3) Installation of 140 wells in the East at a total cost of CFAF 400 million. However, out of this total, CFAF 40 million should be assigned to development work teams for the digging of 40 wells.

(4) Creation of community wells, of which 20 will be in the North and 50 in the Senegal and Gorgol River valley. This program is to be carried out by development work teams and will cost an estimated CFAF 70 million spread over 4 years.

(5) Repairs to Trarza wells involving an expenditure of CFAF 30 million, to be carried out in 1970 and 1971.

(6) Equipment for exploratory drillings. The exploratory drillings which would be carried out under a recently approved United Nations Special Fund project could lead to the identification of exploitable wells. The equipment for such drillings will cost CFAF 20 million.

164. Improvement of Pastures: CFAF 136 million

(1) Livestock pilot zone at Kaedi: The establishment of this zone is designed to disseminate practical animal husbandry methods with a view to improving meat production in a region designed to become an important center for the processing of animal products (Kaedi slaughterhouse). This project will call for an investment of CFAF 78 million to be carried out in 1968.

(2) Livestock pilot zone of Aftout-es-Sahel: The creation of this zone is designed as a test for the development of cattle breeding in the Aftout-es-Sahel, a region with abundant good quality pasture which can be supplied with fresh water through improvements in the delta. The investment necessary for this purpose will amount to CFAF 50 million in 1970.

(3) Farm draft animals: Through a system of payments in kind farmers can be encouraged to create their own draft animal teams. This project will require an investment of CFAF 8 million over a period of four years and should be based on careful studies of methods of implementation especially with regard to the selection of farmers and the reimbursement of advances.

165. Marketing of Cattle: CFAF 207 million

(1) Study of the Kaedi and Aftout ranches. A credit of CFAF 12 million is estimated to be necessary for carrying out this study in 1968.
(2) Establishment of a ranch at Kaedi. This project is designed to corral cattle on the hoof and ensure the annual fattening of a given number of cattle on a rationally exploitable pasture to provide the Kaedi slaughterhouse with quality animals. An investment of CFAF 95 million is forecast for 1968.

(3) Establishment of a ranch at Aftout-es-Sahel for the same purpose as that of the Kaedi ranch. An investment of CFAF 100 million should be completed by 1970.

Animal Product Industries: CFAF 88 million

(1) Establishment of a dairy complex at Rosso. This project aims at reducing the import of dairy products that are equivalent to 6,000 tons of fresh milk. The dairy which may market its production at Rosso and Nouakchott shall consist of a dairy farm and a collecting center. The study of the project should be undertaken in 1968 at a cost of CFAF 3 million and the installation of the dairy should be carried out in 1969 and 1970 at a cost of some CFAF 75 million.

(2) A study of a slaughterhouse, the location of which is to be determined, shall be undertaken in 1968 and will require a total expenditure of some CFAF 10 million.

D. The Development of Crop Production

Objectives

167. The plan of action in this field aims in particular at increasing the production of millet and rice through the use of draft animals in agriculture and the carrying out of hydro-agricultural improvements. This program is expected to lead in the subsequent phase to the production and processing of such industrial crops as sugar cane. Its implementation should involve investments totalling CFAF 2,642 million and an increase in annual production valued at CFAF 678 million. Out of this investment CFAF 70 million should be for studies, investigations and research on the development of crop production. These studies will deal with family consumption and budgets, agricultural investigations in the areas under development (CFAF 50 million) and studies and research concerning the date palm trees (CFAF 20 million).

Recommendations

168. Program for Improving and Carrying Out Millet Cultivation (Animal Traction): This program is recommended for implementation essentially in the Gorgol/Brakna area and to a lesser extent in the Nema, Selibaby, Alou, Kiffa and Rosso areas. This program should increase the annual production of millet by 21,000 tons valued at CFAF 315 million and involve a total investment of CFAF 278 million broken down as follows:
<table>
<thead>
<tr>
<th>Area</th>
<th>Total (million CFAF)</th>
<th>Grants (million CFAF)</th>
<th>Medium-term Credit²/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gorgol/Brakna</td>
<td>198.7</td>
<td>139.5</td>
<td>59.2</td>
</tr>
<tr>
<td>Other areas</td>
<td>79.5</td>
<td>7.5</td>
<td>72.0</td>
</tr>
<tr>
<td>Total</td>
<td>278.2</td>
<td>147.0</td>
<td>131.2</td>
</tr>
</tbody>
</table>

a/ Equipment, draft animals, silos.

b/ Cost of supervisory extension personnel (salary of 180 extension agents plus travel and lodging expenses).

(1) Gorgol-Brakna Area. This region essentially consists of the two districts of Gorgol and Brakna but the program will only cover a stretch of about 50 kilometers deep along the Senegal River. To this region we have annexed the watershed of the Gorgol Noir (Gorgol complex and Foum el Gleita dam) in the Assaba district.

This region is inhabited by about 200,000 people, of which some 100,000 lead a more or less sedentary life and derive their livelihood from agriculture, in particular from the growing of millet. The production of millet amounts to approximately 50,000 tons in an area of about 100,000 hectares. In this region of relatively high human concentration and important agricultural potential, the methods to be used for improving and expanding millet cultivation will yield an additional estimated annual production of 13,500 tons and require a total investment estimated at CFAF 198.7 million.

In addition to this investment, financing will have to be provided in the form of short-term loans for the purchase of fertilizer (CFAF 66.8 million) and fungicide (CFAF 2.8 million). As well, a credit of CFAF 16.4 million will be appropriated in the current budget of the agricultural services to cover the remuneration, travel and lodging expenses of 15 extension supervisors. The necessary supervisory staff will consist of 15 extension supervisors and 150 extension workers.

Intervention in the Nema District and in the Areas of Aioun, Kiffa, and Rosso. The district of Hodh Oriental includes a population of approximately 120,000 people, of which 70,000 are engaged in cattle breeding and 35,000 in agriculture (millet, sorghum, niebe, groundnuts) carried out essentially in the Sahel-Sudanese climatic zone.

Millet is grown on about 20,000 hectares and its production does not appear to exceed 10,000 tons. The region shows a deficit in millet and its distance from the river prevents it from receiving supplies at reasonable prices.

The implementation of the extension program concerning draft animals in all the areas will yield an estimated additional annual production of 7,500 tons and require an estimated investment of CFAF 79.5 million. The necessary supervisory personnel will consist of 30 extension workers headed by 3 supervisors who are already on the spot.

The program of work for the whole Gorgol-Brakna area and the other areas covers the following:

(a) Extension of areas for the cultivation of millet: 13,500 hectares in the Gorgol-Brakna area and 9,140 hectares in the other areas, or a total of 22,640 hectares.

(b) Improvement of the yields on a total area of 34,620 hectares, of which 18,000 hectares in the Gorgol-Brakna area and 16,620 hectares in the other areas.

The project will include an estimated total of 57,260 hectares and involve more than 12,000 farmers.

Hydro-Agricultural Development Schemes: These schemes will cost an estimated total of CFAF 2,319 million and yield a gross annual production valued at CFAF 363 million. This disproportion between the amount of the investment and the results to be obtained can be explained on the one hand by the high cost of these schemes and, on the other hand, by the incorporation of expenditures in the total amount of the investments, the effects of which will be felt after 1971:

(1) Studies. The following studies are recommended under the action program:

5/ The program of studies of the Boghé, Gorgol, R'Kiz and Keur Macene projects have been included in the following paragraphs relating to these development areas: (3), (4), (5) and (6)(a).
Hydro-geological study for water prospecting in the intermediate sandstones of the Affole (Assaba) 25

Hydrological studies of the Kara Koro 12

Hydrological studies of the Hodh 12

Counterpart funds from the Government of Mauritania on behalf of the UN Special Fund project:
- for the establishment of a subterranean water authority 90
- for studies of the development of the Senegal River 260

399

(2) Development of the Dar-el-Barka project area (200 ha.). The additional development of this area will help to obtain the following crops:

1st Cycle

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area (ha)</th>
<th>Production (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>60</td>
<td>125</td>
</tr>
<tr>
<td>Corn</td>
<td>70</td>
<td>175</td>
</tr>
<tr>
<td>Rice</td>
<td>75</td>
<td>150</td>
</tr>
<tr>
<td>Vegetables</td>
<td>13</td>
<td>- p. m.</td>
</tr>
</tbody>
</table>

200 ha.

2nd Cycle

Millet : 200 ha. yielding a production of 150 tons

The expected production is valued at CFAF 10 million.

The development of the project area is virtually completed and will cost CFAF 100 million in total. Only an additional credit of CFAF 10 million is scheduled to cover the current expenditures of the project area for an additional year (up to May 1968).

(3) Improvement of the Lower Part of the Boghe Plain (3,500 hectares). This development scheme would enable rice to be cultivated under controlled submersion on 3,500 hectares. It would yield an output of 7,000 tons of rice in the first cycle and an additional 4,000 tons of sorghum in the second cycle. The whole annual output would have a value of CFAF 151 million.
The investment necessary will amount to CFAF 600 million and will cover the construction of a flood control dike and the installation of sluice gates to control the rise and fall of water in the plain. Pumps could be used in order to achieve, if necessary, preliminary irrigation and drainage.

(4) The Gorgol Development Schemes (32,500 hectares of which 10,000 hectares will be brought under cultivation around 1971). The proposed schemes consist of the study and construction of a reservoir dam on the Gorgol Noir at Foum-el-Gleita in order to ensure on the one hand, before 1971, the growing of flood plain crops around the lake created by the dam with the lowering of the water level (5,000 hectares). The scheme envisages the subsequent irrigation of 2,500 hectares to be developed for the cultivation of sugar cane below the dam. Furthermore, a dike with sluice gates should be erected at the mouth of the Gorgol River in Senegal to retain the water of the Gorgol and control the rise of the Senegal River. This structure would permit the cultivation of rice on 5,000 hectares and sorghum on 5,000 hectares and the exploitation of pastures on 15,000 hectares covering the lower fringe. Finally, provisions should be made for a small 20-hectare experimental project area to determine the possibilities of intensifying the crop output on the lower plain. Another experimental project area for the cultivation of sugar cane should be made operational in anticipation of the completion of the dam.

The program calls for a total investment of CFAF 755 million. This includes a study of the dam and a study of the development of the sugar cane growing area and of the lower plain at a cost of CFAF 110 million, the construction of the dam and the installation of two experimental project areas and of the dike at a cost of CFAF 595 million, and the expenditures for supervisory personnel estimated at CFAF 50 million.

This CFAF 755 million investment is expected to yield the following results by 1971/72:

(1) **Lower Gorgol (downstream)**

<table>
<thead>
<tr>
<th>Area</th>
<th>Size (ha)</th>
<th>Crop Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper fringe</td>
<td>2,000</td>
<td>4,000 tons</td>
</tr>
<tr>
<td>Intermediate fringe</td>
<td>5,000</td>
<td>1,500 tons</td>
</tr>
<tr>
<td>Lower fringe</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>Experimental project area</td>
<td>20</td>
<td>- p. m.</td>
</tr>
</tbody>
</table>

---

6/ On a total surface of 5,000 ha.
(ii) Gorgol - upstream (Foum-el-Gleita dam)

- Upstream from dam: 3,000 ha. of millet yielding 1,800 tons
- Downstream from dam: 2,500 ha. of sugar cane - p. m.
- Experimental project area: 25 ha. of sugar cane - p. m.

The total value of the annual production anticipated is CFAF 101.5 million.

The following areas are recommended for development after 1971: a sugar cane cultivation area, a sugar mill as well as the development of the following crops: 3,000 additional hectares to be used for rice cultivation in the lower Gorgol and 2,000 additional hectares of millet upstream from the Gorgol. The value of the gross agricultural production which would result from the development of the Gorgol project, as a whole, between 1971 and 1975 could reach a total close to CFAF 500 million, out of a total investment of approximately CFAF 2 billion.

(5) Additional Development of the R'Kiz Lake (2,000 hectares). The filling of the lake through flooding by the Senegal River is more or less controlled by two sluice gate structures already built on marigots. The construction of a third sluice gate structure (at a cost of some CFAF 20 million) would create a water reserve for irrigation as well as improve the agricultural output of the lake region. Furthermore, an experimental 20-hectare area is recommended for development (at a cost of CFAF 20 million). The supervisory personnel for this purpose will cost CFAF 30 million. The investment proposed totals CFAF 50 million (includes CFAF 10 million for the study of the project as a whole).

This development is expected to yield the following estimated annual output valued at CFAF 35 million:

- Millet (in season) 1,000 ha. yielding 1,000 tons
- Corn 500 ha. yielding 1,000 tons
- Niebe 500 ha. - p. m.

(6) Development of the Delta (1,900 hectares). The development of four selected project areas in the delta would ensure an estimated annual production valued at CFAF 50 million and necessitate an investment of some CFAF 275 million.

7/ On a total surface of 5,000 ha.

8/ The production of sugar cane will not commence until after the development of the sugar cane project area, around 1973-74.
(a) The further development of a pilot project area at Keur Macene (100 hectares) is estimated to require CFAF 5 million in addition to the CFAF 12 million already spent and should ensure an annual production of 200 tons of rice valued at CFAF 3 million. The studies for the development of the entire plain of Keur Macene (5,000 ha.) will cost over CFAF 25 million.

(b) The development of the M'Pourie project area (1,200 ha.) is estimated to require an investment of some CFAF 200 million for the construction of a dike, the installation of 3 series of "casiers" for the cultivation of rice under controlled submersion, and pumping equipment for the irrigation of middle level and high level lands for draining the ground while the river is too high. An annual production of 2,400 tons of rice valued at CFAF 31.2 million is expected.

(c) The development of the Rosso project area (100 hectares) is estimated to require an investment of CFAF 20 million to obtain an annual output of 200 tons of rice valued at CFAF 2.6 million.

(d) Finally, the development of the Garat "casier" (500 hectares) selected in principle by the UNDP/INTERSTATE Committee project: "Hydro-agricultural Studies of the Senegal Valley - Second Stage" will require the installation at the mouth of a marigot of a sluice gate structure which will allow water to accumulate perennially for irrigation purposes and will control the infiltration of salt water. An investment of CFAF 25 million (Mauritanian counterpart) is estimated to be necessary to obtain a production of 1,000 tons of rice valued at CFAF 13 million plus a second crop to be determined.

(7) Small Scale Developments on the Senegal River Upstream from Kaedi (660 hectares). It is proposed to develop three small pilot basins upstream from Bakel (360 hectares) and a project area upstream from Matam (300 hectares) for the cultivation of rice under controlled submersion after sowing under rainy conditions. The cultivation of millet after rice could also be envisaged. The total cost of this development is estimated at some CFAF 30 million and the annual production is estimated as follows:

400 tons of rice on 200 hectares;
400 tons of millet on 460 hectares.

As 330 tons of millet now produced on the 660 hectares under cultivation are to be deducted, this will give an additional value added of CFAF 7 million.
(8) Construction of Two Flood Retention Irrigation Dams in the Hodh (1,500 hectares). This project requiring an estimated investment of CFAF 60 million will lead to an additional production of millet (on some 1,500 hectares) valued at CFAF 9 million.

(9) **Creation of a Hydro-agricultural Work Unit.** This unit will ensure prompt intervention whenever the need arises, particularly in the case of private enterprises which lack the possibility of carrying out under contract a series of small maintenance, repair and even hydro-agricultural development work. The cost of equipping this unit is estimated at CFAF 30 million and the operating cost will amount to some CFAF 80 million for the four years, i.e. a total of CFAF 110 million.

E. Forestry

170. The program to control brush fires aims at conserving pastures and ligneous vegetation, in particular gum trees. In order to preserve this capital from progressive deterioration, a program for the establishment and maintenance of fire belts should be carried out in areas with high agricultural potential. Reforestation should be undertaken on a trial basis. The total necessary investment is estimated to be some CFAF 178 million.

171. **Protection of Gum Tree Plantations and Pastures (CFAF 138 million).** The following work should be undertaken:

(1) Opening of 2,800 kilometers of fire belts in areas with a high density of gum trees and 2,000 kilometers in areas to be equipped with pasture wells according to the Plan. An investment of about CFAF 72 million will be necessary for this purpose.

(2) Maintenance and reopening of 3,000 kilometers of previously established fire belts requiring a total expenditure of some CFAF 36 million.

(3) Equipping of four watch teams involving a total expenditure of some CFAF 30 million.

172. **Measures Directly Affecting Forestry Production (CFAF 40 million).**

(1) Trial improvements of 600 to 700 observation areas of which 50 are to be located in classified forests. An investment of CFAF 5 million is estimated to be necessary for the purchase of one vehicle and for its maintenance over a period of four years.
(2) Reforestation on a trial basis of 50 hectares at Fodar, Boghe, Maghama and Rosso at a cost of CFAF 2 million.

(3) Establishment of three trial project areas for the rehabilitation of gum trees at a cost of CFAF 20 million.

(4) Drawing up of a map and carrying out of "andometric" studies on gum tree plantations on a surface of 250,000 square kilometers involving an expenditure of some CFAF 10 million.

(5) Drafting of a new forestry code: cost estimated at CFAF 3 million.
Table 5: FORECAST OF ANNUAL CROP PRODUCTION FOR 1971
(The figures in brackets are partial figures which should not be included in the total)

<table>
<thead>
<tr>
<th></th>
<th>Value of Production</th>
<th>Investments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(ha.)</td>
<td>tractor</td>
<td>I</td>
</tr>
<tr>
<td>Surface Rice Millet Corn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(tons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Agricultural Studies</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Development of Animal-drawn Cultivation</td>
<td>22,640</td>
<td>21,000</td>
<td>315</td>
</tr>
<tr>
<td>3. Hydro-Agricultural Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydro-Agricultural Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keur Macene Basin</td>
<td>(399)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrology Kara Koro</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrology Hodh</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution of Special Fund Project</td>
<td>350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dar el Barka</td>
<td>200</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Lower Plain</td>
<td></td>
<td>3,500</td>
<td>7,000</td>
</tr>
<tr>
<td>Gorgol Project(10,000)</td>
<td>(4,000)</td>
<td>(3,300)</td>
<td>(102)</td>
</tr>
<tr>
<td>Gorgol (downstream)</td>
<td>7,000</td>
<td>4,000</td>
<td>1,500</td>
</tr>
<tr>
<td>Gorgol (upstream)</td>
<td>3,000</td>
<td>1,800</td>
<td>27</td>
</tr>
<tr>
<td>R'Kiz Lake</td>
<td>2,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Delta Development</td>
<td>(1,900)</td>
<td>(3,800)</td>
<td>(50)</td>
</tr>
<tr>
<td>Keur Macene</td>
<td>100</td>
<td>200</td>
<td>3</td>
</tr>
<tr>
<td>M'Pourie</td>
<td>1,200</td>
<td>2,400</td>
<td>31</td>
</tr>
<tr>
<td>Rosso</td>
<td>100</td>
<td>200</td>
<td>3</td>
</tr>
<tr>
<td>Garat</td>
<td>500</td>
<td>1,000</td>
<td>13</td>
</tr>
<tr>
<td>Small Scale Developments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upstream from Kaedi</td>
<td>660</td>
<td>400</td>
<td>70</td>
</tr>
<tr>
<td>2 Dams at Hodh</td>
<td>1,500</td>
<td>600</td>
<td>9</td>
</tr>
<tr>
<td>Maintenance Teams</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total 3</td>
<td>19,760</td>
<td>15,350</td>
<td>9,120</td>
</tr>
<tr>
<td>Total 1 &amp; 2 &amp; 3 (rounded)</td>
<td>12,400</td>
<td>15,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

(Footnotes on next page)
Footnotes to Table 5

a/ Extension of areas under cultivation to which must be added approximately 30,000 hectares, the present yields of which are to be improved.

b/ Of which 90 million for the establishment of a subterranean waters authority, 260 million for studies concerning the development of the Senegal River.

c/ To which should be added 100 million already spent or programmed until May 1968.

d/ To which should be added 3,000 hectares for rice cultivation in 1971.

e/ To which should be added 2,000 hectares for millet after 1971 and 2,500 for sugar cane.

f/ Developments already completed: 12 million.

g/ Paddy rice corresponding to about 9,000 tons of cargo rice.

h/ The cost of studies for Boghé, Gorgol, R'Kiz and Keur Macène is included in the cost of development work for these projects.

i/ To which should be added about 3,900 ha. of rice after 1971.

j/ Of which CFAF 25 million for the study of the development of the entire plan of Keur Macène (5,000 ha.).
Table 6: SUMMARY INVESTMENTS AND PRODUCTION

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investment</th>
<th>Gross Annual Production 1971</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Program of highest priority</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Livestock development</td>
<td>1,388</td>
<td>1,431</td>
</tr>
<tr>
<td>2. Agricultural development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- agricultural studies (rainfed)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>- hydro-agricultural studies:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- hydrology Kara Koro</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>- hydrology Hodh</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>- Boghé project</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>- Contribution to the UNDPa/</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>- Development of rainfed agriculture</td>
<td>278</td>
<td>315</td>
</tr>
<tr>
<td>- Hydro-agricultural development:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Dar-el-Barka</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>- Lac R'Kiz</td>
<td>80</td>
<td>35</td>
</tr>
<tr>
<td>- Keur Macène pilot project</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>- Development above Kaedi</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>3. Forests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- studies of gum trees and pastures</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>- protection of gum trees and pastures</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td>Total I</td>
<td>2,398</td>
<td>1,800</td>
</tr>
</tbody>
</table>

II. Program of Second Priority

1. Hydro-agricultural studies

- Gorgol projectb/                         | 110        |                             |
- Garat projectb/                          | 25         | 13                          |
- Keur Macène project (5,000 ha. plain)    | 25         |                             |
- Hydrogeology of the Assaba               | 25         |                             |

2. Hydro-agricultural development

- Boghé                                      | 565        | 151                         |
- Gorgol                                    | 615        | 101                         |
- M'Pouriec/                                | 200        | 31                          |
- Rosso                                     | 20         | 3                           |
- two dams in the Hodh                       | 60         | 9                           |
- maintenance teams                         | 110        |                             |

3. Forests                                  | 30         |                             |

Total II                                    | 1,815      | 308                         |

TOTAL I & II                                 | 4,213      | 2,108                       |

a/ To be specified later.
b/ The execution of this project is tied to UNDP assistance.
c/ The execution of this project is tied to Chinese technical assistance.
II. Fisheries

A. Recent Developments

Fish Production

173. The yield of ocean fishing off Rio de Oro and Mauritania can be estimated in broad terms at a maximum of 300,000 tons (CFAF 20 billion) per year obtained from some 600 vessels and boats of all kinds.

174. Only 18,000 tons of fish (value CFAF 500 million) reach Port-Etienne, 15,000 tons from a Canarian fleet (70 medium-size vessels) based at Port-Etienne, 2,000 tons from a local fleet (34 units, principally 6.5-meter boats) and 1,000 tons from the Imraguen tribesmen who fish from small boats and along the shore. The number of Mauritanian fishermen cannot exceed 300 and their total earnings are of the order of CFAF 25 million.

175. The utilization of fish cargoes discharged at Port-Etienne and on the Mauritanian Coast is as follows: almost the whole of some 500 tons of fish is consumed by an estimated population of 10,000 living in communities along the coast, representing an average consumption of 20 kg. per head for this group. The consumption of dried fish is very small and appears to amount to a few hundred tons, including the 160 tons imported from Senegal. Therefore 17,000 tons of fish go toward exports: 15,000 tons produce (after processing) 5,000 tons of salted and dried fish, principally exported to the Congo (Brazzaville), the balance of 2,000 tons of frozen fish are exported to Italy, Portugal and Greece through the Somaupco and Owelfi companies.

176. The local shipping involved in the discharge of fish at Port-Etienne includes about 100 medium-sized and small vessels. It is, however, growing and 14 high-tonnage vessels (including 2 refrigerated cargo vessels) have already been ordered by SOMAP and should be capable of a total annual catch of 21,000 tons, although the results achieved by the first four vessels delivered at the end of 1966 and in early 1967 have so far been unsatisfactory.

177. The yield of the remainder of the fisheries, some 270,000 tons, is not landed at Port-Etienne but is exported to the metropolitan countries of the international fishing fleet, where it is generally frozen.

---

2/ To this figure should be added some 15,000 tons of fish obtained from the River Senegal (value CFAF 500 million) by 500 full-time and 10,000 occasional fishermen; this yield is consumed by an estimated riparian population of 200,000 (75 kg. per head), 2/3 as fresh and the rest as salted and dried fish.

10/ To this figure should be added the consumption of fish from the River Senegal, i.e. some 15,000 tons, almost entirely locally consumed, and also perhaps a further 500 tons of sea fish not brought ashore through Port-Etienne.
178. This yield is as follows:
- 250,000 tons (including perhaps 60,000 tons obtained from Mauritanian territorial waters) caught by the international fleet of some 300 vessels;
- 20,000 tons taken entirely in Mauritanian territorial waters by the Canarian fleet of 130 vessels;
- 1,000 tons of crayfish taken by 30 French crayfish boats.

179. An additional yield, which is very small, is obtained by foreign companies fishing in Mauritanian waters under special agreements, such as the Société Africa Pêche which in 1966, with one vessel, landed catches totaling 600 tons at Leghorn, Italy.

**Investments in Port-Etienne**

180. The aim of the investments envisaged under the terms of the First Four-Year Plan was to create a harbor with a discharge capacity of 50,000 tons and processing industries for 50,000 tons of fresh fish (salted and dried, frozen, fishmeal) per year. As will be seen in the following chapter, the investments actually made go beyond the objectives of the First Plan and, in point of fact, the processing industries now in the course of installation will soon have a capacity exceeding 300,000 tons per year although the port has unloading facilities for only 50,000 tons. Total investments under the First Four-Year Plan amounted to CFAF 7,090 billion:

<table>
<thead>
<tr>
<th>Description</th>
<th>CFAF millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>installation of port equipment (principally quay and cold storage plant)</td>
<td>1,279</td>
</tr>
<tr>
<td>construction of SOMAUFECO cold storage plant</td>
<td>200</td>
</tr>
<tr>
<td>construction of Guelfi Company's cold storage plant</td>
<td>857</td>
</tr>
<tr>
<td>purchase by SOMAP of a fleet of vessels and construction of a fishmeal factory by SOMIP</td>
<td>2,739</td>
</tr>
<tr>
<td>engineering repair shop (SCAM)</td>
<td>15</td>
</tr>
<tr>
<td>investments by IMAPEC with a view to the establishment of fishmeal, salted and dried fish and canning factories</td>
<td>2,000$\text{a/}$</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,090</strong></td>
</tr>
</tbody>
</table>

$a/$ On the basis of later information it appears that IMAPEC will invest CFAF 1 billion only in the initial phase.

11/ To this figure should be added some CFAF 500 million earlier investments.
181. Of this total CFAF 3,749 million have been or would have soon been invested in the form of public funds, including the loans from the Caisse Centrale, PAC and BMD. Private investments of CFAF 3,341 million are in the form of authorized capital (10%) and of loans from the Caisse Centrale, the Banque Mauritanienne du Développement (Mauritanian Development Bank) and the Banque Dreyfus (12%); the balance is in the form of suppliers' credits.

182. These investments are now being made and have already provided the port with unloading facilities with the aforementioned capacity of 50,000 tons and with processing facilities for 52,000 tons of fresh fish. The potential output of the latter will be raised to 330,000 tons by 1968. This raises the question of bringing the port's discharge capacity into line with the potential output of the fish processing plants.

Processing Industries

183. The volume of activity in the fish processing industries at Port-Étienne is on a relatively limited scale, despite the existence of an already significant capacity, which will continue to increase until the end of 1968. The industry at present employs 300 persons, receiving incomes totaling CFAF 25 million.

The Fish-drying and -salting Industries

184. The firms already in existence, SICGP and EGA, annually process some 15,000 tons of fresh fish, with a final yield of 5,000 tons, although their theoretical capacity is estimated at 30,000 tons of fresh fish. Furthermore, IMAPEC intends to develop between now and 1968 additional capacity amounting to 30,000 tons, so that by 1968, when this is available, the total capacity will be 60,000 tons. At the present stage, the fish-salting and -drying industry employs some 250 persons, paying some CFAF 20 million in wages and salaries.

The Cold-storage Industries

185. Only 2,200 tons of fish (10 tons per day) were being frozen in 1966, although the total capacity available at present is on the order of 22,000 tons (110 tons per day). Moreover, this capacity will increase by 15,000 tons (75 tons per day) in 1968, on the completion of the construction of the port cold-storage plant. By that date the total cold-storage capacity is expected to be 37,000 tons (185 tons per day).

The Fishmeal Industry

186. At present there is no plant manufacturing fishmeal, although the projects being undertaken by SOMIP (600 tons per day) and IMAPEC (100 tons per day) will result, by the end of 1967 or more likely by 1968, in the

---

12/ But only 50 tons per day in the first phase.
creation of an annual processing capacity of 210,000 tons\(^{13/}\) (700 tons per day) with a potential output of some 40,000 tons of fishmeal.

The Canning Industry

187. This industry does not yet exist but should be brought into being during 1968 through the agency of IMAPEC, which intends to develop the capacity to can 7,000 tons of fresh fish.

188. In summary, of the total processing capacity available of 52,000 tons, only 18,000 tons is being effectively used. Moreover, the total processing capacity expected to be available in 1968 will be sufficient to handle more than 300,000 tons of fresh fish.

The Supplying of Port-Etienne with Fish

189. The only measure taken along these lines has been the placing of an order by the SOMAP-SOMIP group for fourteen vessels capable of supplying some 24,000 tons of fresh fish.

190. In the meanwhile, until a satisfactory Mauritanian fishing fleet has been brought into being, charter parties with foreign vessels have reportedly been made for the landing at Port-Etienne of a presaged tonnage and for fishing in the area formerly adjoining Mauritanian territorial waters. It has been agreed that the factories at Port Etienne should process the fish landed, that the catch should retain the nationality of the vessels under charter and that the responsibility for the sale of the finished product should therefore remain with the latter. For instance, the firm of SOPESUD formed in 1966 by a group of ship-owners from La Rochelle, France, with 6 fishing trawlers and 3 cargo trawlers, was to deliver a weekly catch of 100 tons to La Rochelle and a similar quantity to the factories at Port-Etienne (2,500 tons per year). No catch has so far been landed at Port-Etienne. On the other hand, landings at La Rochelle are continuing with SOMAP's 2 refrigerated trawlers being used as carriers. Moreover, 68 trawlers flying Panamanian or Greek flags were reported to have made contracts with the Guelfi Company for the delivery of 40,000 tons of fresh fish. The contracts apparently required that the unlanded tonnage should be subject to a duty of 3 francs per kg. payable to SOMAP. To the extent that these contracts have been properly executed, it can be assumed that only \(1/3\) of the tonnage covered by them will in fact be landed in 1967 i.e. 13,000 tons, of which some 4,000 tons will represent fish to be frozen. It appears that the balance of 27,000 tons will be subject to duty at 3 francs per kg. and will produce a profit of CFAF 81 million payable to SOMAP.

191. Despite all the efforts that have been made to supply Port-Etienne with fresh fish, it is not expected that landings in 1967/68 from existing shipping, the recently ordered fleet and the vessels under charter, will exceed 60,000 tons, of which 14,000 tons will be put in cold storage.

---

\(^{13/}\) On a single-shift basis only.
The Administrative Structure

192. The administration of the fisheries sector is undertaken by the Department of Fisheries, which supervises the maritime region based on Port-Etienne and is responsible to the High Commissioner for Industrialization and Mining. Port-Etienne also possesses a fisheries laboratory, which has at its disposal the "Almoravie," a small scientific research vessel. The surveillance of territorial waters is the responsibility of the Mauritanian Naval Force. It has one small second-hand motor launch and a second 17-meter launch just brought into service. Delivery of a third launch is expected soon and a proposal to purchase two new 19-meter launches in 1967 is at present under consideration by FAC. There may therefore be five launches engaged in the surveillance of territorial waters. Training for fishermen is provided at a fisheries section of the Mamadou Toure Center, although this Center does not come under the Department of Fisheries. The fisheries sector is administered by five senior officials, of whom two are Mauritanians (two at the Department of Fisheries, one assigned to the Port-Etienne region and two to the Port-Etienne laboratory).

B. Objectives

193. The capacity of the plants to be established at Port-Etienne has been estimated at 311,000 tons of fresh fish. The actual target has been fixed at 170,000 tons (including 18,000 tons actually being landed). This represents the minimum profitable utilization of this capacity, as indicated in the following table:

<table>
<thead>
<tr>
<th>Total Fresh Fish</th>
<th>Projected Capacity of Plants</th>
<th>Processed Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum Level</td>
<td></td>
</tr>
<tr>
<td>Dried and salted fish</td>
<td>60,000</td>
<td>33,000</td>
</tr>
<tr>
<td>Frozen fish</td>
<td>27,000</td>
<td>21,000</td>
</tr>
<tr>
<td>Fishmeal</td>
<td>210,000</td>
<td>109,000</td>
</tr>
<tr>
<td>Canned fish</td>
<td>7,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Total</td>
<td>311,000</td>
<td>170,000</td>
</tr>
</tbody>
</table>

a/ 200 working days have been assumed in the case of the cold storage plants and 300 in that of the fishmeal plants.

b/ Including the current production of 5,000 tons of salted and dried fish and 2,200 tons of frozen fish.

c/ Including 4,000 tons of fillets obtained from 10,000 tons of fresh fish and 10,000 tons of frozen whole fish obtained from 14,000 tons of fresh fish.

d/ This capacity could be doubled if two shifts were employed on a 24-hour basis.
194. To reach this objective it has been estimated that it will be necessary to invest CFAF 5.5 billion, mainly for the creation of a Mauritanian fishing fleet and for the expansion of the port. As the investments that have already been made and are in course of being made, amount to CFAF 7.5 billion, the total investment cost will rise to CFAF 13 billion for a gross yield of a maximum value of CFAF 2 billion.\textsuperscript{11/} The total number of jobs, both on shore and sea, that will be created will lie between 2,000 and 2,500 and will produce a total wage-packet of between CFAF 500 and 750 million annually.

195. In particular with respect to the processing factories the annual value of the output of the finished product (52,000 tons) to be obtained from 170,000 tons of fresh fish can be estimated at between CFAF 2.5 and 3 billion (including the CFAF 500 million currently being realized) and the additional jobs that will be created in the processing factories at 700 (CFAF 200 million in wages). There are 300 jobs at the present time.

196. The problem is therefore not to create additional processing capacity, since the capacity being brought into existence already appears so large that it is doubtful whether it can be fully utilised. Rather what is needed is to supply adequate quantities of fish to the factories at Port-Etienne and ensure their sale on foreign markets.

C. Recommendations

The Stock of Exploitable Marine Resources

197. The importance of a better understanding of maritime resources off the Mauritanian coasts springs from the need to ensure the rational exploitation of the fishery resources and to fix the quantitative and qualitative yields of the areas exploitable by different types of vessels. On the basis of the results of the trawling undertaken in 1962 by the French research vessel "Thalassa," it appears that the most productive areas are those at a depth of less than 150 meters. Moreover, it is now practically certain that yields have continuously fallen, especially during the last ten years. According to information supplied by the Greek fishing fleet, yields appear to have fallen from 1,115 tons per year per vessel in 1961 to 815 tons per year per vessel in 1963. Indications from Greek, Spanish and Polish vessels suggest that the reduction in the more valuable species has been on the order of 50% over a period of ten years. Furthermore, according to reports from French vessels, catches of rosy crayfish, taken at depths of 200 to 400 meters, have fallen by 70%. In the face of this disquieting situation, it is essential to undertake, without delay, an intensive biological study with a view to ascertaining the quantities and qualities of fish that should be taken off the Mauritanian coasts and in the Mauritanian territorial waters. In drawing up this inventory of

\textsuperscript{11/} Value based on the following unit prices: CFAF 90 per frozen fillet; CFAF 41 per frozen whole fish; CFAF 73 per salted and dried fish and CFAF 28 for fishmeal.
resources, it would appear best to make use of either the Thalassa for a period of two years or, failing this, a trawler of a similar type to be acquired by the Mauritanian Government. The purchase of such a trawler would involve an expenditure of CFAF 30 million. The remuneration of experts and of Mauritanian personnel is estimated at CFAF 9 million and the operating costs of the trawler will amount to CFAF 4 million. The total cost over 2 years will be CFAF 43 million.

Preparation of a Market Study

198. Parallel with the drawing up of an inventory of the exploitable marine resources off the Mauritanian coasts, it is essential to proceed with the preparation, at the earliest possible stage, of a market study of possible outlets for the products to be processed at the factories of Port Etienne. The cost of this study has not been estimated. It is a fact that over the past ten years the consumption of fishmeal and frozen fish in the countries of the European Common Market has increased by 10% and 3% respectively, although the outlets for the canning factory appear limited. On the other hand, the international fishing fleet operating off the Mauritanian coast and in Mauritanian territorial waters has long had a strong foothold in these markets, so that even a partial entry into them by the future Mauritanian fishing fleet will be far from easy. In order to obtain a thorough and objective market study, it will be desirable to hire the services of a specialized company, unconnected with the interests already involved in offshore Mauritanian fisheries.

The Creation of a Mauritanian Fishing Fleet

199. The yield of the international fishing fleet, which has been progressively contracting over a period of ten years, is estimated in broad terms to be 250,000 tons of selected marketable fish, after returning some 500,000 tons of fish to the sea as unacceptable. If the objectives cited earlier are reached, 61,000 tons of selected marketable fish will be required for processing in Port-Etienne and 109,000 tons of other fish for fish meal. Even though only half of the vessels of the future Mauritanian fishing fleet will be in Mauritanian territorial waters, the others operating in international waters, the fleet will be faced with two major problems: The surveillance of territorial waters that have been very much extended under the terms of the Act of January 21, 1967 and competition from the international fleet fishing offshore. So far as the latter is concerned, the intervention of the Mauritanian fishing fleet will have the effect of lowering the average yield of each vessel and therefore raising the cost price of catches, which is likely to make it more difficult to dispose of the fish on traditional markets. Moreover, it is doubtful whether the new Mauritanian vessels can hope to achieve, at least at the outset, a yield comparable to that of an international fishing fleet that has been operating on the high seas for decades. Furthermore, in any case, it will take from ten to fifteen years to train the 1,260 seamen required to create the Mauritanian fishing fleet.
200. After subtracting from the figure of 170,000 tons the catches at present being landed (18,000 tons), and those from the fourteen vessels recently ordered by SOMAP (24,000 tons), a further 128,000 tons of fish will still have to be landed. To land a catch of this size, it has been estimated that the additional shipping required by Mauritania should take the form of forty-eight heavier vessels (55 meters in length) and thirty lighter vessels (15 meters in length). The yield of the heavier vessels would be on the order of 110,000 tons and their cost would amount to CFAF 3,840 million. The yield of the lighter vessels would be some 18,000 tons and their cost CFAF 560 million. The total cost would therefore be CFAF 4,400 million and the number of seamen required to man these vessels would be as follows:

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Seamen Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavier</td>
<td>960 seamen</td>
</tr>
<tr>
<td>Lighter</td>
<td>300 seamen</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,260 seamen</strong></td>
</tr>
</tbody>
</table>

It is suggested that about one-third of the suggested Mauritanian fleet be purchased from 1968-1971 (CFAF 1,400 million).

Training of Seamen

201. The Mamadou Toure Center at Port-Etienne has a small-craft fisheries section which, since 1961, has been training twelve seamen a year. This Center provides theoretical studies on shore and sea training in a pinnace. To train the 1,260 seamen required for the Mauritanian fleet that is envisaged (78 vessels), it would appear desirable to implement the Gautier project formulated in January 1967. The object of this project is to broaden the scope of the training being given at present in the small-craft fisheries section of the Mamadou Toure Center and to form a new industrial fisheries section. The two sections would provide facilities for the training of about one hundred skilled seamen-fishermen each year and thus be in a position to award tickets as masters of small fishing-boats and large mechanized fishing-vessels to selected seamen who had received a full theoretical and practical training. The practical training would take place on a school-trawler of 25 to 30 meters, which would cost some CFAF 30 million. Allowance would also have to be made for the expenditure of CFAF 5 million on the accommodation of personnel and the purchase of equipment. The operating costs of the school-trawler, excluding those of the teaching personnel to be provided under bilateral technical assistance arrangements, should be met from the proceeds of the vessel's catch.

202. Assuming normal operation of the two sections engaged in the training of seamen, it would take ten to fifteen years to train 1,260 seamen and establish the Mauritanian fishing fleet on a fully operational basis. It is therefore essential to find, in the meanwhile, some alternative means of supplying the factories at Port-Etienne with fresh fish.
Charter-Parties for Foreign Vessels

203. Until the Mauritanian fisheries fleet is brought into being, dependent as it is, by the rate of progress that can be achieved in the training of seamen, some provisional solution must be sought that will provide regular supplies for the manufacturing plant at Port-Etienne. This solution might take the form of charter-parties with foreign vessels authorized to fish in Mauritanian territorial waters. Such contracts appear to have already been concluded with forty-eight Panamanian and Greek vessels, who have undertaken to land 40,000 tons of fresh fish. The solution of the charter-party has the advantage of providing for the delivery to the factories at Port-Etienne of a given quantity of fish that will be processed on a contract basis at a reasonable pre-agreed price, the marketing of the catch being left to the firms under charter. Moreover, such contracts should explicitly provide for the obligation to land a given tonnage or, failing this, for the payment of heavy penalties as compensation to the factories that, as a result, are forced to work at less than capacity. On the other hand, the danger of such a solution is that it may contribute to the impoverishment of Mauritanian territorial waters. This is why fishing undertaken by vessels under charter should be strictly regulated and supervised by the Mauritanian authorities, whose capacity to enforce such measures should be strengthened at the earliest possible stage. Furthermore, trawling should be strictly prohibited to all vessels, whatever their nationality, within a coastal strip six miles wide. As the fish resources of territorial waters are limited, (they are estimated at approximately 80,000 tons) and until such time as a Mauritanian fishing fleet is established, it may be desirable to consider some means of interesting some of the deep-sea fishing vessels of the international fleet in the operation of the factories at Port-Etienne. In this way the resources now available to these factories could be supplemented with supplies from deep-sea fisheries.

Expansion of Port Installations

204. On the assumption that the supplies available to the industries at Port-Etienne are to be increased to 170,000 tons, it will be necessary to increase the landing facilities of the port, which can only handle 50,000 tons now. Measures should be taken to construct a breakwater to protect the port, to install a 650-ton slipway and to expand the Société SCAM so as to provide adequate repair and maintenance facilities for vessels. This additional investment in the port would amount in all to CFAF 915 million.

The Protection of Territorial Waters

205. Under the provisions of the Merchant Marine and Fisheries Code of 1962, Mauritanian territorial waters were extended to six miles. In an adjoining zone of six miles (see map No. 1) fishing was also subject to regulation by the Mauritanian Government. Under the terms of the Act dated January 21, 1967, Mauritanian territorial waters have been extended to twelve miles based on a straight line running from Cap Blanc to Cap Timiris (see map No. 2). The so-called "adjoining area" has therefore been eliminated. The fisheries permits granted to SOFESUD and to the forty-eight
Panamanian and Greek vessels have therefore ceased to be valid. This significant extension of Mauritanian territorial waters is undoubtedly advantageous, since it will reserve for Mauritania the right to exploit the country's most important maritime resources. But these benefits cannot be realized until the new limits of Mauritanian territorial waters have been recognized, at least by those countries whose fishing fleets operate off the Mauritanian coasts. Such recognition is in fact essential, if Mauritania's police fleet is to be able to intervene legally and to secure the effective performance of charter-parties made with vessels authorized to fish in its territorial waters. In any event, whether under the terms of the limits set by the Act of January 21, 1967 or under those of any new limits that may be negotiated, Mauritania's inspection and control facilities must be increased. It would appear necessary to proceed with the purchase, for a sum of CFAF 150 million of either two 28-meter launches or five 8-meter launches, thus increasing the police flotilla from three to five launches (or to eight launches on the second assumption).

III. Mining

206. The proving of fairly rich reserves of iron and copper ore at Fort Gouraud and Akjoujt, respectively, held out the promise of a considerable economic potential which might be a base for the future economic development of the newly constituted Islamic Republic of Mauritania.

A. MIFERMA

207. MIFERMA was set up with a total capital stock of $53.2 million (CFAF 13.3 billion) by a number of French, English, Italian and German shareholders. Total investments through 1966 were in excess of $200 million. The bulk of these investments was completed by the end of 1963. When exploitation began in 1963 the Mauritanian Government purchased 5% of the capital stock. The most important external source of finance was a 6 1/4%, 15-year loan of CFAF 16.3 billion ($66 million) from the IBRD, granted in March 1960 and guaranteed by France and Mauritania. In addition, the company received a CFAF 2.5 billion, 3%, 24-year Caisse Centrale loan and a CFAF 5.25 billion loan from the French Treasury in two tranches with terms of 5.6% for 13 years and 6 to 6.5% for 12 years respectively, partly guaranteed by the French Government. A consortium of French banks also granted a medium-term revolving credit of CFAF 3.5 billion, rediscountable with the Crédit National of France. The guarantees of the two governments as well as the concessional terms of part of the financing amounted to an important subsidization of the project.

208. Proven reserves as of January 1, 1967, amounted to some 11/4 million tons of relatively pure ore of 60% or better iron content.15/ In addition, there will be tailings of 26 million tons of extracted mixed ores of less than 60% iron content, the use of which is presently under study. A final study on the size of the basic reserves will not be completed until 1969. Present reserves should be sufficient for twenty years of exploitation.15/
Table 7: CAPACITY OF FRESH FISH PROCESSING INDUSTRIES AT PORT-ETIENNE (tons)

<table>
<thead>
<tr>
<th></th>
<th>Theoretical capacity</th>
<th>Total capacity assumed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per day</td>
<td>Total</td>
</tr>
<tr>
<td>1. Cold-storage plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Somaupéco</td>
<td>10 tons/day</td>
<td>2,000</td>
</tr>
<tr>
<td>- Guelfi Company</td>
<td>100 tons/day</td>
<td>20,000</td>
</tr>
<tr>
<td>- Port cold storage plant</td>
<td>75 tons/day</td>
<td>15,000</td>
</tr>
<tr>
<td>Total</td>
<td>185 tons/day</td>
<td>37,000</td>
</tr>
<tr>
<td>2. Fish-meal factories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SOMIP (one shift only)</td>
<td>600 tons/day</td>
<td>180,000</td>
</tr>
<tr>
<td>- IMAPEC</td>
<td>100 tons/day</td>
<td>30,000</td>
</tr>
<tr>
<td>Total</td>
<td>700 tons/day</td>
<td>210,000</td>
</tr>
<tr>
<td>3. Salted and dried fish factories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SIGP</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>- EGA</td>
<td>18,000</td>
<td>15,000</td>
</tr>
<tr>
<td>- IMAPEC</td>
<td>30,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Total</td>
<td>60,000</td>
<td>33,000</td>
</tr>
<tr>
<td>4. Fish canning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- IMAPEC</td>
<td>7,000</td>
<td>4,000</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>885 tons/day</td>
<td>314,000</td>
</tr>
</tbody>
</table>
### Table 8: ESTIMATE OF POSSIBLE FURTHER INVESTMENTS IN FISHERIES\(^a\)\

<table>
<thead>
<tr>
<th>Description</th>
<th>1968-72 (million CFAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritanian Fleet</td>
<td>1,400(^b)/</td>
</tr>
<tr>
<td>Port extension and slipway</td>
<td>845</td>
</tr>
<tr>
<td>School, research and patrol boats</td>
<td>230</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,475</strong></td>
</tr>
</tbody>
</table>

\(^a\) The figures for further investments cannot be specified with precision as decisions to invest should depend on the results of the proposed market and resources study as well as upon other factors discussed in this section.

\(^b\) Assumes that about 1/3 of the suggested Mauritanian fleet will be purchased during this period.
MAURITANIA

PRECEDEnte LIMITE DEs
EAUX TERRITORIALes

(6 milles au nord du Cap Timiris)

MAURITANIA

FORMER LIMIT OF THE
TERRITORIAL WATERS

(6 miles to the north of Cape Timiris)

AVANT LA LOI 21-1-1967
BEFORE LAW OF 21-1-1967

JULY 1967
MAURITANIA

NOUVELLE LIMITE DES
EAUX TERRITORIALES
(12 milles au nord du Cap Timiris)

MAURITANIA
NEW LIMIT OF THE
TERRITORIAL WATERS
(12 miles to the north of Cape Timiris)

DEPUIS LA LOI DU 21-7-1967
SINCE LAW OF 21-7-1967

JUNE 1967
The MIFERMA project was originally regarded as the key to the future economic development of the country. It was thought that it would enable Mauritania to accelerate the pace of the very slow progress which its otherwise limited resources made possible. It was to bring the age of industrialization to Mauritania while providing budgetary surpluses which would make the country self-supporting as well as able to finance an investment program.

In fact, MIFERMA has not been able to earn the profits originally projected because of a combination of rising costs and reduced international prices for its ore. Operations started in 1963, nearly a year earlier than projected. The original expectation was that earnings in 1964 and 1965 would be sufficient to write off some $7 million in preliminary expenses while leaving a net profit of some $8 million. In fact, the company wrote off only $4.5 million by the end of 1965 after losing $5.5 million in 1963. Profits in 1965, before preliminary expenses, were half as large as projected in 1960.

The main elements in causing higher costs than originally foreseen were the increased costs of repairs and maintenance. Labor costs were also higher. The required labor force greatly exceeded original estimates. In particular, the cost of operating the 675 km. railway was double that expected. Even with big increases in tonnages handled the cost per ton of ore produced rose 10%. In short, wear and tear on rolling stock and parts required more rapid replacement than was anticipated. Other expenses such as interest charges have also risen because of the necessity to borrow in order to finance the higher output levels and because of inadequate cash generation.

Prices received per ton are a function of prevailing international prices, long-term contracts with buyers and the quality of the ore produced. MIFERMA's actual prices have been some 12% under expected prices as a result of the decline in world prices through 1963. Output is a function of both the technological production possibilities, which until now were estimated at less than 7.5 million tons annually, and the market. In fact, total tonnage shipped rose to 7.2 million in 1966. On the market side, MIFERMA has several advantages. Its location close to Europe, with rapid loading facilities, gives it an important freight rate advantage. The quality of its ores also gives MIFERMA a strong competitive position. With an elaborate investment in mixing facilities, and seven distinct qualities of ore, its product mix can to a limited extent be directed to meet the varying demand conditions of ore users. This increases both the potential size and stability of the firm's market. Another important market factor is that about half of the firm's shares are held by steel companies who are committed to buy over 3 million tons a year, although at a discount from list prices.

Mauritania's interest in the profitability of MIFERMA stems from the concession granted by the Government in 1959 which establishes a so-called "Long-Term Tax Scheme." The relevant parts of the tax scheme may

---

16/ Mauritania also owns 5% of the shares of MIFERMA.
be summarized as follows:

(1) The basic principle calls for MIFERMA to pay a tax of 50% on its net earnings before any duties. Since no net earnings were expected in the initial years special taxes were levied on imports and exports in order to provide some revenue for the Mauritanian Government. These tax payments were to be deducted from eventual income tax on earnings.

(2) An ad valorem duty of 5% on imports of equipment and material of all kinds was payable during the installation period of three years and three years thereafter ending June 30, 1966. After this date all imports by MIFERMA were subject to the full duty at 1959 rates.

(3) During the exploitation period, which began with the first commercial shipment of iron ore in 1963, the sum total of import duties was to be adjusted by a so-called "complementary duty" to make them equal to 6% of the FOB value of iron ore exports up to 4.5 million tons a year and 9% of the value of exports exceeding 5.5 million tons. In no year could the tax fall to less than 6% of export earnings.

214. From 1960 to 1963 actual payments by MIFERMA to the Mauritanian Government under the Long-Term Tax Scheme were quite close to the original total of CFAF 1,110 million projected for this period. However, by the end of 1966, a total of CFAF 4.7 billion had been collected compared with CFAF 5.7 billion projected.

215. By 1966 revenues from MIFERMA amounted to between one-third and one-fourth of total current Government revenue; a shortfall of CFAF 1 billion represented considerable potential loss to the budget.

216. According to the original estimates MIFERMA expected to reach annual sales of 5.3 million tons by 1966. A considerable rise in proven reserves from an original 94 million tons together with the tight financial position caused by lower prices and higher operating costs led the firm to increase output to 7.2 million tons in 1966. Without this rise in output the contribution to Government revenues would have been significantly lower.

217. Even with these adjustments in total output the future prospects for the company were not bright because of the likelihood of further decreases in iron ore prices and increasing costs. Reduced orders from overseas made it unlikely that shipments could be maintained in 1967 and lower average prices were expected.

218. To remedy the situation the company revived the idea of exploiting the relatively rich F'Derik deposits, once postponed because of the tight financial situation and the increases in output achieved in the other deposits. Investment for additional capacity at F'Derik is estimated to cost less than half the average investment per ton in the rest of the enterprise. It is likely that the company follows a policy of long-run profit maximization taking into account the capacity of its market to absorb ore at remunerative prices.
219. The developing of the 27 million tons of ore\(^*\) deposits at F'Derik will require a further CFAF 5 billion ($20 million) of investment. In order to avoid the excessive financial burden which the payment of the full import duty would have required, a new protocol was signed in 1966 to expire in 1971 which essentially limits total taxes to 9\% of the FOB value of exports of ore assuming these exceed 5.5 million tons.\(^{18/}\

220. With the new protocol and the higher sales made possible by the exploitation of the F'Derik deposits total taxes for the period 1966 through 1975 are conservatively projected by the Mission to increase from an estimated CFAF 7.8 billion to CFAF 13.2 billion. The F'Derik project is expected to raise total sales by about 1.5 million tons per year to 7.7 million tons per year by 1970. The firm plans to finance the entire investment from current cash generation and from medium-term (four years) suppliers' credits. The higher taxes and higher interest payments on short-term borrowings can be expected to depress profits during the next few years.

221. In addition to taxes on exports of at least some CFAF 1.4 billion annually (depending on sales), MIFERMA pays a variety of taxes which may be estimated at some CFAF 170 million for 1966. Finally, taxes on employee salaries and incomes paid directly by MIFERMA and its employees may be estimated at some CFAF 340 million for 1966.

222. Thus total Government revenues generated directly by MIFERMA may be estimated at some CFAF 2 billion annually. If account is taken of the various enterprises which work for MIFERMA in Port-Etienne and Zouerate, a further 100 to 200 CFAF million in annual Government revenues may be accounted for. The total tax generating impact of MIFERMA, on the basis of presently available information, is not likely to differ markedly from the above in future years although variations in iron ore prices could change this. The effect on taxes of the decline in total sales value expected after 1970 (see Table 9) may be partly offset by higher tax returns from the increased number of employees required by the F'Derik project as well as by possible increased taxes generated by enterprises dependent on MIFERMA.

223. The economic impact of MIFERMA may be gauged from its estimated contribution to the gross domestic product. In 1962 the value added contribution of the mining sector including related construction was estimated at CFAF 7.9 billion in current prices. The 1966 contribution of MIFERMA alone is conservatively estimated at over CFAF 11.1 billion. This is projected to rise to 11.5 billion by 1969 and to decline thereafter to CFAF 9.7

\(^{17/}\) World Bank Mission estimate.

\(^{18/}\) In fact, the import duties due are to be debited to a special account to be written off against the 9\% export tax paid, contingent tax credits built up by MIFERMA through the payment of earlier taxes, and income taxes which would have to be paid in the event earnings were large enough.
billion by 1971 in accordance with the reduction assumed in average iron ore prices per ton (see Table 10). Total employment of Mauritanians by MIFERMA is projected to rise from 3,150 workers in 1966 to 3,500 by 1969.

224. Thus by 1970 MIFERMA's contribution to the gross domestic product will begin to decline slowly while its contribution to Government revenues and thus to the public development program will be approximately stabilized.

225. The balance of payments will be adversely affected by a reduction in total external sales after 1969 on the basis of the assumed price of ore. On the other hand imports will be far less than in the 1960's as major investments will have been completed. It is estimated that more than half of total investments is spent for direct imports of equipment and materials. On the capital account, inflows will be reduced in accordance with lower investments. Transfers of income abroad by employees should decline assuming progressive Mauritanization of the labor force in the middle categories of employees.

B. Akjoujt

226. The existence of copper deposits at Akjoujt, some 290 km. northeast of Nouakchott, has been known since 1931. As a result of studies undertaken in 1953 reserves were believed to consist of 7.7 million tons of oxide ore containing an average of 2.7% of copper lying above a deposit of 15 million tons of sulphides containing 1.79% copper. Underneath this, there are strong indications of the existence of a further 4 to 6 million tons of sulphides containing an estimated 1.9% of copper which need to be mined by underground methods. According to more recent estimates by a Canadian engineering firm, the open pit reserves are some 22% more than originally estimated, and consist of 7.7 million tons of oxide ore containing 2.52% copper and 19.9 million tons of sulphide ore containing 1.76% copper.

227. Several concessions were granted for the exploitation of the Akjoujt deposits starting in 1951. Through 1965 all the concessionnaires had failed to either solve the technical problem of concentrating the oxide ore with its high carbonate content or reach satisfactory financial agreements among themselves.

228. In November 1966 the Anglo-American International's proposal, through a subsidiary, Charter Consolidated Limited, for exploiting the deposit with its new Torco process was accepted by the Mauritanian Government.

229. Under the terms of a convention signed with the Mauritanian Government, an operating company called SOMIMA was set up in Mauritania. The convention was ratified in June 1967, by the Mauritanian National Assembly.
<table>
<thead>
<tr>
<th>Year</th>
<th>Taxes based on protocol of 1966a (million CFAF)</th>
<th>Net Profit (million CFAF)</th>
<th>Sales (million tons)</th>
<th>Average price (CPAF per ton)</th>
<th>Total Sales (million CFAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>1,329</td>
<td>585</td>
<td>6.8</td>
<td>2145</td>
<td>14,586</td>
</tr>
<tr>
<td>1967</td>
<td>1,420</td>
<td>1,178</td>
<td>7.3</td>
<td>2140</td>
<td>16,622</td>
</tr>
<tr>
<td>1968</td>
<td>1,407</td>
<td>618</td>
<td>7.7</td>
<td>2,010</td>
<td>15,477</td>
</tr>
<tr>
<td>1969</td>
<td>1,407</td>
<td>755</td>
<td>7.7</td>
<td>2,010</td>
<td>15,477</td>
</tr>
<tr>
<td>1970</td>
<td>1,298</td>
<td>(141)</td>
<td>7.7</td>
<td>1,855</td>
<td>14,284</td>
</tr>
<tr>
<td>1971</td>
<td>1,298</td>
<td>55</td>
<td>7.7</td>
<td>1,855</td>
<td>14,284</td>
</tr>
<tr>
<td>1972</td>
<td>1,298</td>
<td>105</td>
<td>7.7</td>
<td>1,855</td>
<td>14,284</td>
</tr>
<tr>
<td>1973</td>
<td>1,298</td>
<td>240</td>
<td>7.7</td>
<td>1,855</td>
<td>14,284</td>
</tr>
<tr>
<td>1974</td>
<td>1,252</td>
<td>213</td>
<td>7.5</td>
<td>1,855</td>
<td>13,913</td>
</tr>
<tr>
<td>1975</td>
<td>1,219</td>
<td>556</td>
<td>7.3</td>
<td>1,855</td>
<td>13,542</td>
</tr>
</tbody>
</table>

\*a/ Not applicable beyond 1971.
Table 10: ESTIMATED CONTRIBUTION OF MIFERMA TO THE GROSS DOMESTIC PRODUCT AND EMPLOYMENT 1966-1975

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Domestic Product (CFAF billion at current prices)</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>11.1</td>
<td>3,150</td>
</tr>
<tr>
<td>1967</td>
<td>11.7</td>
<td>3,300</td>
</tr>
<tr>
<td>1968</td>
<td>11.5</td>
<td>3,470</td>
</tr>
<tr>
<td>1969</td>
<td>11.5</td>
<td>3,470</td>
</tr>
<tr>
<td>1970</td>
<td>10.4</td>
<td>3,470</td>
</tr>
<tr>
<td>1971</td>
<td>10.4</td>
<td>3,470</td>
</tr>
<tr>
<td>1972</td>
<td>10.4</td>
<td>3,470</td>
</tr>
<tr>
<td>1973</td>
<td>10.4</td>
<td>3,470</td>
</tr>
<tr>
<td>1974</td>
<td>10.0</td>
<td>3,380</td>
</tr>
<tr>
<td>1975</td>
<td>9.7</td>
<td>3,285</td>
</tr>
</tbody>
</table>
Table 11: IRON ORE PRICES: SWEDISH, KIRUNA D, 60% Fe, CIF ROTTERDAM

<table>
<thead>
<tr>
<th>Year</th>
<th>Price (US $ per unit of Fe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>14.2</td>
</tr>
<tr>
<td>1951</td>
<td>18.7</td>
</tr>
<tr>
<td>1952</td>
<td>25.6</td>
</tr>
<tr>
<td>1953</td>
<td>23.0</td>
</tr>
<tr>
<td>1954</td>
<td>20.4</td>
</tr>
<tr>
<td>1955</td>
<td>21.7</td>
</tr>
<tr>
<td>1956</td>
<td>23.9</td>
</tr>
<tr>
<td>1957</td>
<td>25.2</td>
</tr>
<tr>
<td>1958</td>
<td>24.0</td>
</tr>
<tr>
<td>1959</td>
<td>19.2</td>
</tr>
<tr>
<td>1960</td>
<td>19.2</td>
</tr>
<tr>
<td>1961</td>
<td>19.2</td>
</tr>
<tr>
<td>1962</td>
<td>18.0</td>
</tr>
<tr>
<td>1963</td>
<td>16.8</td>
</tr>
<tr>
<td>1964</td>
<td>17.0</td>
</tr>
<tr>
<td>1965</td>
<td>16.9</td>
</tr>
<tr>
<td>1966</td>
<td>16.4</td>
</tr>
<tr>
<td>1967</td>
<td>16.4</td>
</tr>
</tbody>
</table>

a/ Prior to 1959, c.i.f. North Sea Ports.

Source: Export Projections and Trade Division, Economics Department, IBRD.
230. Total estimated investment amounts to $69.2 million of which $56.4 million will be required during the three-year installation phase. The $69.2 million total investment includes $5.2 million to repay the Micuma interest and an ICA loan obligation of the Government of $1 million. Of the $5.2 million, $3.6 million will be repaid during the installation phase. 19/ The $12.8 million difference between the total investment of $69.2 million and the $56.4 million installation period investment will be financed out of retained earnings during the 18-year operating period.

231. The shareholders agreement calls for the investment of an equity capital of $8.4 million subscribed as follows:

- Charter Consolidated Limited and Associates: 54% 20/
- Islamic Republic of Mauritania: 25%
- French Group: 21%
  - Société Minière et Métallurgique Pennaroya: 7.5%
  - Bureau de Recherches Géologiques & Minières: 7.0%
  - Banque de Paris et des Pays-Bas: 4.3%
  - Compagnie Financière pour l'Outre-Mer: 2.2%

232. The shareholders also agreed to advance $10.4 million at 7.5% interest per annum to the company on a pro rata basis to their equity holdings. The balance of $37.6 million in initially required investment is being sought from the IBRD group and the EIB. 21/

19/ Mauritania agreed to renounce its $600,000 interest in Micuma.

20/ In a separate letter of agreement Charter agreed to cede 3% out of its 54% participation to any company unanimously approved by the subscribers of SOMIMA. This provision may be designed to attract lenders of capital.

21/ The share capital distribution was changed after the participation of IFC in the venture in early 1968; the Charter gave up its majority and other groups agreed to a diminution in their share holdings. Total share capital is now $8 million distributed as follows:

- Charter Group: 44.6%
- Islamic Republic of Mauritania: 22.0%
- French Group: 18.4%
- IFC: 15.0%

The shareholders further agreed to advance $15 m. in subordinated loans to the company on a pro rata basis to their equity holdings. The balance of $36.8 million of required investment is to be obtained from an IFC unsecured loan of $12.2 million, an IFC secured loan of $12.3 million, an EIB guaranteed loan of $11 million and loans from such other banks as Credit Lyonais and the BIAO totalling $9.3 million. In the event that funds are required during the phase when production shifts from oxide to sulphide ores, shareholders other than the Government and IFC undertake to advance another subordinated loan at a rate of interest and in excess of 8%. IFC will contribute $20 million of the total investment amounting to $59.8 million and the EIB $11 million. By 1976 total dividends distributed are expected to exceed shareholders equity.
The Convention establishing the concession is to be subject to the long-term tax regime set up by a 1964 law relating to copper exploitation. The major clauses of this convention are as follows:

(1) The Company undertakes (Article 4), except in case of force majeure and "unless the loans that it is about to request from international finance organizations are refused," to set up within 36 months from the effective date of the Convention installations sufficient to ensure the exploitation of concentrates containing 10,000 tons of copper during the 12 months following the first commercial shipment. In any case commercial shipments will be considered to have started not later than 42 months after the effective date of the Convention. It will further export 160,000 tons of copper during the first 7 years following the date of the first commercial shipment and 450,000 tons during the entire 18-year period of exploitation.

(2) A major problem for the Mauritanian authorities was to ensure that the large deposit of sulphides under the overlying oxide ores would be exploited since during the first period all of the equity and loan capital will have been repaid according to the financial estimates. For this reason a penalty was considered necessary. In this connection the company undertakes (Art. 27) to set aside a reserve of CFAF 1,250 million ($5 million) before the fifth year of exploitation of oxides in order to ensure the availability of sufficient funds to permit the transfer of productive facilities from oxides to sulfides. This sum is to be forfeited to the government in the event that the corporation decides not to exploit the sulphide reserve.

(3) The Company is to pay an export duty of one cent per US pound of copper in the exported concentrates when the FOB price Nouakchott is less than or equal to 40 cents per pound. This rises to 1.25 cents for a price between 40 cents and 50 cents a pound. For a price above 50 cents the export duty rises to 1.5 US cents a pound.

The invoice price is equal to the FOB price; refunds, rebates or discounts are excluded. Under the convention with Socuma Mauritania was to receive only 0.75 cents a pound.

(4) The Company is to be exempt from income tax during a five-year period beginning on the date of the first commercial shipment of marketable concentrates (Art. 18, 19). Depreciation rates are specified in an attached exhibit. Interest payments are considered as a deduction from income subject to income tax. Deficits of the installation period and the first year of exploitation are to be accumulated and may be depreciated only throughout the two years from the end of the five-year income tax exemption period (Art. 25). Depreciation of organizational expenditures for tax purposes is at the rate of 12.5% a year.
Other provisions of interest include the following. The company may redeem its capital and any borrowings by means of reimbursements to shareholders and lenders as from the first year of operation and even during years when it suffers losses. In effect, the company is authorized to use cash flows generated from depreciation and amortization to repay shareholders and lenders earlier than would otherwise have been possible.

In the sector of foreign exchange, the company has complete freedom to transfer funds out of Mauritania, to retain sales proceeds in foreign currency and to transfer into Mauritania only those sums necessary to effect payments in that country. Capital and loans are denominated in French francs equivalents. The company and enterprises working for its account are exempt from all customs taxes and duties on all necessary imported merchandise, materials, machinery, equipment, spare parts and consumable goods. Although with effective convertibility of the franc the Company would have this right at present, the convention restricts the ability of Mauritania to impose foreign exchange controls in the future.

The Company also agrees to maintain the Nouakchott-Akjoujt road, to construct and maintain necessary facilities at the wharf22/ and to install facilities to produce the water it requires. Further the company undertakes to give preference to local qualified labor and to contribute to professional and technical instruction of such labor. A training program is to begin during the pre-production period. The company will also construct accommodations and provide medical and recreation facilities at Akjoujt, including necessary public utilities for its employees. In this respect it is not the intention to construct a separate township, but rather to plan the buildings as part of Akjoujt itself.

The Government may receive a loan of CFAF 185 million from the Company to finance public expenses resulting from, or increased on account of, the installations at Akjoujt. This loan will bear interest at 6.5% and will be repaid in 20% annual installments from the income taxes payable by the Company.

From the point of view of the Government of the Islamic Republic of Mauritania and of the Mauritanian economy the primary impact of the Akjoujt deposits will be on the revenues of the State either in the form of taxes or a share in the profits.

The financial calculations have been made by Anglo-American on the basis of an estimated price of 37.5 cents per lb. for copper on the international market. While this price is below the recent level of copper prices, it is close to the longer term average and may therefore be considered to be a conservative basis on which to make financial projections. For the present purposes, the high mining rate based on the most recent estimate of open pit reserves of 27.6 million tons of oxides and sulphides

22/ It now appears that the extension of the wharf will be undertaken with PFD financing and that the Company will assume a larger share of the construction and maintenance of the road.
has been used. No assumption is made with respect to the mining of the underground reserves as the Anglo-American report considers that the economics of this should be considered in the light of the prevailing conditions at the time the open pit reserves are exhausted.

239. The basic return to Mauritania is the export tax of 1 cent per lb. (based on a 37.5 cents price). On the basis of sales starting in the fourth year, 1970-71, income from this source will yield some CFA 63 million. From the fifth year (1971-72) through the ninth year (1975-76) the export duty will yield some CFA 147 million annually. After this the oxide ores will be exhausted and output of sulphides will begin reaching the maximum rate, from the 12th to the 20th year, with an annual export duty of CFA 149. Small amounts of income tax will become payable in the 9th and 12th year after the period of tax exemption and the writing off of losses. However, the significant returns to the State from this source begin in the 13th year (1980-81) and range between CFA 800 and CFA 900 million in most years throughout the exploitation period.

240. The returns available to shareholders are calculated after computation of net income after tax and include depreciation and amortization reserves minus sums needed for working capital, new investment, payment of long-term debt and legal reserves. Mauritania however must repay some $4.5 million borrowed from the Caisse Centrale out of its total contribution of $4.7 million to equity and shareholders advances. The first distribution to shareholders will be used for this purpose. The balance of Mauritania's contribution is to be taken from a FAC grant. On this basis Mauritania will receive no benefit from shareholder distribution until the 7th year, 1973-74, when it will receive some CFA 38 million. It will receive CFA 218 million and CFA 441 million respectively in the 8th and 9th years and then virtually nothing again until the 12th year and after. The following table sets forth the returns which it is estimated Mauritania will receive in the form of tax revenues and dividends for calendar years 1970 through 1974. Detailed figures for the entire exploitation period are given in Table 12.

<table>
<thead>
<tr>
<th>Estimated Mauritanian Government Receipts from Akjoujt - 1970-1974 (converted to calendar years) (CFAF millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>1970</td>
</tr>
<tr>
<td>1971</td>
</tr>
<tr>
<td>1972</td>
</tr>
<tr>
<td>1973</td>
</tr>
<tr>
<td>1974</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>


241. In terms of resources available to finance Government expenditures during the Second Four-Year Plan, the Akjoujt project will yield nothing. For the period of the Third Four-Year Plan a total of CFAF 7.34 billion will become available, over a third of this in the last year of this Plan period. The annual contribution to Government revenues during this Third Four-Year Plan will average less than 5% of Government current revenues. Through the end of the exploitation period through mid 1988 Akjoujt will yield a total of CFAF 2.15 billion to the State in export duties; CFAF 7.85 billion in income taxes and CFAF 4.80 billion net in shareholders distribution after repayment of the Caisse Centrale loan making a grand total of CFAF 15.10 billion.

242. The total shareholders investment of $18.8 million in equity and advances will have been repaid in 4.1 years from the start of the exploitation while the total cash investment of $56.4 million including international loans will have been repaid in 8.1 years from the start of the exploitation period. The yield rate at which profits and equity capital discounted to the beginning of year one are equal is 16.6%. The yield will be significantly affected by changes in the prices of copper. For example, every 1 cent increase in the price per lb. of copper will return profits of over $500,000 annually.

243. In summary, the Akjoujt project appears to be an extremely profitable venture from which substantial benefits will accrue to the State. The great bulk of these benefits, however, will only become available after the end of the Third Mauritanian Plan in 1974 and will therefore concern principally long range planning and the long range availability and use of resources. Finally, the entire undertaking by the outside investors is dependent on their success in acquiring long-term international financing of the type projected.

244. A continuing source of income to the budget and to the economy will be the indirect effects of wages and salaries paid by Akjoujt. Precise estimates of wage and salary payments are not available. However, SOMIMA plans to employ some 460 personnel of whom 88 will be Europeans. This is some 12% of the labor force employed by MIFERMA in 1965. Accordingly, the Government should receive some CFAF 51.5 million annually in the form of taxes on salaries from the firm, income taxes from employees and other taxes on movable property, etc. This source of revenue will rise from an insignificant sum in 1967 to the full CFAF 51.5 million by 1970. If account is taken of the enterprises which will work for the account of SOMIMA, some further receipts in Government revenues may be added during the exploitation period.

245. The overall economic impact of the Akjoujt project will be something less than half that of the MIFERMA iron ore enterprise, but nevertheless considerable in view of the disproportionate share of mining in the Gross Domestic Product. The contribution of Akjoujt to the Gross Domestic Product calculated on a gross value added basis, begins from the second half of 1967 when an estimated CFAF 750 million will be added to the GDP. This will rise steadily through the main investment period ending in 1970 with a total contribution of CFAF 2.6 billion to the GDP and will range between
CFAF 3.2 billion and CFAF 4.6 billion during the exploitation period depending on the sales of concentrated ore and new investments undertaken during this period. In Table 13 an annual estimate of the contribution of Akjoujt to the GDP is set forth.

C. Objectives

246. The second volume will describe in some detail the present state of geological research in Mauritania and the most promising areas, where further research should be undertaken. The present report is concerned with the problems of the short run and makes recommendations to deal with these.

247. The first objective concerns the setting up of a Mauritanian geological research service. This is necessary in order to identify mineral deposits which can be exploited in anticipation of the phasing out of MIFERMA and SOMIMA by 1987.

248. Second, it is highly desirable to start a program of training Mauritanian mining technicians who can ultimately replace expatriates and other foreign experts working temporarily in this field. These technicians will also be necessary to staff the proposed geological service.

249. Third, it is necessary to encourage greatly increased private as well as public efforts to find and develop mineral deposits. For this purpose modification in mining legislation will be required with respect to both ownership and exploration.

250. Fourth, the main object of developing mineral resources is to provide financial resources which can make an important contribution to the country's economic development, although, of course, such mineral developments also create employment and exports. Consideration should accordingly be given to creating appropriate legislation supported by Government policy directives aimed at maximizing the short-term financial contribution of new mineral exploitation concessions to the Government's development program. Where feasible, existing concessions, with the consent of the concessionaires, should be included under the policy of maximizing their short-term contributions to the general development program.

D. Recommendations

251. (1) The Government should establish a small permanent geological research service in Nouakchott in order to reduce the present complete dependence on the faculty at Dakar and the BRGM. This new service must be assured of financing for a twenty-year program. The estimated annual cost of this program is CFAF 6 million. In addition some CFAF 4 million will be required to complete the equipment for the geological laboratory.
Table 12: PROJECTED AKJOUJT - TAXES, PROFITS AND SALES 1967-1988

<table>
<thead>
<tr>
<th>Year</th>
<th>Export duty (CFAF million)</th>
<th>Income tax at 35% (CFAF million)</th>
<th>Production of net Nouakchott (CFAF billion)</th>
<th>Total net smelter revenue FOB holders (CFAF million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 June 1967-June 1970 Installation period</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>62</td>
<td>33</td>
<td>2.64</td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>126</td>
<td>62</td>
<td>5.34</td>
<td>364</td>
</tr>
<tr>
<td>3</td>
<td>147</td>
<td>62</td>
<td>5.67</td>
<td>431</td>
</tr>
<tr>
<td>4</td>
<td>147</td>
<td>62</td>
<td>5.67</td>
<td>288</td>
</tr>
<tr>
<td>5</td>
<td>147</td>
<td>62</td>
<td>5.67</td>
<td>218</td>
</tr>
<tr>
<td>6</td>
<td>147</td>
<td>62</td>
<td>5.67</td>
<td>441</td>
</tr>
<tr>
<td>7</td>
<td>147</td>
<td>62</td>
<td>4.54</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>50</td>
<td>2.86</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>137</td>
<td>105</td>
<td>4.55</td>
<td>139</td>
</tr>
<tr>
<td>10</td>
<td>122</td>
<td>-</td>
<td>4.91</td>
<td>155</td>
</tr>
<tr>
<td>11</td>
<td>81</td>
<td>-</td>
<td>4.91</td>
<td>191</td>
</tr>
<tr>
<td>12</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>436</td>
</tr>
<tr>
<td>13</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>430</td>
</tr>
<tr>
<td>14</td>
<td>149</td>
<td>824</td>
<td>4.92</td>
<td>445</td>
</tr>
<tr>
<td>15</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>458</td>
</tr>
<tr>
<td>16</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>462</td>
</tr>
<tr>
<td>17</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>494</td>
</tr>
<tr>
<td>18</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>494</td>
</tr>
<tr>
<td>19</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>494</td>
</tr>
<tr>
<td>20</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>494</td>
</tr>
<tr>
<td>21</td>
<td>149</td>
<td>824</td>
<td>4.91</td>
<td>494</td>
</tr>
<tr>
<td>Total</td>
<td>2,452</td>
<td>7,850</td>
<td>1,608</td>
<td>86.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,901</td>
</tr>
</tbody>
</table>
Table 13: ESTIMATED CONTRIBUTION OF AKJOUL TO THE GROSS DOMESTIC PRODUCT, 1967-1980

<table>
<thead>
<tr>
<th>Year</th>
<th>$1,000</th>
<th>Million CFAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>3,000</td>
<td>750</td>
</tr>
<tr>
<td>1968</td>
<td>7,850</td>
<td>1,960</td>
</tr>
<tr>
<td>1969</td>
<td>11,100</td>
<td>2,780</td>
</tr>
<tr>
<td>1970</td>
<td>10,500</td>
<td>2,223</td>
</tr>
<tr>
<td>1971</td>
<td>12,600</td>
<td>3,150</td>
</tr>
<tr>
<td>1972</td>
<td>17,600</td>
<td>4,400</td>
</tr>
<tr>
<td>1973</td>
<td>18,300</td>
<td>4,570</td>
</tr>
<tr>
<td>1974</td>
<td>16,600</td>
<td>4,150</td>
</tr>
<tr>
<td>1975</td>
<td>18,650</td>
<td>4,640</td>
</tr>
<tr>
<td>1976</td>
<td>17,400</td>
<td>4,350</td>
</tr>
<tr>
<td>1977</td>
<td>13,350</td>
<td>3,340</td>
</tr>
<tr>
<td>1978</td>
<td>12,900</td>
<td>3,220</td>
</tr>
<tr>
<td>1979</td>
<td>16,250</td>
<td>4,060</td>
</tr>
<tr>
<td>1980</td>
<td>17,000</td>
<td>4,250</td>
</tr>
</tbody>
</table>
Mining and industrialization are closely linked in Mauritania. Both depend on the provision of power. The Service of Mines should be charged with studying the problems of producing power adequate to meet the future requirements of the country. This should be done in conjunction with the Ministry of Equipment which is presently charged with supervising the distribution of power.

The National School of Public Administration, which now contains a section for public works, should be expanded to include mining and prospecting sections in order to train prospectors, technicians and public works officials in this field.

A "brevet" certificate should be required for entry into the school. Students would receive a first year common general course, a second year of common technical training, and a third year of specialization. The fourth year would be spent in Europe in on-the-job training. Annual requirements are for 6 prospectors and 6 mining technician graduates. In 20 years this should produce 120 senior mining technicians, and 120 prospectors for both the public and private sectors.

In order to finance this program the following sums are estimated to be required:

- improve school laboratories  CFAF 3 million
- student scholarships (12 at CFAF 500,000 per year)  CFAF 6 million
- travel (per year)  CFAF 3 million

Total  CFAF 12 million

It is assumed that foreign technical assistance will supply professors without cost, although the general Government budget will pay part of the local cost of such personnel. It is not recommended that the training of engineers be undertaken at this time in Mauritania for reasons of cost and quality.

The program should begin this year. Students who hold the "brevet" certificate should be encouraged to apply for such training rather than to enter the field of administration. Salary as well as other inducements should be offered to this end.

Present mining legislation does not favor private mineral prospecting on a small scale. The law should be changed so as to make possible prospecting by other than large organizations. The drafting of legislation will require the services of an expert for several months.
IV. Transportation

A. Recent Developments

252. Mauritania's transport system serves three distinctly different regions: the northern region to the north of the line Port Etienne-Atar, including the iron mines of MIFERMA at Fort-Gouraud; the central region including the capital Nouakchott, and Akjoujt, the site of future copper ore development; and the southern and south-western regions to the north and east of the Senegal River including the town of Rosso, Boghé, Kaedi, Kiffa and Nema.

253. The three regions are linked together by the National Highways Nos. 1 and 2 which form an L shaped trunk route over 2,200 km. from Port-Gouraud in the north via Nouakchott and Rosso in the south to Nema in the south-east. Most of this route is still in the state of a Sahara piste and in the south it is impassable during the rainy season; an all weather road between Nouakchott and Rosso is about to be constructed under an IDA, EIB credit. At present there are only 6 km. of asphalted road connecting Nouakchott and the wharf. The rest, almost 4,000 km. of secondary tracks, consist of branches from the main trunk routes connecting towns of lesser importance in the interior to the main trunk roads. There are no feeder roads in the ordinary sense of the term.

254. The size of the vehicle fleet is not accurately known. Estimates, which are believed to be inflated, indicate that in 1966 there were 5,000 vehicles in the country, of which 2,600 were trucks and pick-ups, 40 buses, and 1,750 passenger cars. About 50% of the registered trucks have a capacity of less than 1 ton.

255. The 675 km. railway from Port-Etienne to Port-Gouraud mainly serves the export of iron ore, but it also carries general supplies.

256. The only proper port in Mauritania is Port-Etienne which handled about 6 million tons of iron ore exports in 1965; the commercial section of the port handled about 120,000 tons, mostly imports of equipment and general supplies. The port also serves the growing fishing industry. In Nouakchott a wharf, financed by FED, was opened to traffic in June 1966 and handled about 10,000 tons in the second half of 1966.

257. In the south, river navigation on the Senegal is the predominant mode of transport. Mauritania has three river ports: Rosso, Boghé and Kaedi, but apart from light river craft all commercial river transport is operated by a Senegalese company.

258. In view of the vast distances and dispersed population, air transport has a large role to play and Mauritania's aviation infrastructure is relatively well developed. It has twenty-two landing fields, but only Port-Etienne can receive transcontinental jet aircraft. The national airline operates five overage aircraft.
Total public investments for transport during the First Plan may have amounted to about CFAF 2.5 billion, excluding MIFERMA and the Nouakchott-Rosso road. By the end of this Plan major port investments will have been completed and the air infrastructure will, by and large, be sufficient to handle expected traffic. Investments for the reversal of trade flows will be completed, well behind schedule, during the Second Plan with the construction of the Nouakchott-Rosso road. By the end of the First Plan little progress had been made towards improvements of the transport infrastructure in the south, but a number of preparatory surveys and studies were completed.

B. Objectives

Government planning with respect to transport is dominated by three main policy considerations. First is the desire to reduce dependence on Senegal for the supply of imported goods. This policy has led to the creation of the wharf at Nouakchott and the decision to proceed with the construction of a modern road between Nouakchott and Rosso. These investments will lead to a transfer of income generation and government revenues to Nouakchott at the expense of Dakar. As well, they will reduce the economic cost of importing goods in the western part of the country around Nouakchott. The wharf will also provide a port of entry and exit for the inputs and outputs of the copper mine at Akjoujt.

Second, by linking the widely separated regions of the country transport planning aims at unifying the country. Because of the vast distances, however, investments in roads will be costly. Traffic volumes are low not only because of the widely dispersed population, but also because it is mainly engaged in a rural subsistence economy. Accordingly, long distance road projects are difficult to justify on purely economic grounds, taking into account both costs and benefits. Air transport in this situation and development stage assumes a role of major importance.

Third, transport policy aims specifically at developing the south and southeast areas which contain about 80% of the population.

All road transport in Mauritania is subject to control by the National Office for Public Transport - ONTP - which sets rates, allocates freight to individual transporters, and subsidizes transport to certain regions by specifying artificially low rates for certain routes and finally by making a small contribution to Government road maintenance expenditures. There is no competition between transporters and there are indications that rates in general are generous in relation to costs. Experience elsewhere has shown that the elimination of competition through administrative allocation preserves inefficient operators and raises the cost of transport to the economy as a whole. The system is costly to administer, and leads to undercutting of rates in the interior, uncontrolled shipments, and lower quality transport services. The problem is not whether certain regions should be favored by subsidies, but rather what is the best way of subsidizing specific groups of consumers. If the objective is to provide consumers in the remote areas with essential goods form Nouakchott, at
reasonable prices, then it would appear that this can best be accomplished directly through SONIMEX charged with importing such goods (see Chapter Two). If in the judgment of the Government a subsidy has to be paid, then this can best be done directly from the budget where it will be continuously subject to review against other claims on public resources. The revenues to support such subsidies as well as road maintenance could still be collected from taxation, including taxation on the transport industry. At the moment, little coordination exists between the rate policies of ONTP and the pricing policies of SONIMEX, a situation which makes it doubtful whether national objectives are being realized in a consistent manner.

264. In general, transport investments during the next two plan periods must be judged in relation to the basic development strategy evolved by the Mission which emphasizes the high returns to be gained from investments in basic agricultural and livestock development. Four main considerations should guide planning in the transport field.

(1) In the short run, the returns on transport investments must be measured against the high returns which can be obtained in the first stages of agricultural development.

(2) River transport can in the short run cope with a large part of transport requirements. These will not change to any significant extent for some time.

(3) A distinction must be made between time horizons. In the short run transport serves mainly the import trade. In the second stage agriculture will become market-oriented, as the program of development in the agricultural sector begins to produce the projected results.

(4) All transport investments with a long economic life must be tested for the possibility of becoming obsolete in the event of complete river regulation through the larger programs for agricultural and transport development in the Senegal River Valley.

C. Recommendations

265. The following specific recommendations are from the Mission's analysis of transport requirements and a review of possible projects.

(1) The construction of the Rosso-Nouakchott road will complete the investments needed at this time to attain the government's policy of Mauritanizing the country's foreign trade. The cost of this may be considerably cheaper than originally estimated; in the Mission's view the design characteristics of the present project covered under the First Plan are entirely adequate for the traffic expected and alternative design standards are not recommended.
(2) Traffic volumes in the near future will increase only moderately. Accordingly, it would not be advisable to improve long distance connections by the construction of an extensive road system. The higher cost of operating vehicles on existing roads or of providing air connections would appear to be preferable to the immense outlay for long distance road connections. It should be noted that Mauritanian authorities place greater stress on the potential role of roads in stimulating economic activity, in developing trade between the different economic regions, and in unifying the country.

(3) The Mission finds serious reasons for questioning whether the present system of regulating road transport, which includes the administrative allocation of traffic to individual transport enterprises at fixed rates, control of fleet expansion and regional cross-subsidization, either ensures the supply of road transport at minimum cost to the economy or achieves the national objectives which the system is supposed to serve.

Accordingly, the Mission recommends that serious consideration be given to re-introducing competition in the transport industry by unfreezing rates, by abandoning administrative allocations of traffic and by allowing the free entry of new operators. The Mission recommends against the extension of the present regulatory system to river and rail transport. Subsidization of consumer goods should be done through the budget and in line with reforms recommended for SONIMEX.

The ONTP should be made part of the Ministry of Equipment. It should concern itself with the collection of transportation statistics, with normative licensing of trucks and operators and with setting maximum prices. In this new role the ONTP could provide the basic information needed to make future transportation policy. Further it could set minimum safety standards designed to ensure the public of the availability of reliable transport. Finally by enforcing reasonable maximum traffic for various routes, the agency could prevent exploitation of the public by truckers. In order to avoid the large-scale entry of undercapitalized operators the agency should be empowered, in conjunction with the monetary authorities, to establish minimum conditions for the purchase of trucks with foreign suppliers' credits. Conditions should be established to avoid excessive investment in trucks.

(4) Increases in maintenance expenditures have the highest priority in the view of the Mission. The present level of some CFAF 70 million is entirely inadequate to preserve the existing road system. While the exact magnitude of requirements will be determined by a study presently being conducted by BCEOM, the Mission recommends that plans be made for a minimum allocation of CFAF 300 million per year after completion of the Nouakchott-Rosso road. The Administration's maintenance equipment require-
ments are considered quite reasonable. In addition the intensification of training of technicians and operators at the Ecole d'Administration in Nouakchott and Mamadou Toure School in Port-Etienne is recommended.

(5) The general administration in the Ministry of Equipment is adequately staffed for the foreseeable volume of construction. However, 12 out of 17 engineers are French and preparation should be made to replace them gradually by well-trained Mauritanians. For this purpose Mauritanian candidates should be educated at the Ecole Nationale d'Application des Travaux Publics de l'Etat in Paris or its equivalent in Abidjan. This program would take at least 8 - 10 years to complete.

(6) Air transport will have an increasing role to play in long distance traffic. Air transport infrastructure, however, is relatively well developed. Larger projects which the mission can recommend for inclusion in the Second Plan are the extension of the Nouakchott runway and the installation of radio equipment in smaller airports. Special attention should be given to the replacement of overage aircraft by modern aircraft of similar capacity to reduce the operating cost of air transport in Mauritania. The Mission also recommends a supplementary financial evaluation of the Kaedi project for the transportation of meat. This should consist of an assessment of the costs of extending the runway, and acquiring a modern plane in relation to the benefits consisting in reduction of the air transport cost of transporting meat.

(7) Transport investment in the southern and southeastern regions should in the short run be limited as transport requirements are small and will only moderately increase in the near future. In the first stage of agricultural development, production will increase considerably and limited investments in agriculture will yield high returns. This development, however, is localized requiring few additional inputs and generating little additional transport. Existing transport requirements for the region Rosso-Kaedi can to a large extent be met by river transport, requiring only marginal investments for the improvement of navigability. In the long run, however, agricultural development, aided by a possible large river basin development program, will generate considerable traffic requirements. As this program envisages a complete regulation of the Senegal River, river transport may again take a large share of increasing traffic. Investments in the short run could consist of removal of the rock bar at N'Gorel, and possibly some improvements in the port of Boghé. These could however only be justified if a project adaptable to stage construction could be devised. Finally, consideration should be given to relatively inexpensive river improvements between Boghé and Kaedi in order to ensure nine months of navigability.
(8) The construction of a laterite road between Boghê and Kaedi cannot be justified in the immediate future; foreseeable traffic requirements would call for its construction during the Third Plan.

(9) With respect to the Kaedi-Kiffa road the Mission recommends the employment of the services of a small engineering team to assess the causes of damage to the newly constructed works and to determine the cost of reconstruction. If claims can be made against the contractors, rectification should be sufficient to ensure an all-weather connection to Kiffa and the southeastern regions. New investments could however only be justified if they consisted of a few bridges to which the benefits of establishing an all-weather connection could be attributed.

(10) The Kiffa-Nema road has in the judgment of the Mission too small a traffic potential to justify any major improvements in the near future.

(11) The envisaged mineral developments in Akjoujt will generate additional traffic requirements on the Nouakchott-Akjoujt road. During the second stage of mining developments the construction of an asphalt road may become justified. Similarly, the capacity of the wharf in Nouakchott will be insufficient to handle the additional traffic for the Akjoujt development. However, these two projects require proper project appraisal which can only be undertaken after technical designs and cost estimates have been completed. These investments are to be paid for by SOMIMA under the terms of the convention to exploit the copper deposits at Akjoujt.

(12) In Port-Etienne the second stage of port expansion is presently underway. The Mission doubts that the third stage for which a study has been prepared by BCEOM would be necessary during the Second Plan; this would depend on production and marketing arrangements for the proposed expansion of the fishing industry. This is covered in greater detail in Section II of this chapter on fishing.

V. Education and Training

A. Recent Developments

266. During the years 1963-66 only minor progress was achieved in the educational system. Primary education enrollment rose from 18,200 in 1962-63 to 20,133 in 1965-66, which was lower than the 26,300 enrollment foreseen by the Plan. The reason for this was the necessity to reduce costs by closing underutilized schools and concentrating education in areas where minimum class sizes of 25 could be maintained. The planned improvement in the quality of education did not take place; on the contrary a continuous
lowering of the level of the teaching staff was registered. In the meantime new demographic estimates suggest that the population is higher than was earlier believed; thus the enrollment ratio may be estimated at about 9.8% of the primary school age population.

267. The number of students enrolled in secondary education has increased at a higher rate than foreseen in the Plan, 1,901 students in 1966-67 instead of the 1,520 anticipated. The percentage of students completing primary school and admitted to the first grade of secondary education has been unusually high during the years 1962-63 to 1964-65; the percentages were respectively 23%, 32% and 35%. This higher enrollment has had adverse consequences with respect to the quality of students in secondary education and the efficiency of the system in general.

268. A primary teacher training college was opened in Nouakchott in 1964. This aims at training bilingual (Arabic and French) teachers at the level of "instituteur" and "instituteur adjoint." Because of the interruption of the school year 1966, as a result of disturbances, the first graduates will leave the school at the end of the present year.

269. In the field of vocational and technical training the following changes took place:

- A Technical Lycée and a Technical College were opened in Nouakchott. However, students will be obliged to repeat the year as workshop equipment was not made available in time.
- The Port-Etienne Training Center was reorganized so as to provide training not only at the semi-skilled or skilled level but also at the foreman and supervisor level. A section providing training for the fishing industry was also added. The Center is expected to graduate 168 trainees during 1967 of whom 70 are in shorter courses and the remainder in nine-month courses. This is considered sufficient for the present limited needs of industry.
- The Kaedi Agricultural Center is at present training 20 extension workers a year. The Center is in somewhat difficult circumstances because of the fact that the Government has not yet clearly established plans for the development of the extension service. The school operates with technical assistance provided by FAO experts under a UN Development Program project started two years ago. The first class of students will complete their training in 1967.
- A National School of Administration has been created and has started programs of training dealing so far only with low level administrative personnel for the public administration.
Investments in the Field of Education Training (1963-66)

270. Investment programs formulated in education and training for the four years of the 1963-66 Plan totalled CFAF 1,022.5 million. From 1963-66 the following main projects were realized:

- The construction of the Technical College at Nouakchott and the Technical Lycée's workshop (equipment for this is due in 1967; the expansion of the College is under discussion);
- The Agricultural Training Center at Kaedi;
- The expansion of the Industrial Training Center at Port-Etienne;
- The expansion of the lycées at Nouakchott and Rosso;
- The construction of the teacher training center at Nouakchott which will be completed in 1967;
- The National School of Administration;
- The expansion of the girls college at Nouakchott which is to be completed in 1967 and which is at the lycée level.

271. In total, investments realized amounted to about CFAF 1,062 million of which the FAC paid CFAF 451.7 million and the Mauritanian Government CFAF 10.3 million. Total allocations for the period covered by the Plan including sums referring to projects already realized amounted to:

<table>
<thead>
<tr>
<th>FAC</th>
<th>CFAF 566.9 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>FED</td>
<td>288.6 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>CFAF 855.5 million</strong></td>
</tr>
</tbody>
</table>

272. Funds amounting to CFAF 403.8 million are therefore available for projects already approved and which will probably be implemented during 1967, 1968 and 1969.

Current Expenditures

273. The approved budget of current expenditures of the Ministry of Education shows the following trends in recent years:

<table>
<thead>
<tr>
<th>Years</th>
<th>National Budget</th>
<th>Budget of Ministry of Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(million CFAF)</td>
<td>(million CFAF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Budget of Ministry of Education as a percentage of the National Budget</td>
</tr>
<tr>
<td>1962</td>
<td>4,250</td>
<td>531</td>
</tr>
<tr>
<td>1963</td>
<td>4,830</td>
<td>620</td>
</tr>
<tr>
<td>1964</td>
<td>4,137</td>
<td>642</td>
</tr>
<tr>
<td>1965</td>
<td>4,350</td>
<td>700</td>
</tr>
<tr>
<td>1966</td>
<td>4,710</td>
<td>705.2%</td>
</tr>
</tbody>
</table>

a/ The above figures do not include expenditures of the Training Center at Port Etienne (about 22.7 million) and of the center at Kaedi (about 5.7 million).
Administrative Structure

274. The organization chart of the Ministry of Education has changed since 1963. A Mauritanian official has been appointed as Director of Education and the French "Inspecteur d'Académie" has become an adviser to the Minister. The teacher training college and the Boutilimit Institute are also attached to the Minister. There is no Director of Finance. This function is carried out by a Chief of Office who is also responsible for accounting, personnel and the purchase of equipment and supplies. There is no construction department in the Ministry of Education but there is an official in charge of school construction in the Ministry of Equipment.

275. In the final months of 1966 five High Commissioners were appointed as follows:

(1) Technical Education and the Training of High Level Personnel;
(2) Civil Service;
(3) Information, Broadcasting and Television;
(4) Youth, Sports and Social Affairs;
(5) Industrialization.

276. As a result the following authorities have acquired responsibilities for some aspects of education as follows:

(1) The Ministry of Education retains responsibility for primary and secondary education and for the granting of scholarships as a form of subsidy to Mauritanian citizens who study abroad at the secondary and higher levels.

(2) The High Commissioner for Technical Education and Training of High Level Personnel is responsible for the Technical College, the Technical Lycée, the Training Centers at Port-Etienne and Kaedi, and the School of Public Administration.

(3) The High Commissioner for Civil Service, the High Commissioner for Training and the Minister of Education are members of a commission charged with studying the training of high level personnel for the public sector.

(4) The Commission for the Advancement of Mauritanian Women has sponsored the creation of a Handicraft Training Center for which the assistance of an ILO expert has been obtained. In this center women are trained to weave hand-made carpets.
B. General Objectives

277. Education in Mauritania may be regarded as fulfilling two important objectives. First, it is the means of forming the human resources necessary for a developing economy. Second, education constitutes the most important means of disseminating and enhancing the culture of the nation and in fact of inculcating the youth with the idea of the nation and their obligations towards it. In the field of education and training a basic limiting factor is the matter of the present and projected cost of the educational establishment in relation to the resources which are likely to become available for this purpose. The basic short-run objective is to give first priority to the education and training of Mauritanians who are able to satisfy the personnel requirements for the economic development of both the public and private sectors. The need for such personnel will grow at a relatively slow rate. Important revisions will have to be made in the educational curriculum in order to produce the numbers and quality of personnel required.

278. It is anticipated that over the period covered by the 1968-71 Plan the current expenditure budget of the Ministry of Education will increase at an annual average rate of 5%. On the basis of the approved 1967 budget, expenditures would amount to about CFAF 1,009 million by 1971. If other educational outlays were to increase at the same annual rate, by 1971 the municipalities and communes would have an estimated CFAF 153 million available for education, and there would be about CFAF 95 million available for vocational training. The Government education budget would also have to increase to pay for the Mauritanian share of any increase in the number of foreign experts and advisors over present levels.

279. The Mission is also fully aware of the desirability of providing, as soon as possible, higher quality and more widely distributed education for Mauritania's youth. At present primary education is restricted to a small percentage of the school age population and secondary education is limited by inadequate facilities. Unfortunately, the resources available for education and training are also limited. The Mission, therefore, would recommend that investments in education and training be fully balanced with the availability of funds for current expenditures and the requirements of the suggested development program.

280. No accurate survey exists of human resource requirements in the modern sector although the SEDES team in 1962 recommended that this be done. 23/ 23/

281. The IBRD Mission, after consultation with the Government's Statistical Service, has attempted to establish a very broad estimate of human resource requirements which can be used as a basis for setting educational targets until more accurate data become available.

282. In categories of professional manpower in both the public and private sectors the estimate indicates total needs over the ten-year period 1966-76 to be as follows:

- about 150 professional staff,\(^{24}\) with a post-secondary or higher school education;
- about 1,300 middle level executive personnel.\(^ {25}\) Of these some 800 will require a complete secondary education in the secondary general or specialized schools, and 500 will require a complete lower cycle of secondary education followed, wherever possible, by some kind of specialized training;
- about 1,900 general service staff\(^ {26}\) requiring a complete lower cycle of secondary education.

283. In summary, the secondary education system would be required to produce in the period 1966-76 about 1,050 BAC graduates and 2,650 BEPC graduates\(^ {27}\), a target which is far beyond present possibilities. As a too rapid expansion of the secondary school system is neither possible nor desirable, the Mission recommends that the average annual output of BAC and BEPC graduates implied by the above figures be adopted as a target for 1971.

284. Since part of these graduates will be trained by specialized educational institutions (The Teachers Training College and the National Training School), the general secondary school system would be required to reach an annual output of about 75 to 80 BAC graduates and 240 to 250 BEPC graduates in 1971. These are in addition to the BEPC graduates who will complete the upper cycle of secondary education to attain the BAC. A reexamination of the present educational system is required if the above cited educational targets are to be attained.

285. In the period 1966-1976 some 1,000 skilled and 1,750 semi-skilled workers are estimated to be required for the private sector.

\(^{24}\) Includes administrators, doctors, engineers, secondary school teachers, high level technical personnel and administrators for the private sector.

\(^{25}\) Includes administrative officials, technicians, primary school teachers, at the "instituteur" level, certified nurses in the public sector, and medium level supervisory personnel in the private sector.

\(^{26}\) Such as qualified service staff in private and public administrations and primary education teachers of the level of "instituteur adjoint."

\(^{27}\) These figures include a 10% margin to take account of those students who are not expected to remain in Mauritania after completing their studies.
C. Primary Education

Objectives

286. If primary education is considered only as an instrument to prepare students for secondary education, then it may be concluded that both the numbers and quality of those attaining the CM2 (primary school graduate) level are inadequate in terms of the normal requirements for admission to the 6th grade. In fact, the primary schools operate under quite difficult pedagogical conditions since students are subjected from the first grade to heavy workloads by virtue of a curriculum requiring both French and Arabic language. Moreover, only some of the teachers of French have received a minimum pedagogical training, while Arabic teachers generally have had no previous training.

287. Expenditures for primary education are also quite high in relation to the quantity and quality of CM2 school teachers. Total outlays were CFAF 499.7 million in 1966 which constituted 11% of the national budget. These outlays were devoted to an enrollment of some 10% of the primary school age population. These high costs can be partly explained in terms of Mauritania's special environmental conditions. The low percentage of the population which is sedentary makes it difficult to gather a sufficient number of pupils to form a school in many areas. A high percentage of pupils are obliged to live away from their families in order to attend school. Many families are too poor to pay board and lodging for their children, so that the burden is borne by the municipalities and communes which operate with limited budgets.

288. Other reasons for the high per pupil cost of primary education are as follows:

- The number of teaching periods per week (33 hours) is greater than the number of hours a teacher is supposed to work (25);
- The teachers teach in either Arabic or French and therefore the full utilization of teachers' time is difficult in small schools.

289. In order to reduce per capita costs the training of bilingual teachers has been envisaged. The Teachers' Training College organization and curriculum have been studied with this objective in mind. If it is possible to train a bilingual teaching staff, the problems facing Mauritania's primary schools could be solved assuming that, in addition, the pupils' weekly work load were reduced (or the teachers standard work load increased) and teachers were assigned to one school for a minimum of three to four years (to reduce transfer expenses).

290. In this event it would be possible for a single teacher to care for the entire education of a group of pupils in the first three primary school grades (CPI-CEI). The critical question is whether the curriculum can be revised to reduce the weekly work load. If not, the training of bilingual teachers would be of questionable value.
The training of bilingual teachers in the four years of the lower cycle of secondary education is of even more questionable value as such training would not be sufficient for students who had received a poor primary education. Similarly, it would be very difficult to train bilingual teachers for the upper cycle of secondary education (instituteurs) as a BEPC student is for all practical purposes French speaking and could hardly become a teacher of Arabic after a two or three-year course. The cost of converting such students into bilingual teachers at this level might be prohibitive.

In summary, the organization and curriculum of primary education are serious obstacles to the establishment of an effective education program for the development of Mauritanian children. The cost of the system limits the possibilities of providing a balanced education program related to the needs of the country and makes it difficult to increase the percentage of school age children in school. In the short run it does not appear to be easy to introduce useful modifications into the present rigid structure of primary education. Accordingly, the Mission's estimate for current expenditures in 1971 assumes the continuation of present per capita costs and a slightly higher enrollment. This will result in current expenditures of some CFAF 684 million for an average enrollment of 26,300. The Mission has added CFAF 31 million of Government outlays which represents half the cost for board and lodging of pupils and CFAF 17 million which represents two-thirds of school building repairs and maintenance. The municipalities and communes would pay the balance on these accounts while retaining control over all such expenditures. Total current expenditures would thus rise to a projected CFAF 732 million.

The Mission has hesitated to discuss a definitive long-run program for primary education inasmuch as the time available for study was short and in any case the subject falls outside the scope of the present report. Moreover it is clear that some of the problems of primary education in Mauritania require a type of diversified and specialized expertise not available to the Mission. The recommendations which follow are accordingly submitted with the reservations expressed above.

The recommendations are made in the context of the following specific objectives:
- To reduce the per capita cost of primary education;
- To make the systems more efficient by producing a higher output of better educated pupils at the CM2 level;
- To attain over time a higher enrollment rate;
- To spread effective bilingualism.

Recommendations

295. (1) Review the number of weekly class periods in relation to teachers' work loads.

28/ This will be possible through the proposed construction of 126 new classrooms.
(2) Provide education in only one language in all subjects in the first three grades.29

(3) Introduce the second language in the fourth or fifth grade.

(4) Improve the training of teachers who will teach in only one language.

(5) Depending on which policy will be adopted by the Government with respect to language in the lower grades of the primary school, the training of bilingual teachers would be discontinued, and the present structure of teacher training would be modified along the following lines:

(a) Should French be retained as the basic language, the teacher training curriculum should be reshaped in order to offer:

- A more thorough education and training in French for French language teachers and in Arabic for Arabic teachers;
- Pedagogic training for teachers in the language in which they teach.

(b) Should Arabic be chosen as the first language in the primary schools, it will probably be necessary to create a new teacher training institute for Arabic teachers as the latter would be required to teach other subjects in addition to Arabic.

(c) Priority should be given in both cases to the upgrading of present teachers; new teachers should be trained in accordance with requirements of the curriculum adopted by the Ministry of Education.

(6) On the other hand should the training of bilingual teachers be continued, the Government should give serious consideration to the following points:

(a) The level of students to be admitted to the Teachers Training College.

(b) The duration of training.

(c) The curriculum.

(d) The methods of education.

29/ Mauritanian authorities place great stress on the retention of two-language training at all levels of primary education as both Arabic and French are regarded as basic languages. This year both Arabic and French were designated as official languages whereas French had formerly been the official language and Arabic the national language.
D. Secondary Education

Objectives

296. Secondary education in Mauritania is handicapped by the poor quality of primary education and the limited choice among CM2 leavers. The curriculum is based on the French pattern but includes provision for improvement of the students' knowledge of Arabic. The teachers are, to a large extent, expatriates ranging from fair to good in quality. They are likely to be transferred after a short stay in Mauritania. The schools have limited supplies of poor equipment.

297. Under these conditions students are subjected to a heavy academic burden. A large part of them, although intelligent and alert, become frustrated by the difficulties of an overloaded curriculum and are obliged to leave school before attaining the BEPC level. The number of students who attain the BAC is extremely low.

298. The secondary educational system is not equipped at present to attain the output targets indicated at the beginning of Section B. It is therefore suggested that the yearly output of 80 BAC and 345 BEPC graduates be set as targets for 1971. To attain this aim the following alternatives may be taken into consideration:

(1) A significant increase in secondary school enrollment;

(2) Improvement of the efficiency of the present system;

(3) A reconsideration of the organization and curriculum of secondary education and the development of a system better adapted to local needs and to the Mauritanian cultural environment.

299. In the short run, an increase in enrollment may appear as an easier solution. Accordingly, an enrollment of 600 in the first year of secondary school has been envisaged by Mauritanian authorities. However, unless supplementary measures are taken to reduce dropouts and repetition rates, the secondary school system would tend to reach an enrollment of close to 3,000 students if the BAC and BEPC output targets were to be attained. In this event large investments would be required and current expenditures would reach unsustainably high levels.

300. Should, however, it be possible to achieve improved efficiency in the school system with, for example, an 80% promotion rate and no more than 15% repeating, the same objectives would be reached with a lower total enrollment. Thus, with an enrollment in the first grade of secondary school of 500 and an intake of about 425, it would be possible to attain the following:

- In the lower cycle an enrollment of 1,845 students with an eventual output of 345 BEPC of whom 100 would proceed to further studies in the upper cycle;
- In the upper cycle an enrollment of about 330 students with an output of 75 to 80 BAC graduates.
301. Total enrollment in secondary schools would in this event reach about 2,165 students. Only moderate additional investments and current outlays for secondary education would be required. From the above the importance will be seen of improving the efficiency of the secondary school system and therefore of admitting into secondary schools only pupils who have a reasonable possibility of successfully completing their secondary studies. Accordingly, the following recommendations are suggested:

Recommendations

302. (1) Require higher standards of admission to secondary education.

(2) Permit only one repetition of grades per cycle\textsuperscript{30/} and only 15% repeaters in each grade.

(3) Admit into the upper cycle only pupils with the highest school performance in the lower cycle.

(4) Limit enrollment into the sixth grade to about 500 students and to about 115 in the second cycle including repeaters.

(5) Limit total enrollment in the fifth grade in the school year 1967-68 to no more than 480 in order to eliminate an abnormal increase in total enrollment in forthcoming years which would require the urgent expansion of education facilities.

(6) Keep the enrollment in each grade within fixed limits.

(7) In fact the problem of limiting total enrollment in secondary education is of paramount importance if total expenditures are to be kept at a level consistent with available funds, manpower demand and a reasonable standard of attainment. The enrollment in 1971 of only 250 students above the present level might in fact permit supplementary investments to be limited to ten to twelve new classrooms. Total current expenditures assuming 1967 per capita cost would amount in 1971 to an estimated CFAF 192 million. To this it may be necessary to add CFAF 46.5 million for students board /should PAM (World Food Program) project be discontinued/ and CFAF 14.1 million for school building maintenance. A sum of some CFAF 42 million should be budgeted for the operation of technical lycées and colleges should they again come under the jurisdiction of the Ministry of Education. In total, some CFAF 295 million will be required for secondary education.

(8) If the above calculations are accepted the possibility would exist, at least on paper, of achieving in a few years the most important targets at the BEPC and BAC levels. However, there is a real question of whether it will be feasible in practice to attain the desirable level of efficiency in secondary education through more severe selection and by adopting the suggested

\textsuperscript{30/} A general secondary school consists of a lower cycle of four years and an upper cycle of three years.
regulations with respect to repeaters. Accordingly, the Mission prefers to recommend a study of alternative measures which take into account the special environmental conditions as well as local educational and training needs in Mauritania. The following points are suggested in this respect as deserving of further study:

(a) The secondary school curriculum should be reshaped with a view to producing a more practical type of education aimed basically at preparing students for middle level or top level posts in private enterprise and public administration. This refers respectively to those students who leave after the first cycle and to those concluding the upper cycle.

(b) The relationship between the Mauritanian and French school diploma should be maintained in order to permit Mauritanian students to attend schools at the secondary and post-secondary level which provide specialized education and training in French-speaking African countries and/or in France, Belgium, Switzerland, Canada, etc. It would be necessary to negotiate a series of cultural agreements with countries other than France.

(c) One complete lycée, with a French based curriculum, but modified to accord with Mauritanian culture and needs, should be maintained in Mauritania to permit:

- The best Mauritanian students to have access to higher education in France and elsewhere;
- Foreign students in Mauritania to complete their secondary education in a school of international standard.

(9) Within the context of a complete reorganization of education the Government may wish to consider the creation of a complete secondary school or of a section within the existing lycée to provide education in Arabic. The objectives of such a school or section would be as follows:

(a) To train and upgrade teachers of Arabic who are expected to teach in primary and secondary schools, through a series of courses of various levels and duration.

(b) To allow Mauritanian Arabic-speaking students to complete their secondary education in their mother tongue and to keep and develop the legacy of the Arabic-Islamic culture.

(c) To allow successful students who have completed their secondary education to carry out post-secondary or higher education in other Arabic-speaking countries.
(10) A secondary school could possibly be built in Boutilimit at the site of the present Institute of Higher Islamic Studies. Depending upon its final enrollment, which could gradually increase from 300 to 600, the investments required would vary between $1 and $2 million for construction and equipment. Operating expenses for such a school would range from about CFAF 30 million to CFAF 60 million.

(11) An interesting alternative might be a form of collège d'enseignement secondaire with perhaps Arabic, lycée, technical and commercial streams.

(12) The Mission is aware of the far reaching consequences that any decision on these issues would have on the Mauritanian educational system and on the country's cultural orientation. It is therefore recommended that the Government appoint a special commission to study the reorganization of the school system. Technical assistance - if considered useful - might be requested from international and/or bilateral agencies in order to assist such a commission.

E. Administrative and Miscellaneous Expenditures

303. Assuming a yearly growth rate in these expenditures of 3%, expenditures in 1971 would reach CFAF 102.5 million from which CFAF 22.5 million would have to be deducted for scholarships and studies abroad if the Mission's suggestion for concentrating all scholarship programs in the hands of the High Commissioner for Technical Education and High Level Manpower is adopted.

304. In summary, the Ministry of Education's budget for current expenditures in 1971 may be estimated as follows:

<table>
<thead>
<tr>
<th></th>
<th>CFAF million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Education</td>
<td>731.6</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>294.6</td>
</tr>
<tr>
<td>Administrative and Miscellaneous</td>
<td>80.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,106.2</strong></td>
</tr>
</tbody>
</table>

In view of the fact that CFAF 47.8 million of this budget is at present paid by the municipalities and communes, the increase in the current expenditures may be considered as being CFAF 19.4 million higher than the CFAF 1,009 million foreseen earlier in Section B. This can be reduced if board and lodging expenditures of secondary school students are met partly from non-Government sources.
F. Technical Education

Objectives

305. The Mission's human resources estimates indicate that the largest requirements in future years will be for mid-level staff qualified in administration and commerce, a large proportion of whom should have some form of technical education. Therefore Mauritania's educational effort should be directed toward satisfying this need through a transformation of the general secondary education curriculum. In the event that a general modification is not feasible, consideration should be given to creating sections for commercial secondary education in the boys' and girls' lycées of Nouakchott.

Recommendations

306. (1) In the girls' lycée at Nouakchott facilities should be established to allow girls to be trained in home economics and as health assistants so they could serve as promoters of programs envisaged to improve the sanitary and living conditions of Mauritanian women.

(2) In the field of skilled and unskilled workers there is a foreseeable requirement of 2,750 up to 1976. Available facilities will permit the following outputs:

(a) Technical College - 60 skilled workers starting at the end of 1969, or 480 in total by 1976.

(b) Mamadou Toure Center - 70 semi-skilled workers a year and 10 supervisors, or 800 trained personnel by 1976.

(c) MIFERMA's Training Center - about 200 semi-skilled workers.

(d) Kaedi Center - 100 skilled workers.

In total, 1,480 skilled and semi-skilled workers would be provided for the private sector and 100 for the agricultural extension service. An additional output of 420 skilled workers could be trained at the Technical College should present facilities be expanded and enrollment increased as has recently been suggested. However, the Mission would suggest that investments be kept in abeyance until the results of present educational methods have been studied and expenditure levels determined. It is further recommended that control of the Technical College be returned to the Ministry of Education in order to permit a greater integration of the educational system. Admission requirements of the Technical College should be altered from the present CM2 to completion of the fifth grade (second grade of secondary education).
With respect to the Mamadou Toure Center consideration should be given to a gradual expansion in the number of students undergoing training. This expansion should be in accordance with the placement results of trainees who graduate, in order to avoid the training of redundant workers in certain specializations. This will require close collaboration between the High Commissioner, the Center's director, local authorities of the Labor Administration and representatives of the private sector, in particular MIFERMA.

The remaining training centers, Kaedi, National School of Public Administration, and Nurses Training School should expand and alter their programs in accordance with demonstrated requirements and the possibilities of enrolling trained personnel from interested administrations. Long-term programs (on a five-year basis as a minimum) should be established.

G. High-Level Manpower Training

The high-level training abroad of manpower has for some time been carried out in specialized post-secondary higher educational institutions. Many countries, and in particular France, increase the number of scholarships available every year. The Mauritanian Government incurs no major expenses in this respect.

Recommendations

308. (1) In order to obtain the greatest returns from the scholarship program the Government should adopt a long-term plan for the training of Mauritanian personnel who will replace expatriates after receiving the appropriate training and experience.

(2) The High Commissioner for Technical Education and High-Level Manpower Training should be charged with undertaking the preliminary studies leading to the establishment of such a plan and to its implementation. To this end all offers and requests for scholarships should be concentrated in this office. Close coordination should be established with the Plan Organization which will determine national needs for human resources. It is recommended that close cooperation be established between the private sector, including industry, and official bodies in this field for the purpose of tailoring scholarships to the needs of employers for high-level personnel.

The Budget for High-Level Manpower Training and Technical Education

309. At present current expenditures for the training centers are included in the budgets of various administrations. By 1971 it is estimated
that the various budget allocations will be:

<table>
<thead>
<tr>
<th></th>
<th>1967</th>
<th>1971a/</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Commissioner, Cabinet &amp; Central Services</td>
<td>6.4</td>
<td>13.0</td>
</tr>
<tr>
<td>Mamadou Toure Center</td>
<td>26.7</td>
<td>30.0</td>
</tr>
<tr>
<td>Kaedi Center</td>
<td>12.6</td>
<td>15.0</td>
</tr>
<tr>
<td>National School of Public Administration</td>
<td>12.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Fellowship Program</td>
<td>20.0</td>
<td>22.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>77.7</strong></td>
<td><strong>91.5</strong></td>
</tr>
</tbody>
</table>

a/ It is assumed that present unit costs will be maintained and that increases in expenditures will depend upon global enrollment increases.

310. Total Government expenditures in education and training will thus amount to CFAF 1,200 million in 1971 which would represent about 17.6% of estimated national budgetary expenditures of some CFAF 6,800 million.

Recommendations

311. It is recommended that all of these budgets be included under the High Commissioner for Technical Education and High-Level Manpower Training.

H. The Investment Program

Objectives

312. Investments in the field of education and training should be considered in relation to the returns on resources employed elsewhere. In short, if resources are devoted to education which are not development related, policy makers should know the cost of such uses of resources in terms of development foregone. In addition, consideration should be given to the fact that for every 100 francs invested in education an annual current outlay of 10-20 francs will be incurred in subsequent years. In general the Mission recommends keeping investments in education and training to a level consistent with the availability of resources to finance current expenditures.

313. Investments aimed at improving educational facilities and equipment do not imply significant increases in current outlays. Among these the following may be considered:

- For primary school supervision:
  - the building of offices and houses for the staff;
- For the primary schools:
  - the building of offices in multiclassroom schools
  - teaching aids of various types;
- For the Pedagogical Institute:
  - a modern language teaching laboratory
  - a room for projection and required visual aids
  - a supply of books in both languages (Arabic and French);
- For the secondary schools:
  - the building of offices, teachers rooms, sick bays, libraries and projection rooms
  - laboratories and storage rooms for equipment and supplies
  - staff rooms
  - the adaptation of present facilities to make them better suited to teaching and living requirements
  - the provision of audio-visual aids and equipment.

FED has already approved projects amounting to CFAF 288 million. The realization of these investments will permit an increase in enrollment in primary schools and will make available four additional classrooms for secondary education.

Recommendations

The following investments (in million CFAF) are recommended in the field of education and training for the period 1968-1971:

(1) In primary education
- 30 classrooms 60
- 2 school supervision additions (offices and staff houses) 16
- 6 vehicles 4
- school equipment 20 100

(2) In the Pedagogical Institute
- Audio-visual aids and equipment 20

(3) In the secondary schools
- building of offices, teachers rooms, sick bays, libraries, projection rooms, storage rooms 50
- 10 staff houses 50
- adaptation of present facilities in 4 colleges 20
- audio-visual aids and equipment 14
- equipment for commercial teaching 5
- 12 classrooms - construction and equipment (4 of which for commercial education) 36
- board and lodging facilities for additional students in secondary general (150) and in The Technical College (160) 95 270

(4) In the vocational training field31/
- Expansion of existing centers 10

Total CFAF 400

31/ Excludes CFAF 35 million for a training trawler together with equipment and personnel costs. This is included under investments in Fisheries.
316. The above represent new investments not yet programmed. To this must be added CFAF 288.6 million in FED projects which will get underway in 1968, making total new investments of CFAF 688.6 million for the period 1968-71. This is CFAF 111.4 million higher than investments realized in the field of education and training between 1963 and 1966.
CHAPTER FIVE: THE MEANS

I. Introduction: The Instruments of Economic Policy

317. The success of a program of development demands more than the acquisition of sufficient foreign aid or the training of an adequate number of cadres. It requires the formulation and adoption of a series of coordinated economic policy measures on the part of the Government. These policy measures should be designed to work within the framework of the existing or contemplated institutional mechanism so as to provide incentives as well as the means to achieve development goals in each sector.

318. Before discussing the use of the instruments of economic policy, it is necessary to be clear as to just what instruments are available to the Government of Mauritania. In general, economic policy in Mauritania is circumscribed by the nature of official arrangements concerning the monetary system, foreign commerce, and capital flows. In the field of monetary policy, Mauritania is a member of the West African Central Bank which controls the system of a common currency with other north African States and offers the great advantage of effectively guaranteeing the largely free movement of foreign exchange and the convertibility of the CFA francs with the French francs. Mauritania does not have autonomy over monetary policy and the Bank has the power to prescribe credit limits at its discretion. Mauritania does have a voice in the policy of the Bank. Commercial policy is restricted by the Customs Union with Senegal and other West African countries and by Mauritania's associate membership in the European Common Market. They establish general rules for the movement of goods as well as for the application of tariffs. Even in the field of capital flows Mauritania is entirely dependent on outside agencies for development finance, mainly through periodic agreements with the FAC and FED. Private capital flows principally concern the mining conventions which in effect exempt the companies concerned from any prospective foreign exchange controls.

319. What remains then is the possibility of policy measures concerning Government finances, the price and supply of basic consumer goods, development credit institutions, wages and employment standards, and the wide range of potential measures available to the State under the general heading of economic development. The latter are the main subject of the program of development action outlined above.

320. In carrying out this program, the nation's economic institutions, the Government administration apparatus and Government finances must be considered at present as factors limiting rather than supporting development. Accordingly, substantial reforms are recommended in this chapter.

321. The fact that Mauritania has an open economy involves both negative and positive implications. On the negative side the virtually free flow of goods from Senegal creates a serious problem for the policy of
supplying the East and South with goods from Nouakchott. The same applies to supplying goods to the Northeast from Port-Etienne. The open borders on the North and South mean that contraband goods will continue to flow into Mauritania unless the ONTP and SONIMEX follow a joint policy of competing in price at the point of consumption. It would be futile to attempt to close these borders and fix prices administratively in view of the long distances involved and the requirement this would create for a large staff of government officials. Furthermore, the continued flow of imports through Senegal destined for Mauritania may involve a large loss in customs receipts since the Mauritanian share of total customs receipts is only 8.66%, while its real share may well be far higher. As the total size of Mauritanian imports into the Customs Union is not known, it is difficult to demonstrate a justification for a higher percentage. Only a thorough inquiry covering interior and exterior commerce can correct this situation. Such a study would easily repay itself many times over if only in terms of the basic information it would provide the authorities on this important part of the national policy.

322. On the positive side, an open economy offers a number of distinct advantages. First and perhaps foremost it enables Mauritania to export an unlimited quantity of livestock on the hoof to Senegal and thereby provides the only important market for the bulk of the nation's inhabitants. As the core of the proposed development program concerns increasing livestock output and exports, it is clear that the customs union with Senegal is in this respect a valuable arrangement. Furthermore the free flow of labor, capital and goods between the two countries can only maximize the gains for the entire area of the customs union. A policy of autarchy would be virtually impossible for a country like Mauritania which has no supply of complementary factors of production necessary for major development investments. The fact that Mauritania has no foreign exchange problem and that imports can flow freely from most of Europe and other parts of the world is a definite advantage as both the volume and type of inputs necessary for the investment program are freely available. Further the availability of large numbers of foreign technicians subsidized by others removes to a considerable extent the limitation which might have been imposed on development by a scarcity of trained personnel at the higher levels of sophistication. Finally, the membership of Mauritania in the Franc zone and the Common Market has enabled it to acquire substantial amounts of development grants and finance which would otherwise not have been available.

323. The proposed development program with the policy measures and institutional arrangements recommended will enable Mauritania to acquire a substantial measure of control over the use of these foreign resources as well as its own resources. This policy freedom will become increasingly important as domestic output rises and changes and as the administrative apparatus for policy formulation and plan revision and control acquires depth and experience. The following section constitutes a concise version of the Mission's principal recommendations in the areas of economic policy and the institutional structure of the economy.
II. Institutions

324. The economic institutions of primary importance in carrying out the recommended development program are in the field of credit. The reforms suggested in the following sections in commercial and development finance institutions are designed to provide sufficient credit for the financing of the agricultural development program.

A. The Credit System

325. The credit system of Mauritania consists of three institutions. The Central Bank (BCEAO), a private commercial bank (BIAO), and a public development bank (BMD).

326. The Central Bank sets global ceilings for short-term credits and rediscount ceilings for industrial enterprises and is an important influence in economic policy formulation. As the volume of bank credit is limited the ceilings have not exercised a restraining influence. The sole private commercial bank is a recipient of private and official deposits and grants short-term credits to private commerce and industry as well as to SONIMEX. The BMD is a development bank which grants medium- and long-term loans. The majority of the CFAF 200 million capital is in the hands of the Government with important minority participation by the Caisse Centrale and the BCEAO.

327. The credit situation is characterized by a general sterilization of financial assets which has led to a substantial export of private and official deposits. The BIAO at the end of 1966 had total domestic deposits of some CFAF 2.2 billion of which CFAF 800 million were Government deposits including the BMD and CFAF 1.1 billion private demand deposits. Of the BIAO's total assets of 2.6 billion some CFAF 1.4 billion was exported abroad for use by the BIAO main office in France and by other African countries. Recently the Bank agreed to an 800 million line of credit to SONIMEX to finance its imported stocks.

328. The BMD has total assets of close to CFAF 1 billion of which some CFAF 370 million in capital and loans was contributed by the Caisse Centrale. Out of total short-term deposits amounting to 400 million, the Mauritanian Treasury share is CFAF 249 million. The Mauritanian Government contributed CFAF 116 million of the 200 million capital. BMD loans at the end of September 1966 consisted of CFAF 520 million divided as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount (CFAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>22</td>
</tr>
<tr>
<td>Handicraft and Industry</td>
<td>219</td>
</tr>
<tr>
<td>Commerce</td>
<td>118</td>
</tr>
<tr>
<td>Housing</td>
<td>160</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>530</strong></td>
</tr>
</tbody>
</table>


The BMD contends that in the absence of adequately organized cooperatives and acceptable guarantees, a good part of the bank's financing has had to be devoted to the fishing industry and to the construction of private housing and other buildings mainly for officials in Nouakchott. Bad and questionable debts on these accounts already exceed CFAF 65 million. Agricultural credits constitute less than 5% of the total. Some CFAF 350 million of the BMD's assets are deposited with the BIAO. The BMD is severely circumscribed from increasing its assets in the form of either deposits, foreign loans or gifts by the veto power of the minority shareholders over virtually all its operations. The problem is not lack of resources for financing development but rather a lack of good opportunities coupled with a highly conservative investment policy. Our general recommendations are as follows:

(1) The BMD should pursue an active credit policy concentrated in the rural sector in accordance with the requirements of the development program. The experience with the financing of plows in Nema justifies a more active role in this respect. A more active policy would involve both short-term and medium-term credit. It should actively encourage the creation of groups of producers, for both financing stocks of agricultural commodities and purchasing the equipment necessary to carry out the program. In addition a program should be formulated to finance the purchase of fishing boats for individual fishermen in Port-Etienne.

(2) The problem of control and development policy needs to be re-examined. If the minority shareholders cannot be persuaded to support a greatly expanded, sound program of development financing their contribution to the bank should be returned.

Financial resources to replace shareholders' capital and loans could come from official deposits now exported by the commercial banks, from borrowings from abroad, and from a program of accepting private deposits. In any event serious consideration should be given to changes in the statutes of the BMD.

B. Agricultural Credit

The program for developing farm output under the Second Plan must be supported by medium-term loans from the BMD in order to enable farmers to acquire materials, plows and silos. In addition, short-term credits should be provided for the purchase of fertilizers and fungicides. Specifically, out of CFAF 278 million of investment envisaged by the program for agriculture employing draft animals, CFAF 131 million should be advanced by the BMD in the form of two-year loans for plows, three-year loans for materials and ten-year loans for sites. Further, provision should be made for CFAF 66 million in short-term contingency loans during the three last years of the Second Plan. The repayment terms recommended for the medium-term credit appear to be eminently reasonable and well within the repayment capacities of the potential borrowers. In the Gorgol region the use of
animal-drawn plows should enable an individual farmer to add some CFAF 12,000 to the gross value of his output through an expansion of the area under cultivation. This value added would be more than adequate to repay CFAF 2,000 a year on a three-year loan for materials and CFAF 5,000 a year on a two-year loan for plowing equipment. The farmer would thus earn a net value added of CFAF 6,000 during each of the first two years and CFAF 11,000 during the third year. It may be estimated that after two successive loan periods the farmer would be in a position to replace his plowing equipment out of his own resources.

331. The BMD, however, faces the problem of proper guarantees for its loans. The first guaranty consists of the fact that loans will be made to groups of farmers and not to individuals. In this connection 148 cooperative groups have already been created in Nema and have received BMD loans which are being serviced on time. The experience of this small program is a valuable indication of what can be done on a larger scale. The second guaranty will consist of the creation of a group of trained extension workers, under the program who will assist the farmers in their efforts to increase output and will supervise the servicing of the loans. In this connection and in order to facilitate the task of the 180 extension workers programmed and their 15 supervisors, local authorities should take immediate steps to commercialize the millet crop. This can be done by collecting stocks of millet equal in value to the service payments on the loans. Payments for millet collected would be based on a minimum price. When the market price of millet rose to a sufficient level the stocks collected for the BMD would be sold and the difference between the fixed price and the market price of the millet would be returned to the associations of farmers. As storage facilities are inadequate, credit facilities would be granted to the villages to purchase silos of sufficient capacity to store the quantity of millet needed to amortize outstanding debts to the BMD. It is estimated that the annual cost per kg. of millet stored and the amount needed to amortize the silos over a 10-year period is CFAF 0.40. The surplus value, to be returned to the associations, which would result from storing the millet and selling it in the market after prices had risen would amount to some CFAF 5 per kg.

332. Thus, credit policy is intimately related to the policy of commercializing millet. As for the associations of farmers or cooperative groups, they may be a practical means for common utilization of the animal-drawn plows. At any rate, they will constitute a repayment guarantee to BMD for equipment financed. As a first step in carrying out the farm production program it is recommended that studies and pilot projects be initiated in the selected priority zones as soon as possible in order to determine with some precision the needs of farmers for the means of cultivation, the incentives to which they will respond, and the economic and social conditions prevailing. Only following such study and experimentation will it be possible to engage in a large-scale program of establishing groups of farmers and credit schemes to finance their needs.
III. Plan Administration

333. Chapter Two of this report contains an analysis of the deficiencies in authority, organization, personnel, execution and control that characterized the last Plan. We concluded that the Plan Organization as presently organized and staffed in the Ministry of Foreign Affairs could not perform the tasks required of it during the next plan period.

334. The reforms suggested will be the minimum believed necessary by the Mission to make the recommended development program operational. As such the reforms take into account the shortages of skilled personnel and the financial limitations to which the Government is subject. As experience is gained and more trained people and resources become available for the development effort, more far reaching reforms in the public administration will be appropriate.

335. Fundamentally a planning apparatus is required which will integrate overall plan and policy formulation and execution with the preparation and implementation of sectoral programs and their related projects.

A. The Planning Process

336. A national plan is really a statement of a nation's overall objectives and a strategy for reaching these objectives with defined internal and external resources. The formulation of a plan requires an examination of the limited alternative ways of reaching objectives and then a selection of the alternative which offers the greatest returns in terms of human and material resources required. It further requires the examination and adoption of specific policies which will affect the supply and use of resources available for development. A plan is usually expressed in terms of a time period sufficiently long to enable the results of the proposed strategy to have effect and yet not so long as to introduce so many uncertainties that no meaningful result can be forecast.

337. In short the Plan is a statement of national economic and social goals which must be based on economic and political realities at any given time and which must be endorsed by the nation's key policy makers.

338. This implies that overall Plan formulation will become a part of the Government's top policy making process. It further implies that all important economic policy decisions will be considered in the light of Plan requirements and their effect on the Plan.

339. None of the above, however, will produce either economic development or a realistic program for achieving it unless a number of other conditions are fulfilled.
Annual Plans of Action

340. The first condition is that the multi-annual plan be broken into annual plans of action. The annual plan should be prepared by the National Planning Agency on a virtually year round basis. It involves an evaluation of progress or lack of it in the previous year. The annual plan would estimate domestic and foreign resources available for the next year and would allocate these in accordance with the requirements of public investment projects underway and those which are to be started in the forthcoming year. The annual plan would set targets for the investment programs and output of each sector as well as on an overall basis. Adjustments would be made to compensate for failures to reach previous year targets. The multi-year plan itself might be revised in the light of experience and revised data on resource availability. Parts of the annual plan would deal with the supply of and need for technical assistance and the role the private sector would be expected to play.

341. Finally, the annual plan of action would include a statement of the specific fiscal, credit and other economic policies and organizational measures which are required to achieve the plan's annual goal in both the private and public sectors.

The Budget and the Plan

342. In Mauritania as in many other countries the critical instrument for determining economic policy and development is the annual budget. It is through the annual budget that allocation of most of the public resources available to the Government takes place. At present the process of allocating budgetary resources and formulating tax and debt policy is only affected by the needs of the development plan in the most general way. The annual plan as the expression of the Government's economic policy should provide the main guidelines for the annual expenditure budget. The annual plan must also be based on accurate estimates of current budgetary receipts, expenditures and residual balances. The present method of budgetary organization based on administrative accounts, and fairly wide discretion to transfer revenues and expenditures from one fiscal year to another, does not lend itself to an accurate appraisal of public resources available in any given year. It would appear from our investigations that the present method of budgetary presentation is heavily influenced by the desire to limit expenditures and provide a justification for cutting the funds to competing operating agencies. What are needed are reliable estimates of actual receipts and expenditures.

343. The Government's share of the annual development plan will be largely determined by the balance of funds remaining after non-development needs are met. The budget is thus, in effect, the means of weighing alternative uses of resources and expressing the Government's decision on the matter.
In order to coordinate a budget with an annual plan the budget classification system should be revised to enable the authorities to distinguish between development and non-development expenditures and current and capital outlays. Thus all the current and capital outlays related to the development plan should be distinguishable from non-plan current and capital outlays. In order to assist effective planning these expenditures should further be divided into economic classifications reflecting the sectors or fields in which spending is to take place such as agriculture, education, etc.

If these reforms are accomplished, it will be possible to determine the size of public savings available for investment and to follow with some accuracy actual expenditure on specific programs and projects. Finally, the organization of the budget should be such as to enable planners to identify realistically the recurrent costs associated with capital expenditures. Unless this is done there is the danger that a good part of current budgetary resources will be absorbed by the needs of both development and non-development capital investments undertaken in the past so that little or nothing is available to support future capital outlays. In this respect the serious deficiency of funds allocated to maintaining the existing stock of public capital in Mauritania is instructive.

**Sectoral Programs**

While annual action plans and integration of the budget into the planning process are essential steps in plan implementation, the basis for the plan has to be well thought-out sectoral programs. A sectoral program should establish objectives for the sector on a long-term basis and indicate the strategy appropriate for meeting the objectives. The sectoral program must be based on the limitations in personnel, organization, and technology characteristic of a sector as well as a realistic appraisal of the possibilities of producing changes in both the short and long run. In accordance with this appraisal, an appropriate strategy for achieving sectoral development goals, as well as a series of projects should be recommended by priority. A good sectoral program will not only identify what should be done in the short run in terms of successive annual plans, but will also make provision for overcoming the structural obstacles to development. In the process, the program will widen the scope of feasible and profitable investment alternatives which can contribute to economic development. In essence, this is the approach adopted by the IBRD Mission which is outlined in Chapter Four, a program of action. The recommendations made in Chapter Four take into account the long range needs of each sector as well as the specific inputs estimated to be required by the limited range of projects which can usefully be undertaken in the short run. Sectoral programming also involves the establishment of special administrative machinery in each ministry and high commission dealing with a given sector. The operation of this machinery must be integrated into the mechanism for central planning and policy making if a meaningful national development effort is to be formulated and carried out. The specific organizational apparatus recommended for achieving this is outlined in the following.
B. Organization for Planning

347. In the 1963-66 Plan it was recognized that the Plan Organization was of such importance as the "engine" of the nation's development and involved such sensitive political considerations that it had to be placed in the Office of the President and take its authority directly from the highest office in the country. The experience of the Plan Organization since then, as well as that in other countries, has amply vindicated this judgment. Not only was its authority progressively diminished in the course of being transferred to different ministries, but its direction lacked continuity while it was subject to the authority of Ministers who themselves were being frequently replaced. The main reason for being in the Ministry of Foreign Affairs seems to be that virtually the entire development program is financed from foreign sources. This placement ignores the fact that a Ministry of Foreign Affairs is not intimately concerned with economic policy and planning nor with the development projects which are the object of the foreign financing. Furthermore as a part of a ministry the Plan Organization must contend with an administrative barrier between it and the rest of the Government. One minister does not easily accept the decisions of another of equal rank and there is no desire in Mauritania to create a super minister for economic affairs. Finally among its other difficulties, the Plan Organization does not have the professional staff to do development planning.

348. Accordingly the Mission recommends that the Plan Organization be returned to the Office of the President of the Republic. By making the plan agency a permanent part of the Office of the President, recognition would be given to the fact that planning cuts across the responsibilities of all Government entities. It will be necessary to reconcile differences between Government agencies and to make the basic decisions necessary to bring everyone in line with the Government's development policies. In the final analysis only the President can resolve important differences and ensure the coordination necessary to make national development planning effective.

349. The head of the national planning agency should be an official who has the full confidence of the President and who has a sufficiently high rank to deal directly with ministers and high commissioners on an equal basis. Of course, the real authority of the national planning agency and its head will derive from the fact that the head of the organization is known to speak and act with the authority of the President and on his behalf.

350. We have alluded to the necessity that important economic policy decisions be considered in the light of plan requirements and their effects on the plan. It is therefore desirable that the head of the plan organization be in a position to act as the Chief Executive's most important adviser on economic matters. This will ensure that Government economic policies and development policies do not work at cross purposes. Furthermore, in view of the scarcity of planning and economic expertise in Mauritania, the Chief Executive would be well served by having the two functions combined in a

1/ See attached Chart "Proposed Organization of Planning and Economic Policy Making in the Government of the Islamic Republic of Mauritania."
single individual who could bring to bear the full weight of the planning organization's expert staff on matters of current policy. This would overcome the present, evident lack of staff work in depth which results in too little attention being paid to the implications of major decisions. In order to accomplish the above, the Mission recommends that the Office of the Economic and Financial Advisor to the President be combined with that of the head of the new national planning agency in the Office of the President.

The Statistical Office

351. The Government's central statistical agency does not necessarily have to be part of a planning agency. It will in fact perform services and direct statistical collection efforts which do not have anything to do directly with the planning process. Nevertheless one of the major constraints hampering effective planning is the lack of sufficient, reliable data. This affects national planning but is perhaps even more of a drawback for sectoral programming. For example in the critical rural sector there are not even reliable production statistics of the basic crops and types of livestock. To set up completely independent statistical services in each ministry would not only lead to confusion and costly waste of effort but would fail to utilize scarce talent to the best advantage. Accordingly, it is recommended that the Statistical Service also be moved to the Office of the President under the overall direction of the head of the national planning agency.

352. In order to begin collecting the most important data about economic and social conditions in Mauritania the staff of the statistical service will have to be augmented. Specifically the number of technical assistants should be increased from one to three and the number of secretaries from one to two in order to permit the tabulation and preparation of statistical data. At present the head of the service is often required to do clerical and secretarial work which prevents him from performing the professional tasks for which he was engaged.

353. In addition an adequate travel allowance should be provided to enable the head of the service and his assistants to visit areas outside of Nouakchott in order to supervise and coordinate the collection of the necessary statistics.

354. Finally, the statistical service is the logical place to install a mechanical statistical machine center. Such a center can be acquired and operated at a modest cost and will yield great returns in terms of the service it can provide to the public administration in general as well as to the planning organization in particular. Such a center would be immediately useful in the systematization and checking of tax returns and customs declarations. A full report prepared by a French expert already exists for the installation and operation of such a center.
The Office of the Director of the Plan in the National Planning Agency

355. The Mission recommends that the Office of the Director of the Plan comprise the following three divisions:

- The Office of the Ordonnateur, FED-FAC
- The External Aid Division
- The Planning Division

356. The Office of the Ordonnateur for FAC and FED financed programs would perform the same functions as at present.

357. The External Aid Division would coordinate and negotiate all foreign development financing and would coordinate and negotiate technical assistance requirements. The proposed work of this division would constitute an important departure from past efforts to coordinate the acquisition of foreign aid in several respects. The present practice of having operating agencies go directly to foreign sources of finance would have to be stopped. The External Aid Division would be charged with ensuring that all aid requested was compatible with plan objectives and specifically in accordance with the priorities established in the sectoral programs and the national plan. Similarly a great need exists to coordinate the overall plan with the large number of foreign experts serving in Mauritania under international and bilateral technical assistance. Actual negotiation for technical assistance could well be carried out elsewhere. Technical assistance is no more unlimited than is foreign aid and should accordingly be treated as a scarce resource to be used for the highest priority purposes. Finally, this division should provide the central coordination for determining what kind of foreign fellowship and scholarship are needed to fulfill plan requirements. It could also be charged with negotiating with foreign governments to provide the necessary places for eligible Mauritians. In any event this function would have to be coordinated with the office of the High Commissioner for Technical Training and Cadres which would select appropriate candidates and supervise their progress.

358. The Planning Division is potentially the most important part of the planning agency. It will be charged with preparing the plan, evaluating the results on a continuous basis, and making revisions as appropriate. It will undertake the preparation of the annual plans of action and will consider important economic policy questions in terms of their impact on the plan.

359. For the moment there are no Mauritians or expatriates available to staff this division. Accordingly an intensive training program should be started to train Mauritian planners who can eventually staff this division. People with the necessary scholastic background can be trained in a number of existing international schools. Others will require more time to acquire the necessary academic and practical background. Until this training is accomplished and the people selected have acquired experience, it will be necessary to rely upon foreign technical assistance for the staff of the Planning Division. The Mission recommends that three planning experts be engaged initially.
Sectoral Programming Organization

360. The sector and sub-sector programs suggested by the recent World Bank Mission could be taken as a starting point. The preparation of sector programs must, however, be a continuous activity. For this reason a special organization must be established with clear links to the overall planning machinery. As sector programs will have to be prepared in the operating ministries and high commissions charged with implementing development projects these technical agencies should contain at least one experienced high level programmer responsible for this function. The agencies requiring a programming officer (Conseiller Technique au Plan Sectoriel) are the following: the Ministry of Rural Economy, the Ministry of Equipment, the Ministry of Education, the High Commission of Mines and the High Commission of Technical Training and of Cadres.

361. The programmer selected should be capable of making cost-benefit analyses and producing sector plans. He would be charged with drawing up the long range plans for his sector in conjunction with other senior officials of his agency. He should coordinate the development planning of the various ministers and work to resolve conflicts between divisions. In the case of the Ministry of Rural Economy the work of the hydrology and crop divisions has suffered from continuous policy disputes and confused lines of authority involving development projects. The programmer should follow the execution of programs underway and set standards for reporting on execution. He should formulate the investment and recurrent budgets for his organization on the basis of directives issued by his Minister or High Commissioner. To perform these functions he should have regular access to the head of his agency and be designated as the official spokesman for his agency with the head of the national planning agency. Specifically he would be the agency's appointee to the Inter-Ministerial Planning Committee.

Inter-Ministerial Planning and Policy Committee

362. This committee would be chaired by the head of the national planning agency and would meet regularly. It would be charged with formulating uniform criteria and standards for preparing programs, projects, and sector and national plans and for reporting on their execution. It would be the central body charged with coordinating the work of the technical agencies with that of the national planning agency.

363. The Committee would also have a senior official of the Ministry of Finance as a permanent member for the purpose of assisting in coordinating the work on annual plans with the annual budgetary requirements of the plan.

364. The Economic Committee of the Council of Ministers (see below) will be composed of the nation's highest economic policy makers. In order to facilitate and focus their consideration of policy questions it would be highly desirable to ensure that the senior economic staff of each concerned ministry and high commission is involved in reviewing the staff papers and issues which are to be brought before the President and his economic ministers. The Inter-Ministerial Planning and Policy Committee
should be charged with this function as well. The committee would meet before each Economic Committee session. While it would be desirable if agreement were reached on each policy issue by these staff members it is by no means necessary. The sub-committee would serve the purpose of informing and involving senior officials in Government policy-making on a continuous basis and of ensuring that the views of each agency received a full hearing at the staff level and were fully coordinated with the Plan before being brought before the Ministers. This procedure would overcome some of the drawbacks of the present situation in which frequent changes in ministerial assignments take place and would provide improved continuity in economic policy-making.

Economic Committee of the Council of Ministers

365. The National Planning Agency is a technical agency which not only produces a national plan but also is concerned with specific policies related to achieving plan targets. The final decisions on plan and general economic policy must be made by the President and his Cabinet, usually by selecting from alternatives suggested by the planning agency apparatus.

366. In order to facilitate adequate consideration of the alternatives involved in development policy-making, the Mission recommends that an Economic Committee of the Cabinet be established with the President of the Republic as Chairman and the following permanent members: the Ministers of Finance, Education and Culture, Rural Economy, and Equipment; the High Commissioners of Industry and of Technical Training and Cadres would attend as advisors to the President. The head of the National Planning Agency should be Secretary of the Committee responsible for preparing its agenda. The staff of the Planning Division and National Planning Agency should constitute the secretariat of the committee. The Economic Committee of the Cabinet would consider all development planning problems and economic policy questions before they are sent to the full Cabinet for decision.

C. Major Conclusions and Recommendations

367. (1) The National Planning Agency should become a permanent part of the Office of the President.

(2) The Office of the Economic and Financial Advisor to the President and office of the head of the National Planning Agency should be combined.

(3) The National Planning Agency should contain two directors, one for statistics and the other for planning. The Office of the Director of Statistics should be composed of a Statistical Machine Center and a Central Statistics Division; the Office of the Director of the Plan should be composed of an Office of the Ordonnateur, and External Aid Division and a Planning Division (staffed by trained economists).
A Sectoral Programming Apparatus should be set up within each ministry in order to continue the preparation and improvement of sector and sub-sector plans started by the World Bank Mission. For this purpose programming officers should be appointed in the key technical ministries and high commissariats.

An inter-ministerial planning and policy committee should be established under the chairmanship of the head of the national planning agency, consisting of the programming officers of the operating agencies as well as a representative of the Ministry of Finance to coordinate the annual plans with the annual budgets. The programming officers should also serve as senior economic staff members of their respective organizations. This committee should also review material and discuss the issues to be brought before the Economic Committee of the Cabinet.

An Economic Committee of the Council of Ministers should be established to examine alternative economic development and economic policy decisions before they are brought to the full Council of Ministers.

The system of budgetary accounting should be revised so as to enable policy makers to identify cash receipts and expenditures, current and capital costs and expenditures by meaningful economic categories.

IV. Government Finances

A. Fiscal Policy

There are two principal sources of finance for the public sector of the Plan. Most of the funds for development expenditures come from abroad in the form of concessional aid to Mauritania. Most of the domestic expenditures needed to complement capital formation are derived from the Government budget. Capital expenditures undertaken in the past create recurrent expenditures for operation, replacement and maintenance which must be paid out of current Government financial resources. In addition, the Government must pay for a considerable part of the cost of other development related outlays such as technical services in agriculture, livestock, fishing, communications, and education. Ultimately, the future taxable capacity of the economy will determine how much resources will be available for both development-related and non-development-related current expenditures. The amount of current finances which can be devoted to development-related expenditures will determine in turn how much capital expenditure can be undertaken during the next plan period. Since the budgetary situation is already tight, and recurrent costs for maintaining past investments are not being adequately provided for, it is clear that the budget will constitute one of the main limiting factors of the development effort.2/

2/ In Appendix I a description of the budgetary system and its implication is set forth in greater detail. See Table 14 for an estimated consolidated budget.

- President of the Republic
- Council of Ministers
- Economic Committee of the Council of Ministers
- Inter-Ministerial Planning and Policy Committee
- Office of the President
  - Head of National Planning Agency
  - National Planning Agency
- Operating agencies
- Office of the Director of the Plan
  - Planning Division
  - External Aid Division
  - Ordonnateurs
- Office of the Director of Statistics
  - Statistical Machine Center
  - General Statistics Division
With the inadequate data available on the size and nature of the tax base, it is difficult to make more than a tentative estimate of future revenues except for projected income from the mining sector.

Expenditures pose a similar problem. Policy decisions affecting non-development recurrent outlays in such areas as education, social services and national sovereignty have not yet been formulated. Accordingly, projections of the future allocation of budgetary resources can only be made on the basis of what is believed to represent a reasonable assumption concerning Government policy. In this context it has been assumed that development will be given high priority in the allocation of funds. This will require a continuation of the policy of austerity for most non-development current outlays, and even greater limitations on the expansion of personnel expenditures than have been imposed in recent years. Essentially, the projections are designed to indicate the nature of the problem of providing sufficient current financial resources for the development program outlined in this report. In addition, the discussion and recommendations are designed to focus attention on this critical area of government economic policy.

B. Recent Developments

From 1960 through 1965 the overall deficit of the equipment and current budgets amounted to CFAF 8 billion. This was more than covered by the receipt of some CFAF 8.3 billion in French Government subsidies. The fiscal developments since independence can be seen most clearly in terms of the period before 1963 and the period thereafter. In the first period (1960-63) current receipts rose from CFAF 1,033 million to CFAF 3,423 million. Of the CFAF 2.4 billion rise in current revenues, CFAF 600 million was in the form of direct taxes and CFAF 1.2 billion was in the form of indirect taxes. MIFERMA contributed some CFAF 500 million in addition. In this period the principal reason for the rise in revenues was the introduction of turnover taxes and the imposition of higher income tax rates. In the second period (1963-67) total current revenues are expected to rise by some CFAF 1.7 billion of which less than 100 million in direct taxes, 500 million in indirect taxes and CFAF 1 billion in taxes from MIFERMA under the Long-Term Tax Scheme (see Table 17).

In the second period virtually no new important sources of revenue were developed although a good deal was done in 1964 and 1965 to collect tax arrears.

On the expenditure side of the current budget total outlays rose from CFAF 3,116 million in 1960 to CFAF 4,331 million in 1963 (see Table 15), a rise of some CFAF 1.2 billion. Personnel outlays accounted for some CFAF 800 million of this and materials and equipment less than CFAF 300 million. Maintenance outlays fell and transfers rose. In this period the entire expense of the security forces was assumed by the Government as well as other outlays connected with establishing a new Government.
In the second period (1963-67) total outlays are expected to rise by close to CFAF 800 million of which CFAF 600 million is for personnel outlays, CFAF 140 million for public debt and CFAF 36 million for maintenance. In 1963 the Government adopted a policy of austerity in current outlays in order to be able to dispense with the French subsidy to the current budget. This involved limitations on personnel compensation and new hiring as well as cuts in material and maintenance outlays. The restraint imposed on overall expenditures coupled with the rise in revenues, mainly from the mining sector, enabled the budget to be brought progressively into better balance. A balanced budget was forecast for 1967.

The equipment budget which ranged from CFAF 524 million in 1963 to CFAF 291 million in 1965 has never represented more than a small part of total public investment spending. Infrastructure and building investments included in this budget represent outlays which could usually not be financed under the criteria of regular FAC and FED programs. Expenditures were programmed when financing was assured from special French subsidies. Between 1963 and 1965 these subsidies amounted to CFAF 2.3 billion whereas total outlays amounted to CFAF 1.2 billion. Surplus funds were carried over for the financing of this budget in subsequent years (see Table 19).

In the past, budgetary policy has in the final analysis been determined by the availability of current receipts. Accordingly, expenditures were tightly restrained after 1963 when the French subsidy to the current budget was discontinued. The subsidy to the equipment budget has been declining and may soon be discontinued.

Despite the policy of austerity, personnel outlays are projected to rise by 26% between 1963 and 1967 which implies a continued augmentation of staff in addition to normal increases in outlays for salary increases, promotions and family benefits. Security expenses are forecast to require 22% of total government expenditures in 1967 compared with 10% in 1960. In a developing country which cannot afford minimum development expenditures, to say nothing of non-development-related welfare outlays, this allocation of public resources could seem to bear serious reexamination. Consideration should be given to using part of the armed forces for development-related activities (see Table 16).

Faced with the necessity of reducing the current deficit and with increased receipts mainly from MIFERMA, other expenditures, particularly those for maintaining the existing stock of capital, were kept far below the amount required. Thus although fiscal policy was sound, on an overall basis the allocation of budgetary resources was such that a net disinvestment took place in the public capital stock.

C. Domestic Financing of the Plan

Projections of future financial requirements for the current budget are based on the assumption of a 5% minimum rise in personnel outlays mainly for promotions and welfare benefits. Additional personnel are assumed necessary for the recommended development program mainly in agriculture and livestock (priorities 1 and 2). Similarly, purchases of materials have
been projected to take into account minimum present needs as well as new future requirements resulting from the development program. If the program is cut some savings in recurrent costs can be made. Maintenance expenditures have been projected to more than triple. Road maintenance requires the largest increases, but the maintenance needs of buildings and capital equipment have also been taken into account.

380. Given the present tax system, and after discussion with authorities in Mauritania, a normal average annual rise of some 5% in revenues has been assumed. The important mining sector has been estimated separately (see Chapter Four, Section III).

381. It is assumed that the State will not be able to finance all of its investment requirements from outside sources and that certain projects and equipment purchases will continue to be financed through the equipment budget. This budget has been maintained at the present level of some CFAF 500 million. On the basis of the above, an overall financial deficit of between CFAF 1 billion and CFAF 1.5 billion may be estimated by 1971. The budget problem may be aggravated by the proposed inclusion in 1968 of the budgets of the autonomous agencies such as Radio Mauritania, Air Mauritania, the ONTP, the National Railway Company, the Port Authorities, and the Postal System. Some of these agencies are presently running substantial deficits.

382. In addition to the above, consideration should be given to the management of the public debt to ensure that debt is neither incurred for unproductive purposes nor incurred in unsuitable forms. Mauritania's foreign exchange position would appear to be sufficiently strong, by virtue of the export of minerals, to justify a substantial rise in foreign public indebtedness for the purpose of financing productive investments under the development program. In fact, the proceeds of mineral exports are not repatriated except in so far as the mining company must pay export levies, taxes and local labor and supplies. The ability to service additional external debt is thus dependent on these much smaller actual receipts of foreign exchange. In addition the ability to service external debt is dependent on the availability of adequate budgetary resources. Finally, the purpose of borrowing is important since loans which result in the generation of sufficient foreign exchange and domestic resources to enable them to be serviced must be evaluated differently than those which do not have this advantage.

383. Particular attention should be paid to the financing of a large volume of public and private imports through the use of short-term foreign suppliers' credits. Such credits can cause heavy foreign exchange outlays in the short run, while financing capital equipment which yield returns only over the long run. In the case of Government procurement they can also lead to large burden of current payments from the budget. This could be particularly detrimental in the case of Mauritania even though the foreign exchange constraint is not important at this time.
It is clear that it will be necessary to raise current revenues in the near future. The suggestions which follow should be regarded as preliminary since only two partial studies of the fiscal system exist upon which to base recommendations. A complete reform of the fiscal system cannot be undertaken without a far more exhaustive enquiry. At present a national commission has been charged with studying the fiscal system with a view to recommending changes. The results of this study were not available at the time of the writing of this report.

(1) The most obvious source of substantial new revenues is through a revision of the customs sharing agreement with Senegal. The total yield from this source for Mauritania is some CFAF 1 billion. Assuming experts in Mauritania are correct in believing that the correct division should be based on 15% instead of 8.66% of total customs receipts, Mauritania would have a potential annual gain of some CFAF 700 to 800 million. Accordingly, a thorough enquiry of the foreign commerce of Mauritania is recommended. Such an enquiry could lead to discussions with Senegal on the appropriate share of total receipts accruing to Mauritania.

(2) The Government of Mauritania presently purchases its equipment and materials through local merchants and is perhaps the biggest single buyer in the country. Prices are calculated in most cases after payments of import duties plus profits. These profits are based on the CIF value plus duties. Since some 92% of import duties are automatically turned over to Senegal the Government of Mauritania is in effect transferring part of its scarce current revenues to another State. It would seem logical, therefore, to institute procedures to allow official purchases to enter duty free and to calculate prices paid by the Government on the basis of the tax free value of the goods. Estimates indicate that some CFAF 200 million or more are presently paid in customs duties by the Government. However, granting a duty free privilege would require Mauritania to harmonize its procedures with Senegal in this respect. Any decisions taken would have to be in accord with the Yaoundé Convention and should operate in a nondiscriminatory manner towards the major trading areas from which Mauritania purchases. Further such a step would require some centralization of official buying abroad. As a first step an investigation should be launched to determine to what extent Senegal grants duty free privileges for official imports.

---

In this connection all official imports financed by foreign aid or official loans to the Government should be granted immunity from import taxation. In the case of goods financed by foreign grants this would avoid transferring aid to Senegal in the amount of 93% of the duty. In the case of loans, Mauritania would not have to undertake a debt burden for the benefit of Senegal. In some cases aid financed imports are allowed to enter duty free but only after great uncertainty, difficulty and delay. The problem is to establish a consistent policy for the future.

(3) An important aspect of the fiscal problem of the Government concerns the local communities, both urban and rural. Under the law there are eight urban communities, with two types of administration, and thirty-one rural communities (communes rurales). Urban communities are supposed to possess sufficient resources to enable them to balance their budgets. The principal revenues of all the local communities are head taxes on animals. The urban communities also receive a share of a variety of other taxes such as those on movable and non-movable property, licenses and the "centimes additionels." The communities also receive subsidies from the Central Government. The communities pay for the maintenance of roads, student boarding expenses and a teacher living allowance in addition to their other expenses. The Government pays for the capital costs of schools and public works and teacher salaries.

It is difficult to determine with any precision the cost to the Central Government of urban services such as police, administration, health, education, water and electricity. Therefore the cost of Central Government services to the mining towns of Port-Etienne, Fort Gouraud and, in the future, Akjoujt is not known. Such costs should be considered in calculating the real fiscal impact of the MIFERMA mines and in the future of the Akjoujt mines. According to the State budget, the cost of social services alone (including education) was over CFAF 1 billion in 1966. The system of budgetary classification makes it difficult to distinguish between administrative and other expenditures undertaken on behalf of the local communities.

The urban communities contain people with considerably higher income levels and higher-value property than those in the rural communities. The urban communities also require more elaborate administration, maintenance and social service expenditures as well as capital outlays.

In both the urban and rural communities a much larger portion of the burden of the costs now borne by the central budget could be undertaken by them if tax rates were increased and perhaps new taxes imposed. As the services in question directly benefit the people receiving them the resistance to increased taxation should not be too great. Furthermore, the demand for
increased social services cannot be met in the foreseeable future from Central Government finances. For example, the Government's elementary school budget is expected to rise from CFAF 500 million in 1966 to over CFAF 700 million by 1971. Not much more than 10% of the relevant school age population is affected by this expenditure. If communities desire more education, a good way to finance it would be through local taxes. Much the same can be said of the construction and maintenance of local roads and wells.

Official sources indicate that not more than 70% of taxes due are collected in the communities. The total 1966 budget of both urban and rural communities was CFAF 520 million. Of this the head tax on livestock was some CFAF 260 million. The head tax on livestock is particularly inequitable in that the total amount for each community or subdivision was fixed in 1961 by law. However, the number of animals in each subdivision is not known. It appears that richer communities often pay less than poorer ones. Local officials contacted by the Mission believe that the proportion of animals subject to the tax ranges from 10% to 40% depending on the area.

The importance of the head tax on animals can be considerable in a country in which the bulk of the population are engaged in nomadic livestock herding. One expert estimates that Niger with 40% more animals than Mauritania produces 75% more tax revenues from them. In Chad with 90% of Mauritania's livestock, tax revenues from this source exceed those of Mauritania by 20%.

Reform in local taxation cannot be undertaken without more detailed knowledge of the tax base and the conditions prevailing in the communities. In general, the reform should be based on increasing local tax revenues to pay for local services. The administrative apparatus to gain the necessary consensus to accomplish this reform exists in the form of the local elected community assemblies.

It is recommended that a full enquiry be undertaken of the existing tax system, the potential tax base, and the management of the fiscal structure with the purpose of recommending specific reforms in administration and increases in tax yields from present and new taxes. Consideration should be given to raising certain import duties in the customs union to a level consistent with rates in neighboring countries. Consideration should be given to raising the turnover tax on imports (la taxe sur chiffre d'affaires) to the level of neighboring countries. A change from 4% to 7% could yield a further CFAF 100 million. The bulk of the population is not subject to any direct taxation and the returns on the head tax on animals is much inferior to that of other countries. Any reforms in direct taxation must take into account the question of incentives since excessive taxation of the rural population could constitute a
disincentive to produce the output gains projected in the development program. In the future, of course, the increasing revenues of the rural population together with the monetization of this part of the economy will provide greater scope for both direct and indirect taxation. A study should consider whether and how the tax base might be broadened to acquire increased revenues. It must take into account the fact that the bulk of the population is still nomadic, that barter accounts for a good part of exchange and that financial records even in the modern sector are deficient. The forthcoming population census should be expanded to fully cover the modern sector and should include a family budget study for both the modern and traditional sectors (this is recommended in Chapter Four, Section D, the rural program of action). These basic studies should provide essential information on the size of the taxable population, the distribution of income and the family status of taxpayers. The high proportion of indirect taxes in total tax revenues imposes a further limitation in that the low levels of average incomes leave little margin for raising the cost of living. The entire system of income and profits taxes needs to be reviewed from the point of view of equity and the possibility of increases in returns. In the section on administration, a recommendation is made that tabulating machinery be purchased partly to systematize the collection procedure and reduce evasion.

D. External Finance

385. The action program for new projects and development activities outlined in Chapter Four consists of two alternative development programs. The larger program amounting to some CFAF 8.6 billion over the four-year period is the most desirable from the Mission's point of view. It will not only enable Mauritania to undertake the immediately productive investments in livestock and agriculture which are the core of the Mission's development strategy, but it will also enable an important start to be made on a number of projects which will yield productive returns in future plan periods. The minimum program consisting of some CFAF 6 billion in investments emphasizes projects which will yield early gains in output with relatively low capital-output ratios. In the Mission's opinion the minimum program is essential. Some parts of the larger program are dependent on tied sources of foreign financing. If such financing becomes available these projects may have to be carried out even if other higher priority projects are not to be financed.

386. The following table illustrates the main sectors covered by the two recommended programs together with the general orders of magnitude of the investments to be financed from mainly public international sources:
### Proposed Investments
Four-Year Development Program 1967-71

<table>
<thead>
<tr>
<th></th>
<th>Entire Program</th>
<th>Minimum Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Livestock</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Fishing</td>
<td>2.5\textsuperscript{a}</td>
<td>2.5\textsuperscript{a}</td>
</tr>
<tr>
<td>Education</td>
<td>0.4</td>
<td>4</td>
</tr>
<tr>
<td>Mining\textsuperscript{b}</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Others\textsuperscript{c}</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8.6</strong></td>
<td><strong>6.0</strong></td>
</tr>
</tbody>
</table>

\textsuperscript{a} Includes CFAF 1.4 billion, the estimated cost of a Mauritanian fishing fleet during the period 1968-71. It is assumed here that this will be financed from public capital sources, although private sources might well finance part or all of the capital required.

\textsuperscript{b} Estimated cost to the Government for Akjoujt communications and other public expenses to be partly financed by an advance of CFAF 185 million from SOMIMA. The figure also includes provision for recommended studies of other mineral resources.

\textsuperscript{c} Includes possible new investment in communication and other infrastructure not described in this report and which may prove to be desirable following the completion of more detailed studies than those now available. Examples of such investments would be river navigational investments and air transport.

387. In order to obtain some idea of the total amount of publicly financed investment proposed for the period through 1971 account must be taken of the undisbursed portion of commitments undertaken in the past by the FAC, FED, IDA and the EIB. The FAC and FED committed a total of CFAF 15.6 billion during the period 1960 through 1966. Of this, CFAF 8.6 billion was disbursed through 1966 leaving CFAF 7 billion to be disbursed from 1967 through 1971. In addition IDA and EIB are financing the Nouakchott-Rosso road. It is estimated that some CFAF 1.2 billion will be spent by IDA and EIB through 1971. Thus total funds to be disbursed between 1967 and 1971 for existing publicly financed projects amount to some CFAF 8.2 billion.

388. The foregoing discussion relates to public sector investment. In addition, in the private sector, SOMIMA is expected to spend about CFAF 1.3 billion for the estimated cost of investments in the Akjoujt mine and related productive facilities including town infrastructure, the road and the wharf.
Repayments of predecessors interest has been excluded. Mauritania with a 25% equity share in SOMIMA will participate in the CFAF 1.1 billion shareholders contribution to equity and advances. This amount of CFAF 0.25 billion will in turn be financed by the Caisse Centrale. The IFC and EIB are being asked to provide some CFAF 9.4 billion in loans for this project.4

389. The above is by no means a comprehensive listing of all projected investment in Mauritania through 1971 as it excludes probable private investments in commerce, agriculture and other sectors.

390. The important consideration from the point of view of development planning is the capital required for the new programs recommended to be financed from public sources. Virtually all of the CFAF 0.6 billion required for the recommended program and the CFAF 6 billion for the minimum program will have to come from external public sources.

391. The amounts involved are not unreasonable if the experience of the last Four-Year Plan can be taken as a guide. In the first three years of that Plan some CFAF 13 billion in commitments was obtained for the public sector mainly from the FAC and FED. After discussions with FAC officials in Nouakchott and Paris, the Mission believes that it would be reasonable to assume that some CFAF 3 billion or more in new grant commitments might be obtained from FAC over a four-year period assuming justifiable projects were presented for financing. Funds from the FED are less certain in view of the fact that there is no assurance of a new FED program after 1969 when the present FED program expires. Mauritania still can obtain over CFAF 1 billion in funds set aside for it under the second FED program and could even increase this given sufficient justification based on an acceptable development program. In addition, the Caisse Centrale provided important sums in the past for such sectors as fishing and may be expected to do so again for formulated projects.

392. Financing would thus appear to be assured for the minimum program recommended by the Mission. Further sums may be obtainable from both the FAC and FED based on new requests as well as from shifts in funds from present lower priority uses. Finally, it may be possible to obtain financing for parts of the programs from other financial institutions assuming adequate justification and competently prepared requests. In general, the availability of external finance does not appear to constitute a serious limiting factor on Mauritania's development. Rather the availability of adequate external finance depends on the adoption of soundly conceived and acceptable development programs and projects together with the generation of internal public savings sufficient to provide the necessary counterpart to foreign assistance.

4/ See footnote of paragraph 232 for the revisions in the financial structure of the Akjoujt project.
APPENDIX I

The Budgetary System

1. The system of fiscal accounting employed in Mauritania makes it very difficult to use the State budget as an instrument for current economic analysis and policy making. There is no reliable way of gauging actual receipts or expenditures for any past budgetary period. Instead, figures are adjusted for budgetary years on a fairly arbitrary basis which will be explained more fully below. Accordingly, projections for even the near-term future cannot be based on reliable figures for the recent past. Because of these numerous adjustments, figures for the preceding year are not even available until after the new year's budget has been submitted and approved by the National Assembly.

2. The budget is not development oriented. The system of budgetary expenditure classifications is in terms of administrative agencies rather than purposes of expenditures. Accordingly, it is impossible to distinguish development from non-development-related expenditures. Further, the budget makes no clear distinction between capital and current expenditures. The equipment budget is in fact a residual to which are transferred expenditures which are not financeable through regular FAC and FED grants.

3. The meaning of public saving is also confused by the practice of arbitrarily transferring certain receipts and expenditures to and from the accounting periods. No account is taken in these figures of certain important social funds and of the full impact of local Government operations. The balance of the current or ordinary budget is given net of transfers to the equipment budget. The equipment budget in turn is composed largely of outlays for which extraordinary foreign financing can be obtained. It does not cover the same time period as the current budget. It also includes a number of current outlays.

4. The two parts of the budget, the current or ordinary budget and the equipment budget are linked to the State Treasury or "Trésor." The Trésor is the official depository for most Government and public agency accounts and through its reserve fund plays an important role in financing both the current and equipment budget. In 1968 part of the Treasury's deposit resources were made available to finance specific Government activities.

5. In reviewing Mauritania's budgetary projections, account must be taken of two apparently conflicting tendencies. On the one hand, the requests of the services for budgetary allocations consistently exceed in total the amounts actually allocated by 20 percent or more. The total volume of budgetary outlays is in effect determined by estimated total revenues. As three-fourths of revenues are derived from indirect taxes including MIFERMA, the degree of flexibility in total revenues is small and depends largely on changes in economic activity. Direct taxes are collected from a relatively small class of people and cannot expand rapidly
except for one time improvements in collection. On the other hand, Government services are consistently unable to absorb all of the reduced budgetary allocations made available. Absorptive capacity is limited by lack of qualified personnel and inadequate coordination. Since the fiscal authorities tend to underestimate revenues the result is often the appearance of large current surpluses, even when balanced current budgets are projected, while urgent and high priority expenditures are not accomplished.

The Current Budget

6. The basic budgetary process is designed to create an equilibrium between receipts and expenditures for a calendar year exercise. The first estimate made by the Ministry of Finance is of expenses for the year. Receipts are then estimated by department in the Ministry of Finance. Estimated expenses are pruned in order to match estimated receipts and legislative approval is obtained, usually in the fall.

7. In the fall of each year tax declarations are accumulated and an estimate is made of receipts by department for the year and of the deficit or surplus likely to occur in relation to the quota assigned each department. By the end of the year final budgetary revisions approved by the assembly are available. On the basis of estimated receipts and revised expenditures each department engages in a procedure which essentially allows it to allocate receipts after December 31 to the previous or the new year's budget in order to make available the amount of receipts it is supposed to provide.

8. After December 31 no expenditures are made for the budget year unless a legal obligation for this was created during the year prior to December 31. Similarly certified tax obligations are the basis for assigning payments received after December 31 to a given budget year.

9. The Trésor follows a different system from that of the individual tax departments. It closes its books for a given budget year on March 31 of each year. All payments received by March 31 for declarations of the previous budget year are assigned to that year. All such payments received after March 31 are assigned to the so-called "exercices antérieurs" in the next year's accounts. These exercices antérieurs amount to some CFAF 200 million currently. For any given year the receipts "antérieurs" are the sum of amounts not collected in previous budget years. Tax declarations and payments for the current budget year made in January, February and March of the next year are in principle counted in the current year. Thus in the first three months of a calendar year, in effect, two budgetary exercises are in operation.

10. A further freedom in transferring receipts between budget years existed until 1968 because of the taxes received annually from MIFERMA under the long-term tax scheme and the levies paid on ore extracted. These were considered outside the budget and are shown as receipts for the budget year as needed.
The Trésor

11. The Trésor is the Government's fiscal agent. It collects all revenues and makes all payments in accordance with the budget. It further allocates receipts within legal limits by budget year, as explained above, in order to present a budgetary picture as prescribed by the Ministry of Finance.

12. The Trésor is also the Government's banker. It receives deposits from most of the public organizations and maintains a Caisse de Réserve which finances the Government's current and equipment budgets. The operations of this Caisse de Réserve are shown in Table 21 for the years 1960 through 1966. During this period the Caisse received a total of CFAF 1,853 million from surpluses in the current budget, some dating back to 1958. The Caisse disbursed CFAF 1,071 million to the current budget in this period and CFAF 636 million to the equipment budget. In 1966 a surplus of CFAF 391.5 million was registered from the 1965 current budget and CFAF 287 million was disbursed to the equipment budget.

13. The Caisse de Réserve figures do not correspond with budgetary figures for the same years or even in total. It appears that what are shown as financing from the Caisse in the budget exercises are not necessarily the same as disbursements shown by the Caisse balance sheets. In the years 1960 and 1961 the source of financing of the Caisse may have included direct French Government balancing subsidies, although this cannot be determined from the Trésor which only began operations at the end of 1961. A further difficulty lies in the fact that Caisse figures are for calendar years while the current budget figures cover the periods through March 31 of each year. In general, a review of the budgetary figures and Caisse balance indicates that the Caisse balance sheet figures are also determined administratively and are also not on a cash basis.

14. The principal deposit liabilities accounts of the Trésor in recent years have been the Post Office, the Civil Service pension fund, and the communities. The total of these has risen slightly from CFAF 720 million in 1963 to CFAF 764 million at the end of 1966. In this period the Post Office account has been halved to some CFAF 360 million while the Civil Service Pension fund has risen by over CFAF 200 million and the communities funds by some CFAF 80 million.

15. The Trésor had some CFAF 680 million on deposit with others at the end of 1966. There was some CFAF 300 million deposited in current accounts with the BIAO at the end of 1966 and CFAF 396 million at the end of 1967 at 4% interest. A further CFAF 300 million was on term deposit with the BIMD at the end of 1966 and CFAF 150 million at the end of 1967. In 1966 over CFAF 700 million in current account deposits with the Central Bank was drawn down. In 1967 this deposit rose by CFAF 100 million. The Trésor does not keep the liquid reserves of the Social Security System. By the end of 1966 these amounted to CFAF 334 million, the bulk of which was on deposit with the BIMD.
The Equipment Budget

16. The equipment budget was originally intended to become the States' investment budget according to the last Four-Year Plan. However, the refusal of the main outside financing agencies, FAC and FED, to disburse their grants through this budget has considerably restricted the role of the equipment budget in development. In effect, the equipment budget has been the recipient of French budget-balancing grants through the FAC when the French subsidy to the current budget was discontinued at the request of the Mauritanian Government in 1963. The sums allocated rose from CFAF 700 million in 1964 to CFAF 1 billion in 1965 and have been declining ever since (see Table 20). In 1967 CFAF 300 million was anticipated. These grants are expected to terminate in 1968.

17. Projects which the FAC would ordinarily refuse to finance under the criteria of its regular development program in Mauritania are included in the equipment budget. If these receive FAC approval for financing through a grant to the equipment budget they are included in this budget. In addition, the Government has included miscellaneous outlays such as a subsidy for the People’s Party and certain maintenance expenditures in this budget. Because expenditures have lagged behind allocations of grants, the Equipment Budget has had a large carry-over of funds from year to year since 1963. These funds are earmarked for specific projects approved by FAC. In view of these large carry-overs, it must be presumed that the drawings of the equipment budget from the Caisse de Reserve, particularly in 1966, must have been for purposes for which FAC approval could not be obtained, but which the Government nevertheless wanted to finance.

18. The equipment budget, unlike the current budget, is never closed. Expenditures which occur during a calendar year are shown for the year in question and financing obtained is carried forward, as indicated above, when not used in the year it is made available. It is not clear where the FAC funds carried forward are deposited. They do not appear in the Trésor accounts and are presumably retained by FAC for disbursement against approved vouchers.
### Table 14: CONSOLIDATED GOVERNMENT ACCOUNTS: EXPENDITURES & SOURCE OF FINANCING

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Current Expenditures</td>
<td>3,146</td>
<td>3,736</td>
<td>4,606</td>
<td>4,331</td>
<td>4,137</td>
<td>4,164</td>
<td>5,113c/</td>
<td>5,113c/</td>
</tr>
<tr>
<td>Minus Transfer Budget Equipment</td>
<td>80</td>
<td>26</td>
<td>208</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>Balance</td>
<td>3,066</td>
<td>3,710</td>
<td>4,398</td>
<td>4,131</td>
<td>4,131</td>
<td>4,184</td>
<td>4,389</td>
<td>5,061</td>
</tr>
<tr>
<td>Expenditure Budget Equipment</td>
<td>281</td>
<td>146</td>
<td>652</td>
<td>521</td>
<td>428</td>
<td>291</td>
<td>771</td>
<td>500</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>3,347</td>
<td>3,856</td>
<td>5,050</td>
<td>4,655</td>
<td>4,565</td>
<td>4,455</td>
<td>5,113</td>
<td>5,561</td>
</tr>
<tr>
<td>Total Current Receipts</td>
<td>1,033</td>
<td>2,153</td>
<td>3,281</td>
<td>3,423</td>
<td>3,714</td>
<td>4,555</td>
<td>4,735</td>
<td>5,113</td>
</tr>
<tr>
<td>Balance to be Financed</td>
<td>-2,314</td>
<td>-1,703</td>
<td>-1,769</td>
<td>-1,432</td>
<td>-851</td>
<td>+100</td>
<td>-425</td>
<td>-44b</td>
</tr>
<tr>
<td>Means of Financing</td>
<td>-2,314</td>
<td>-1,703</td>
<td>-1,769</td>
<td>-1,432</td>
<td>-851</td>
<td>+100</td>
<td>-425</td>
<td>-44b</td>
</tr>
<tr>
<td>French Subsidy</td>
<td>1,753</td>
<td>1,521</td>
<td>1,552</td>
<td>1,200</td>
<td>1,000</td>
<td>600</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Other extrabudgetary</td>
<td>19.7a/</td>
<td>120a/</td>
<td>101.7a/</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Caisse de Réserve</td>
<td>175.3</td>
<td>187.0</td>
<td>43.0</td>
<td>553.3</td>
<td>400.0</td>
<td>10.5</td>
<td>287.0</td>
<td>28</td>
</tr>
<tr>
<td>Fonds de Concours, Fides, Communes</td>
<td>3</td>
<td>.6</td>
<td>.6</td>
<td>24.0</td>
<td>6.0</td>
<td>88.5</td>
<td>88.5</td>
<td>88.5</td>
</tr>
<tr>
<td>Loans Trésor or BCEAO</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
<td>299.1</td>
<td>872.5</td>
<td>1,175.4</td>
<td>710.7</td>
</tr>
<tr>
<td>Balance to Equipment Budget from previous year</td>
<td>2,278.3</td>
<td>2,128.6</td>
<td>2,297.3</td>
<td>1,753.3</td>
<td>1,723.1</td>
<td>1,689.0</td>
<td>1,462</td>
<td></td>
</tr>
<tr>
<td>Total Financing</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
<td>299.1</td>
<td>872.5</td>
<td>1,175.4</td>
<td>710.7</td>
</tr>
<tr>
<td>Balance from Equipment Budget to next year</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>-</td>
<td>299.1</td>
<td>872.5</td>
<td>1,175.4</td>
<td>710.7</td>
</tr>
<tr>
<td>Previous Year Current Budget Balance to Caisse de Réserve</td>
<td>342.6b/</td>
<td>120.1b/</td>
<td>426.8</td>
<td>527.9</td>
<td>21.8</td>
<td>.7</td>
<td>391.5</td>
<td>295</td>
</tr>
<tr>
<td>Caisse de Réserve Balance at End Calendar Year</td>
<td>201.3</td>
<td>80.6</td>
<td>341.1</td>
<td>869.1</td>
<td>160.9</td>
<td>62.6</td>
<td>188.1</td>
<td>516</td>
</tr>
</tbody>
</table>

**Note:** Budget figures are on a budget "exercice" basis in which books are closed on March 31 of each year. Caisse de Réserve figures relate to end of calendar year. Equipment budget figures are on a calendar year basis.

*See footnote a - Equipment Budget Table. It is likely that most of these funds are also French balancing subsidies. In 1961, 120 million was credited to the Equipment Budget from the MIFERMA tax account.*

*These balances are believed to be transfers from the 1958 and 1959 budgets respectively.*

*Figures for 1966 and 1967 are partly budget figures and partly recorded financing items.*
### Table 15: EXPENDITURES: CURRENT BUDGET

(million CFAF)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Administrative expenditures</strong></td>
<td>2,446</td>
<td>2,588</td>
<td>3,534</td>
<td>3,571</td>
<td>3,405</td>
<td>3,400</td>
<td>3,391</td>
<td>4,166</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) personnel</td>
<td>(1,479)</td>
<td>(1,400)</td>
<td>(2,085)</td>
<td>(2,338)</td>
<td>(2,357)</td>
<td>(2,399)</td>
<td>(2,500)</td>
<td>(2,955)</td>
</tr>
<tr>
<td>b) equipment</td>
<td>(967)</td>
<td>(1,188)</td>
<td>(1,449)</td>
<td>(1,233)</td>
<td>(1,048)</td>
<td>(1,001)</td>
<td>(891)</td>
<td>(1,211)</td>
</tr>
<tr>
<td><strong>II. Maintenance</strong></td>
<td>169</td>
<td>79</td>
<td>101</td>
<td>107</td>
<td>81</td>
<td>108</td>
<td>106</td>
<td>143</td>
</tr>
<tr>
<td><strong>III. Transfers and participations</strong></td>
<td>460</td>
<td>493</td>
<td>732</td>
<td>547</td>
<td>431</td>
<td>442</td>
<td>465</td>
<td>564</td>
</tr>
<tr>
<td><strong>IV. Public Debt</strong></td>
<td>71</td>
<td>576</td>
<td>239</td>
<td>106</td>
<td>220</td>
<td>214</td>
<td>397</td>
<td>240</td>
</tr>
<tr>
<td><strong>V. Unclassified</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>3,146</td>
<td>3,736</td>
<td>4,606</td>
<td>4,331</td>
<td>4,137</td>
<td>4,164</td>
<td>4,409</td>
<td>5,113</td>
</tr>
</tbody>
</table>

*a/* Includes transfers to the equipment budget.

**Source:** Ministry of Finance.
Table 16: CURRENT BUDGET EXPENDITURES  
(By administrative categories)  
(million CFAF)

<table>
<thead>
<tr>
<th>Category</th>
<th>1960</th>
<th>%</th>
<th>1963</th>
<th>%</th>
<th>1967</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans &amp; other contractual debts</td>
<td>55</td>
<td>17%</td>
<td>88</td>
<td>2%</td>
<td>210</td>
<td>42%</td>
</tr>
<tr>
<td>Pensions and allocations</td>
<td>16</td>
<td></td>
<td>18</td>
<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>National assembly</td>
<td>109</td>
<td>10.5%</td>
<td>205</td>
<td>11%</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>General Government Admin.</td>
<td>327</td>
<td>10.5%</td>
<td>599</td>
<td>14%</td>
<td>549</td>
<td>11%</td>
</tr>
<tr>
<td>Judiciary</td>
<td>67</td>
<td></td>
<td>99</td>
<td></td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Security Services</td>
<td>322</td>
<td>10%</td>
<td>990</td>
<td>23%</td>
<td>1,098</td>
<td>22%</td>
</tr>
<tr>
<td>Financial Services</td>
<td>52</td>
<td>6.7%</td>
<td>170</td>
<td>3.5%</td>
<td>205</td>
<td>4%</td>
</tr>
<tr>
<td>Economic Services</td>
<td>210</td>
<td>6.7%</td>
<td>170</td>
<td>3.9%</td>
<td>275</td>
<td>5.5%</td>
</tr>
<tr>
<td>Public works and infrastructure</td>
<td>115</td>
<td>21%</td>
<td>153</td>
<td>21%</td>
<td>1,307</td>
<td>26%</td>
</tr>
<tr>
<td>Social Service</td>
<td>659</td>
<td>21%</td>
<td>901</td>
<td>21%</td>
<td>1,307</td>
<td>26%</td>
</tr>
<tr>
<td>(education &amp; public health)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Expenditures</td>
<td>21</td>
<td></td>
<td>9</td>
<td></td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Communities and diverse</td>
<td>565</td>
<td>18%</td>
<td>297</td>
<td>6.7%</td>
<td>315</td>
<td>6.3%</td>
</tr>
<tr>
<td>Maintenance works</td>
<td>169</td>
<td>11.3%</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions &amp; Participation</td>
<td>210</td>
<td>6.7%</td>
<td>301</td>
<td>7%</td>
<td>378</td>
<td>7.5%</td>
</tr>
<tr>
<td>Loans and advances</td>
<td>11</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Reversement&quot;</td>
<td>34</td>
<td>1%</td>
<td>211</td>
<td>4.9%</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Subsidies and aid</td>
<td>124</td>
<td></td>
<td>19</td>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Transfer to budget equipment</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3,146</td>
<td></td>
<td>4,331</td>
<td></td>
<td>5,113</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Finance.
Table 17: CURRENT RECEIPTS  
(By main budget categories)  
(million CFAF)

<table>
<thead>
<tr>
<th>Budget</th>
<th>1960</th>
<th>%</th>
<th>1963</th>
<th>%</th>
<th>1967</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,033</td>
<td></td>
<td>3,423</td>
<td></td>
<td>5,113</td>
<td></td>
</tr>
<tr>
<td>Direct taxes</td>
<td>264</td>
<td>25%</td>
<td>814</td>
<td>24%</td>
<td>902</td>
<td>18%</td>
</tr>
<tr>
<td>Indirect taxes</td>
<td>656</td>
<td>66%</td>
<td>2,424</td>
<td>71%</td>
<td>3,873</td>
<td>76%</td>
</tr>
<tr>
<td>Registration taxes</td>
<td>23</td>
<td></td>
<td>69</td>
<td></td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>Diverse taxes including</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for services</td>
<td>16</td>
<td></td>
<td>42</td>
<td></td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Revenues from public domaine exploitation</td>
<td>29</td>
<td></td>
<td>39</td>
<td></td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Industrial exploitation taxes</td>
<td>11</td>
<td></td>
<td>10</td>
<td></td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>Diverse</td>
<td>5</td>
<td></td>
<td>2</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>29</td>
<td></td>
<td>23</td>
<td></td>
<td>39</td>
<td></td>
</tr>
</tbody>
</table>

of which:  
Taxes paid by MIFERMA  
(Long-term tax scheme & other) - | 538 | 16% | 1,486 | 29% |

Source: Ministry of Finance.
Table 18: CURRENT BUDGET FINANCING

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expenditures</strong></td>
<td>3,146</td>
<td>3,736</td>
<td>4,606</td>
<td>4,331</td>
<td>4,137</td>
<td>4,164</td>
<td>4,409</td>
<td>5,113</td>
<td></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>1,033</td>
<td>2,153</td>
<td>3,281</td>
<td>3,423</td>
<td>3,714</td>
<td>4,555</td>
<td>4,735</td>
<td>5,113</td>
<td></td>
</tr>
<tr>
<td><strong>Balance</strong></td>
<td>-2,113</td>
<td>-1,583</td>
<td>-1,325</td>
<td>-908</td>
<td>-423</td>
<td>+391</td>
<td>+326</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Financing:**

- **French Subsidy**: 1,783 1,821 1,852 500 - - - -
- **Caisse de Réserve Loans**: 294 187 - 430 400 11.5 - -
- **Other (FIDES, Fonds de Concours)**: 13 6.6 6 23 6.0 - -
- **Total**: 2,077.3 2,008.6 1,852.6 930 423 17.5 n.a. n.a.
- **Balance**: -35.7 +425.6 +527.6 +22 0 408\(^b/\) +326 -

\(^a/\) Figures for 1960 and 1961 are based on the appropriate exercise figures for these years. The details of financing cannot be reconciled with the Caisse de Réserve figures for these years as details of the latter cannot be found in the Trésor accounts. There is also a conflict with a Ministry of Finance document which claims the balance of 35.7 for 1960 was achieved by transferring 301 million from 1961 thus reducing the latter to a surplus of 126. This transaction cannot be reconciled with the exercise figures for these years on the basis of presently available information. Current budget expenditures for 1961 include CFAF 320 million to cover the deficit of the 1960 budget exercise.

\(^b/\) The surplus for this year is given as 413.2 in the Caisse de Réserve balance sheet.
Table 19: EQUIPMENT BUDGET

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>84</td>
<td>109</td>
<td>264</td>
<td>221</td>
<td>235</td>
<td>137</td>
<td>270</td>
<td>127</td>
<td>17</td>
</tr>
<tr>
<td>Buildings</td>
<td>129</td>
<td>26</td>
<td>388</td>
<td>167</td>
<td>158</td>
<td>100</td>
<td>430</td>
<td>206</td>
<td>124</td>
</tr>
<tr>
<td>Heavy Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participations</td>
<td>51</td>
<td></td>
<td>136</td>
<td>14</td>
<td>20</td>
<td>39</td>
<td>103c/</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>including</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>contributions,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>subsidies</td>
<td>17</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>21b/</td>
<td>38b/</td>
<td>38d/</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>281</td>
<td>146</td>
<td>652</td>
<td>524</td>
<td>428</td>
<td>291</td>
<td>771</td>
<td>500</td>
<td>286</td>
</tr>
</tbody>
</table>

a/ Budget.
b/ Maintenance.
c/ Includes 53 million for international organizations.
d/ Subsidy for the People's Party CFAF 25 million, maintenance CFAF 13 million.

Source: RIM, Ministry of Finance.
Table 20: EQUIPMENT BUDGET

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer from Ordinary Budget</td>
<td>80</td>
<td>26</td>
<td>207.8</td>
<td></td>
<td>700</td>
<td>1,000</td>
<td>600</td>
<td>-</td>
<td>20.0</td>
</tr>
<tr>
<td>French Subsidy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>52</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-Term Tax Scheme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caisse de Réserve</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Unknown</td>
<td>19.7a/</td>
<td>43</td>
<td>123.3</td>
<td>-1</td>
<td>287</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIDES Balance</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sale of Liquid Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan Trésor or BCEAO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauritanian Share Liquidation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCUMA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan SOMIMA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry-over from previous year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry-over to next year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total to be financed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[a/\] Detailed Equipment Budget figures do not exist for 1960, 1961 and 1962. The other unknown balances for 1960 and 1962 probably represent special French balancing subsidies. The same may be true of the 181.3 C. de Réserve drawing in 1960 as accounts of the Trésor in Mauritania were started as of the end of 1961.

\[b/\] Ministry of Finance sources show CFAF 291 million.

\[c/\] Figures for 1967 are taken from the budget for that year. Carry-over figures for 1967 are estimates based on the budget.

Source: Trésor RIM, Ministry of Finance.
Table 21: GOVERNMENT RESERVE FUND (CAISSE DE RÉSERVE)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance prior year</td>
<td>40</td>
<td>201.3</td>
<td>80.6</td>
<td>341.1</td>
<td>869.1</td>
<td>460.9</td>
<td>62.6</td>
<td></td>
<td>188.8</td>
</tr>
<tr>
<td>Surplus prior year budget</td>
<td>342.6a</td>
<td>120.1b</td>
<td></td>
<td>126.8</td>
<td>528</td>
<td>21.8</td>
<td>.7</td>
<td>391.5d</td>
<td>1,853.2</td>
</tr>
<tr>
<td>Total</td>
<td>382.5</td>
<td>321.4</td>
<td>507.4</td>
<td>869.1</td>
<td>890.9</td>
<td>461.1</td>
<td>475.8</td>
<td></td>
<td>483.8</td>
</tr>
<tr>
<td>Contribution to current budget</td>
<td></td>
<td>-240.8</td>
<td>-430.0</td>
<td>-400.0</td>
<td></td>
<td>1,070.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution to equipment budget</td>
<td>-181.3</td>
<td>-166.3c</td>
<td></td>
<td>+1.0</td>
<td>-287.0</td>
<td>635.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at end year</td>
<td>201.3</td>
<td>80.6</td>
<td>341.1</td>
<td>869.1</td>
<td>460.9</td>
<td>62.6</td>
<td>188.8</td>
<td></td>
<td>516.0</td>
</tr>
</tbody>
</table>

a/ Believed transferred from 1958.
b/ Believed transferred from 1959.
d/ These figures are in part derived from official sources and are subject to revision.

Source: Trésor, RIM.
APPENDIX II

Gross Domestic Product

1. The Mission estimates of gross domestic product for 1966 and 1971 should be regarded as highly indicative. The projections are made on the basis of the latest preliminary estimates for 1964 prepared by the French Ministry of Cooperation. The rate of growth in the gross domestic product is projected to be some 3.8% annually from 1966 through 1971 in constant prices. This compares with annual average rates of increase of 20% in the years prior to 1964 in current prices, and about 16% in constant prices. The principal reason for the decline in the rate of growth of output is the levelling off in output of the mining sector due to the completion of the MIFERMA works and the fact that Akjoujt is not expected to reach full output by 1971.

2. The program recommended by the Mission will principally affect the rural and fishing sectors during the next four years. They are estimated to show average annual increases of 3% and 11% respectively between 1966 and 1971. In the rural sector the main increases are projected for millet and livestock output, although it is anticipated that programs recommended for the next four years will also have substantial effects on the output of other traditional products and new products such as rice and sugar, in subsequent years. In the fishing sector average annual gains of some 11% are projected through 1971 primarily as a result of the increased utilization of excess processing capacity. However, the major gains in output from this source can be expected to take place after 1971 when complementary investments and arrangements are completed in Port-Etienne, enabling processing capacity to be used at minimum break-even levels.

3. Industrial output is projected to rise relatively sharply, but from a very low level. The output of the new abattoir and tannery at Kaedi will account for a good part of this. Finally, rates of increase have been projected in building, commerce and administration which are consistent with the general development of the economy.
### Table 22: GROSS DOMESTIC PRODUCT

(billion CFAF at constant 1964 market prices)

<table>
<thead>
<tr>
<th></th>
<th>1964</th>
<th>Annual % rate of growth</th>
<th>1966</th>
<th>Annual % rate of growth</th>
<th>1971</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>13.7</td>
<td>1.8</td>
<td>14.2</td>
<td>3.0</td>
<td>16.5</td>
</tr>
<tr>
<td>Fishing</td>
<td>1.2</td>
<td>0.0</td>
<td>1.2</td>
<td>10.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Mining</td>
<td>7.6</td>
<td>21.0</td>
<td>11.1</td>
<td>4.1</td>
<td>13.6</td>
</tr>
<tr>
<td>Industry</td>
<td>0.4</td>
<td>0.0</td>
<td>0.4</td>
<td>11.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Building, etc.</td>
<td>0.7</td>
<td>6.9</td>
<td>0.8</td>
<td>4.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.7</td>
<td>6.9</td>
<td>0.8</td>
<td>4.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Services</td>
<td>0.5</td>
<td>0.0</td>
<td>0.5</td>
<td>3.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Commerce</td>
<td>5.3</td>
<td>1.9</td>
<td>5.5</td>
<td>1.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Public Enterprises</td>
<td>1.5</td>
<td>3.3</td>
<td>1.6</td>
<td>0.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Administration Salaries</td>
<td>4.1</td>
<td>7.0</td>
<td>4.7</td>
<td>5.7</td>
<td>6.2</td>
</tr>
<tr>
<td>Total</td>
<td>35.7</td>
<td>6.9</td>
<td>40.8</td>
<td>3.8</td>
<td>49.2</td>
</tr>
</tbody>
</table>
Table 23: RURAL SECTOR GDP$^a/$

(million CFAF at constant 1964 market prices)

<table>
<thead>
<tr>
<th></th>
<th>1964</th>
<th>1966</th>
<th>1971</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millet</td>
<td>2,000</td>
<td>2,200</td>
<td>2,800</td>
</tr>
<tr>
<td>Other crops</td>
<td>1,459</td>
<td>1,500</td>
<td>1,700</td>
</tr>
<tr>
<td>Total</td>
<td>3,459</td>
<td>3,700</td>
<td>4,500</td>
</tr>
<tr>
<td><strong>2. Livestock</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle, sheep and goats</td>
<td>5,580</td>
<td>5,800</td>
<td>6,960</td>
</tr>
<tr>
<td>Other (horses, asses, camels)</td>
<td>1,083</td>
<td>1,083</td>
<td>1,083</td>
</tr>
<tr>
<td>Milk</td>
<td>3,191</td>
<td>3,241</td>
<td>3,575</td>
</tr>
<tr>
<td>Total</td>
<td>9,854</td>
<td>10,124</td>
<td>11,618</td>
</tr>
<tr>
<td><strong>3. Forest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gum and timber</td>
<td>350</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Grand Total</td>
<td>13,663</td>
<td>14,174</td>
<td>16,468</td>
</tr>
</tbody>
</table>

$^a/$ The Rural Sector GDP for 1966 and 1971 has been estimated on the basis of the data used for compiling the national accounts for 1964. As a result of this, the value of milk was underestimated by about CFAF 1,000 million, while the value of millet was overestimated by about CFAF 700 million.
International Bank for Reconstruction and Development
Washington, D.C. 20433, Telephone EX 3-6360
CABLE ADDRESS Intbafrad