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STRENGTHENING THE MINISTRY OF INDUSTRY,

(DP/SOM/72/007)

SOMALIA

Special report: Project Manager's retirement .

Prepared for the Government of Somalia
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Asad Takla, Project Manager

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Explanatory notes

References to dollars ($) are to United States dollars.

The conversion rate of the Somali shilling (SoSh) in July 1975 was: $US 1 = SoSh 6.295.

A full stop (.) is used to indicate decimals.

A comma (,) is used to distinguish thousands and millions.

n.e.s. indicates that data are not elsewhere specified.

Reference to "tons" indicates metric tons.

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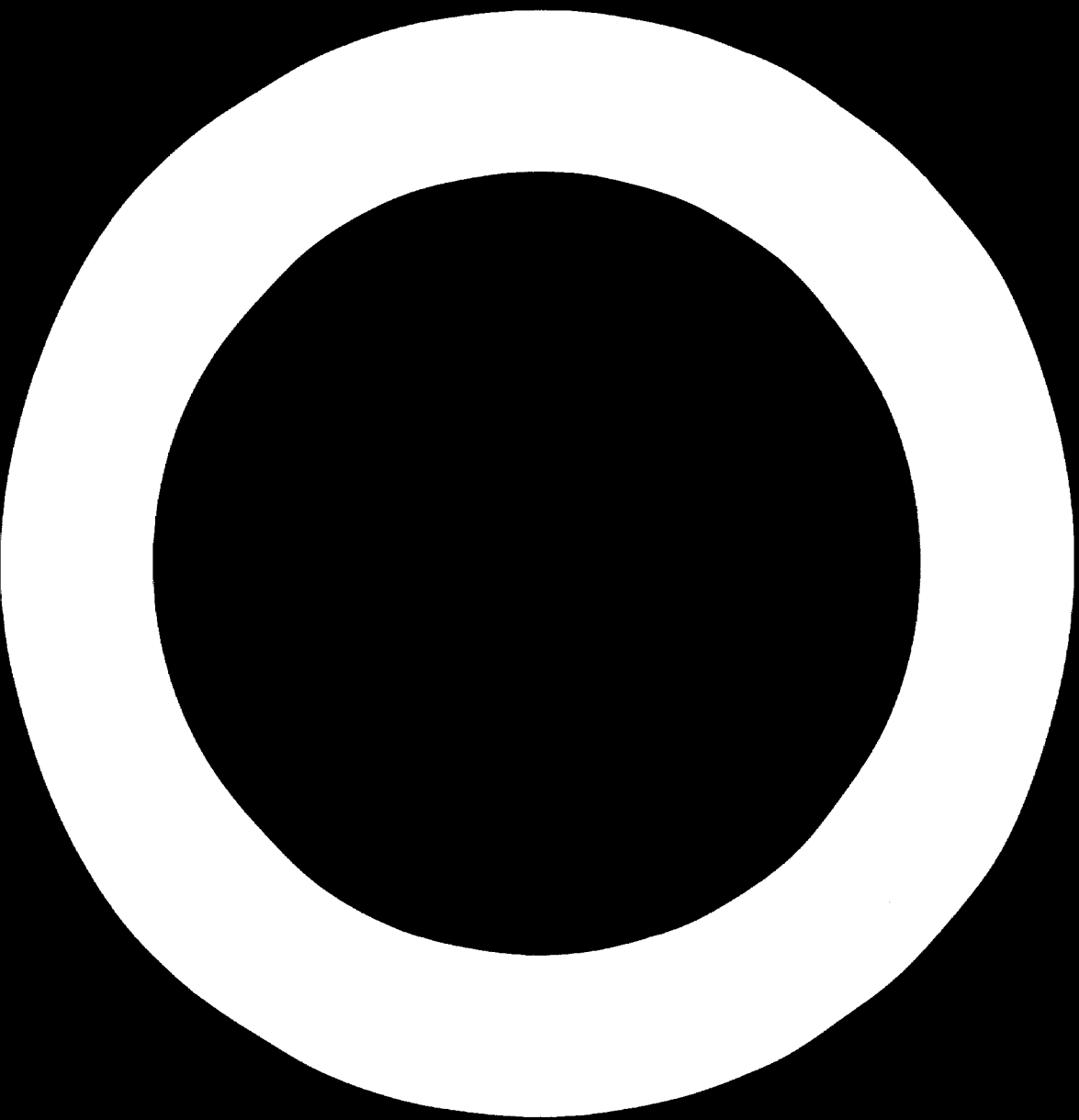


INTRODUCTION

The project "Strengthening the Ministry of Industry" (DP/SOM/72/007) was put forward initially by the Government of Somalia in May 1972. The project was approved in principle by the United Nations Development Programme (UNDP) and included in the country programme for Somalia (DP/GC/SOM/R. 1, 12 September 1973). The final revised Project Document was submitted in November 1974, approved by the United Nations Industrial Development Organization (UNIDO) as executing agency in December 1974 and by the Government of Somalia and UNDP in January 1975.

The UNDP contribution to the project amounts to $606,400. The contribution of the Government of Somalia is SoSh 772,000 (about $123,000). UNDP is to provide 156 man-months of expert assistance on an intermediate basis, to include a Project Manager for 36 months and two industrial engineers, one industrial economist and one specialist in industrial management each for a period of 30 months. These experts compose a team working under the supervision of the Project Manager. UNDP is also to provide specialized assistance of 38 man-months on a short-term basis for solving specific problems, 96 man-months of fellowships for training Somali nationals abroad, and office and other equipment.

The project, which is scheduled to last three and one half years, became operational on 13 March 1974. By August 1975, however, only the Project Manager, the industrial economist and a mechanical engineer had started work. The Project Manager had spent much of the period of his appointment in helping to finalize the Project Document.

The Project Manager was obliged to resign from his post in August 1975 for reasons of health. The present report is being written to provide a record of project implementation up to the time of his leaving the field.

A. Justification for the project

Although Somalia has achieved considerable success in its efforts to develop its industrial sector since independence, the task has been handicapped by the inadequacy of the country's institutional and organizational structure, the over-capitalization of some industrial projects, the short supply of capital, and the shortage of engineering and managerial personnel and of skilled workers.

In 1973 UNIDO dispatched a team of experts to Somalia to undertake an industrial survey. This team assessed the problems and prospects of industrial development and presented its findings in a report on the completion of its mission. A number of the projects proposed by the survey team are included in the economic development plan of Somalia for 1974-1978. The implementation and subsequent management of these projects require managerial and technological expertise. In addition, the existing industrial projects have not been running smoothly and need assistance in improving their performance.

The UNIDO experts posted in Somalia particularly stressed the need for improving the management of industrial enterprises in the public sector and for providing the Ministry of Industry with a stronger legal and institutional base. The project to strengthen the Ministry of Industry evolved largely out of the findings of the UNIDO survey team and those of other UNIDO missions sent to assist the Government of Somalia in the field of industrial development.

B. Objectives

The long-term objective of the project is to enable the Ministry of Industry to formulate and implement effectively national industrial development plans and policies.

The immediate objectives are:

(a) To assist the Ministry in reorganizing its structure and in redefining its relationship with industrial projects in the public sector and with other public-sector agencies;

(b) To strengthen the planning, programming and implementation of industrial development activities in the country;

(c) To improve the efficiency and profitability of industrial plants in the public sector, and to develop projects for their expansion and modernization;

(d) To train Somali staff by involving them fully in all project activities and through fellowships abroad.

C. Progress of work

Positive factors facilitating the assignment

The Ministry of Industry has collaborated fully with the project in the accomplishment of its assignment and has considered nearly every proposal that the project personnel have put forward.

On the basis of experience gained, a system has now been devised by which inclusion of the project in the operations of the Ministry is assured; a programme of work is discussed and developed periodically, and priorities are fixed for its accomplishment.

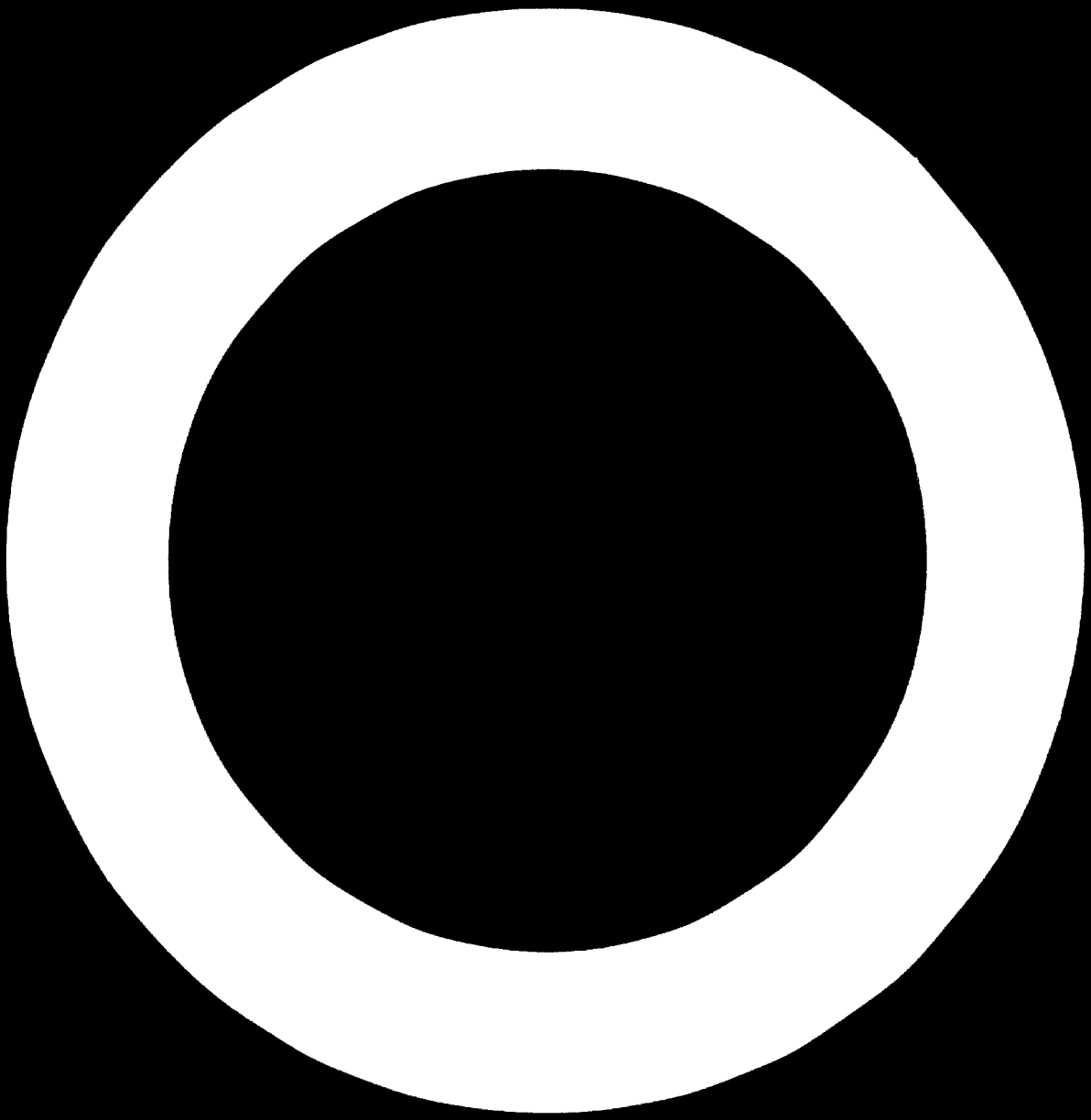
UNIDO has been prompt and helpful in all matters related to the finalization and approval of the Project Document, in solving problems that confronted the project in its initial stage, and in procuring supplies and equipment.

The co-operation and assistance of UNDP has also proved an asset and has helped the project to undertake its assignment.

Difficulties

The time consumed in the preparation of a revised version of the Project Document, its discussion at different levels and its formal approval brought about an initial delay which was followed by further loss of time in the recruitment of experts. The absence of a management specialist has incapacitated the project in achieving tangible results in the management field. The unavailability of a chemical engineer has delayed the resolution of some chemical problems and the finalization of certain feasibility studies.

One of the two experts, the mechanical engineer, is a specialist in refrigeration; however, he does not have a strong background in the other fields of his job description. He is also not sufficiently versed in the English language to fulfil the requirements of the job.



I. BACKGROUND

A. Resources

Somalia is a vast country spread over 638,000 km^2 with a relatively small population of about 3 million. The bulk of the population is nomadic. A population census has been conducted only recently; its results are still awaited. The main part of Somalia is occupied by a plateau. The highest mountain, Mount Surat, is 2,429 m. The climate is arid and the soil mostly chalky and calcareous; water courses are therefore dry except when there are heavy rains.

Livestock wealth is estimated at 5.5 million cattle, 4.5 million camels, and 15.8 million goats and sheep. About half a million ha are under cultivation. The main crops include sorghum, maize, banana, sugar-cane and sesame. Somalia has a long coastline - 2,800 km - which offers convenient landing places and natural inlets. The marine resources are enormous and their exploitation has already begun. Somalia is known for its tunafish which is canned in three fish-canning plants.

The minerals known to be available are iron-ore in the Bur Hacabana District, roughly estimated at about 300 million tons (iron content 43 per cent), uranium, tin, quartz, feldspar, silica sand, daynite, gypsum, beryl, limestone, marble, sepolite, clay, salt etc. Only tin is at present commercially exploited. Occurrences of mica, asbestos, graphite, sulphur and talc have also been noted. In the case of petroleum and some other minerals, exploitation is under way. The first cement plant, being established at Berbera, will make possible the commercial exploitation of gypsum, limestone and clay.

There are 271 industrial establishments, of which 82 employ 10 or more workers and only 21 employ 50 or more workers; of the latter, 12 are in the public sector and 9 in the private sector. Gross output of industry in value amounted to SoSh 246 million (about $13 per capita) in 1973. This included gross output in millions of SoSh: food processing 140.4, beverages 7.1, textiles 25.1, wearing apparel excepting foot-wear 2.7, leather and foot-wear 3.0, furniture and fixtures 4.6, printing and publishing 10.6, chemicals 9.3, plastic

products 5.6, structural clay products 5.2, lime 0.5, metal products 1.9, jewellery 1.0, industries n.e.s. 1.5, electric light and power 15.3, and water works and supply 8.6. Value of industry amounts to SoSh 120.49 million; hence value added by industry amounts to SoSh 125.53 million only.

B. Economy

Somalia has a socialist economy, and one of the consequences is that all large-and medium-sized industrial establishments, excepting the meat plant SOPRAL at Mogadiscio, are in the public sector. The impact of industry on the national economy is not yet important.

Not all public-sector industrial enterprises are under the control and management of the Ministry of Industry; some public-sector agencies (e.g. the Ministries of Fisheries, Mining and Health, the Somali Development Bank etc.) own and run public-sector industrial enterprises.

A separate law exists for the management of each individual enterprise in the public sector. As a result no uniform production, marketing and accounting systems are applied. The relationship of the Ministry of Industry with industrial enterprises is not well defined in the law creating this Ministry, making it difficult for it to devise a scheme for centralized services to management and production.

Although the Government has given priority to wiping out illiteracy and to training local engineers, technicians and economists, it will take some time before the situation changes. The present lack of competent personnel in the industrial field is the most difficult problem to overcome; even the Ministry of Industry cannot find adequately qualified and experienced personnel to handle its growing activity.

The market for industrial products is limited by:

(a) Number of population, which is too small to support in some fields even one large-or medium-sized industrial plant;

(b) Purchasing power, which restricts the prospects of producing locally a number of items that are at present imported;

(c) Means of communication, which are at present too scant to facilitate the distribution of locally produced industrial goods over a vast, thinly populated area at a reasonable cost;

(d) Infrastructure facilities - water, power, transport etc. - which are often not available in sufficient amount.

In addition, some public-sector industrial projects are over-capitalized, resulting in a higher cost of production. Other public-sector industrial projects operate much below capacity for a variety of reasons, which include short supply of materials (fish, meat, milk), narrowness of local market, shortage of qualified personnel, and the inadequacy of arrangements for the maintenance of equipment.

C. Industrial policy and strategy

A well-defined industrial policy together with an appropriate strategy is a prerequisite for planned industrial development. The main points of the strategy for the realization of the economic development plan of Somalia (1974-1978) are:

(a) Consolidation and maximization of the efficiency and profitability of the existing large enterprises of the public sector;

(b) Creation of new public-sector units in vital fields of the national economy and industrial development;

(c) Encouragement and development of the private sector of industry so that it may grow and contribute to growth;

(d) Encouragement of foreign capital participation in setting up new projects in the public or private sector or on a joint basis;

(e) Integration of the principles of concentration and dispersion in locating new projects;

(f) Consolidation and regrouping of small-scale industries and handicrafts into viable economic sizes or co-operatives that would serve as a springboard for more sophisticated industrial development;

(g) Continuous survey of industrial opportunities and preparation of feasibility studies for the future industrial development of the country.

This strategy is designed to promote the growth of a mixed economy. SoSh 588 million have been allocated to the public sector under the plan: for establishing 13 large- and medium-sized industrial plants, for completing two on-going projects and for expanding six other industrial projects. Work has been started on all but three projects (gypsum, paper and board, and salt). The over-all cost of public-sector projects is expected to rise by about 20 per cent owing mainly to the increased cost of imported technology and equipment.

No resources have been allocated for the private sector, but the plan lists nine small-sized plants (for paints, terrazo tiles, toilet soap, nails, socks, garments, beverages, leather and dry battery cells) to be established in this sector. Six of the nine plants have been established at a total cost of SoSh 15 million, or about 2.5% of the resources allocated for the public sector.

The sum of SoSh 15 million has been allocated for small-scale and traditional industries; the bulk of this amount is earmarked for meeting the financing requirements of the co-operative sector. The aim of the plan to improve the profitability and efficiency of existing industrial projects can be accomplished systematically only after an industrial survey that has been started is completed.

Regarding foreign investment, it would be advisable to revise the investment guide produced in 1967 so that it would take into consideration the proposals already made by the project to strengthen the Ministry of Industry.

II. CONCLUSIONS AND RECOMMENDATIONS

A. Structure

Organizational structure

In Somalia the public sector is predominant and the role played by private enterprise in industrial growth has become marginal. Industrial establishments in the public sector are owned, managed and run by the Ministry of Industry, the Ministries of Fisheries, Health and Forest, public sector agencies such as the Somali Development Bank and the Livestock Development Agency, and local bodies such as the municipalities of Mogadiscio and Hargeisa.

The existence of more than one managing organization has resulted in a varying pattern and has interfered with centralized industrial planning and control of the process of industrial development. Industrial enterprises in the private sector are owned by companies, partnership firms and individual proprietors, and by co-operatives of workers, artisans and craftsmen. Facilities to finance private enterprises are available.

Legal structure

Legislation exists to provide the legal framework for the agencies responsible for the development of industry and enterprises responsible for managing individual enterprises. It consists of:

(a) Presidential decree of 1973 enabling the Ministry of Industry to reorganize;

(b) Separate law for the management of each individual enterprise in the public sector;

(c) Co-operative law designed for promoting the establishment of industrial co-operatives of cotton workers, artisans and craftsmen;

(d) Provisions of the Italian Civil Code as adapted for Somalia that apply to the registration of all forms of companies.

There is an urgent need to replace, amend or supplement these laws to conform to the present situation.

The legal structure needed to vest adequate powers in the Ministry for promoting the development of industry is conspicuously absent.

The United Nations experts who were in Somalia before the start of the project did propose the promulgation of such a law. The draft of the proposed laws that were presented in the past to the Ministry were designed to emphasize one or the other aspect of industrial development. Policy decisions on various issues that should have preceded such legislation had not been taken. None of these drafts, therefore, could be adopted with or without modifications. A new draft should be developed that would be comprehensive enough to cover all the aspects of industrial development. It would also be necessary to base this draft on government decisions regarding issues requiring legislation.

A law exists requiring the registration of all foreign investments. This law further regulates the repatriation of capital and its profits. To accelerate the pace of foreign investments in Somalia it would appear necessary to amend this law to offer incentives and guarantees.

Institutional structure

Financing institutions. In addition to a commercial bank, the Somali Development Bank is an investment financing institution that offers investment loans for projects of both the public and private sectors.

Training institutions. At the national level a Somali Institute of Development and Management guides the development of managerial skills. In addition there are two training centres, one at Mogadiscio and the other at Hargeisa, for accountancy, typing and shorthand.

A technical institute at Mogadiscio (secondary level) is designed to train suitable technicians in mechanical and electrical engineering. Another institute at Hargeisa gives training in civil engineering. The two institutes are assisted by IBRD/UNESCO/ILO. A centre for vocational training also exists at Burao.

At the University of Mogadiscio, a Faculty of Engineering was established in 1973, offering a graduate course of eight semesters. After successful completion of four semesters, students may choose to continue study in civil or industrial engineering. Those in civil engineering may specialize in building and hydraulic engineering, and those in industrial engineering may choose mechanical or electrical engineering on successful completion of the sixth semester. At present there are 60 students in the first semester and 21 in the third semester; the language of instruction is Italian.

Research and development institutions. No institute exists in Somalia for activities in the field of research and development. The Ministry of Industry, which needs these services, has been largely dependent on foreign consulting firms. Although this situation has improved since the commencement of the project to strengthen the Ministry of Industry, there is a genuine need for a research and development institution in Somalia.

Industrial planning and programming

The Ministry of Industry is at present composed of three Departments, for Industrial Development, Public Sector Enterprises, and Small Industry. The Department of Industrial Development is responsible for industrial planning both at the macro- and micro-level. In the performance of its functions this Department is not supported by a unit responsible for industrial surveys and studies, a statistical unit or a reference library.

Industrial surveys and studies. The industrial survey of Somalia, carried out in 1972/73 by the UNIDO team, permitted the Department of Industrial Development of the Ministry to develop a programme that was incorporated into the economic development plan for 1974-1978. The Department is not equipped, however, to continue the activity initiated by the UNIDO team.

The Central Statistical Department carries out an annual survey to assess the situation related mainly to industrial production and employment, but this survey is inadequate and needs improvement. The project has therefore devised and initiated an industrial census or survey, the main purpose of which is to assess and determine:

(a) Industrial investment, by industry and by region;

(b) Installed industrial capacity, by industry and by region;

(c) Capacity utilization of each individual enterprise, by industry and by region;

(d) Capacity of each individual enterprise to generate further investment on annual basis and during a plan (five-year) period;

(e) Capacity to generate investment, by industry and by industry in each region;

(f) Requirements and employment of managerial and professional personnel as well as skilled and other workers for each individual enterprise;

(g) Ex-factory cost of major industrial products;

(h) Requirements and plans of each individual unit for balancing, modernization and expansion during the current plan period (1974-1978);

(i) Problems of each individual enterprise related to technology, management and external factors;

(j) Prospects of each individual unit for expanding its production by promoting the establishment and use of subsidiaries.

Survey and evaluation are a continuous process which has to be undertaken by the Ministry of Industry to support and strengthen its activity in the field of industrial planning and programming. It will be necessary therefore to create a unit on a permanent basis for survey and statistics.

Reference material for industrial planning. A fairly large number of feasibility studies and industrial reports have been produced in the past by United Nations experts and international firms of industrial consultancy for the Government of Somalia. These reports contain data and information useful as reference material for industrial planning. The project to strengthen the Ministry of Industry has collected the available reports, has organized these according to sector and has produced an abstract. This abstract will require updating periodically.

Data on industrial potential. Information and data collected and released by the Central Statistical Department is not adequate for the purpose of industrial planning. To supplement and augment this data, the project has made an endeavour to collect industrial potential data from the Ministries and agencies concerned and has presented the same in an organized form. This data will also need updating periodically.

Review of industrial situation. It is necessary to evaluate the industrial situation periodically, to identify the action needed to accelerate the pace of development, and to identify new projects in each sector for a detailed study. To fulfil this need the project has studied the different industrial sectors in order to produce a review of the industrial situation in Somalia. This review presents valuable data on industries, industrial projects, industrial problems, and prospects for different industries. It will be necessary to update it periodically.

Reference library. There is no reference library in the Ministry of Industry for the use of its officials engaged in industrial planning. The project has initiated the establishment of a library. It is proposed that by the end of the project the Ministry seek an annual budgetary allocation for the growth and development of this library.

Investigation of new projects. The Department of Industrial Development also does not have facilities for investigating new projects. Prospects for the establishment of the following projects have so far been investigated and interim reports have been presented to the Ministry on a banana-freeze drying plant; a cement plant for one million tons capacity and a glass factory. In addition, a dozen new proposals for the establishment of industrial projects are under study.

Conclusions

To enable the Ministry to perform its crucial function in the development of the country, it is necessary to create and establish the infrastructure needed for promoting and strengthening activity in the field of industrial planning. The project to strengthen the Ministry of Industry has concluded that an institution capable of providing technical and economic appraisal, engineering consultancy, research and information facilities to the industrial planning unit of the Ministry is an essential prerequisite. A scheme for the

establishment of an industrial research centre has therefore been formulated, and if approved and implemented, will gradually take over the functions at present assigned to this project.

Organizational structure for project execution

The Department of Industrial Development in the Ministry is responsible for project formulation and project execution. However, this Department is not staffed and equipped for undertaking engineering activity, and the facilities required for the construction of factory premises, creation of infrastructure facilities, and erection of industrial plants etc. have not been completed. In short, though responsible for project execution, the Department is not equipped for this purpose.

Building construction. There is a public-sector agency which undertakes the construction of factory premises at cost plus 15 per cent to cover the cost of transport and 10 per cent to meet the contingent expenditure. This agency is also not equipped and staffed to execute certain infrastructure facilities and works related to utilities such as the electrification of premises, and the installation of water and steam distribution systems.

Contracting and consulting. The Department of Industrial Development is largely dependent on imported technical services for contracting and consulting. Almost all projects in the public sector are being expanded or modernized. In addition, the current plan (1974-1978) presents a rather ambitious programme of industrial development. Thus, work connected with project execution has multiplied as, correspondingly, has dependence on foreign technical services.

Negotiations and draft agreements. In view of the non-existence of facilities for negotiations and preparing draft agreements in Somalia, the Department of Industrial Development must deal with foreign consulting and contracting firms extensively. This work requires a detailed technical, commerical and legal examination of the offers received from foreign firms in order to conclude contracts and agreements of a varied nature relating to:

Feasibility studies

Execution of industrial projects

Technical collaboration for project execution

Import of industrial machinery with or without technical collaboration

Imports of materials and spares

Import of capital for investment in the indutrial projects under execution

In the absence of adequate arrangements in this Department for the evaluation of proposals of a commercial, technical and legal nature received from foreign investors, financiers, suppliers of machinery, contractors and consulting firms, the Department is handicapped and lacks the capacity to properly safeguard the interests of the country.

Participation of the project to strengthen the Ministry of Industry. The project has so far participated in the implementation of the following:

New projects

Lower Jubba complex (sugar)
Edible oil project
Frozen carcass meat plant at Mogadiscio
Frozen carcass meat plant at Hargeisa
Pickling plant for skins at Hargeisa
Tannery at Kismayo
Asbestos sheet plant at Berbera

Expansion of existing projects

Meat factory, Kismayo
Milk factory, Mogadiscio
Fish-canning plant, Las-Khoreh

Conclusion

The Department of Industrial Development is not adequately staffed for implementing industrial projects directly or indirectly through foreign consulting and contracting firms. The Department cannot undertake operational jobs, and therefore it may be advantageous to establish a public-sector agency for project execution.

Efficiency and profitability of existing industrial plants. The Department of Public Sector Enterprises in the Ministry is also inadequately staffed. Pending the recruitment of its management specialist, the project has carried out a preliminary assessment of the situation. The areas that appear to require immediate improvement in the efficiency and profitability of existing industrial plants are production planning and programming and industrial accountancy.

This conclusion is reflected in the programme for the training of Somalis. However, in the case of industrial accountancy, a programme has been developed and includes the following:

(a) Developing and introducing a unified system of accounting for factories;

(b) Organizing and establishing in the Ministry an internal audit unit with responsibility for the implementation of the accounting system chosen;

(c) Organizing a seminar of factory accountants for developing training courses in cost and financial accountancy;

(d) Conducting courses thus tailored for junior accountants posted in the factories.

This programme has been developed for implementation in collaboration with the Somali Institute of Development, Administration and Management. It has been discussed with the general managers of industrial plants in the public sector and further action is in process.

An exercise in cost accounting was also conducted recently to work out the cost of pickling skins at Burao and Mogadiscio.

Training

Manpower development is a paramount need in Somalia. The industrial survey already launched is likely to yield data relating to the personnel requirements of existing factories. Such data might form a basis for planning a training programme to be conceived both for upgrading the existing skills and creating new ones.

At present, factories train their workers. It might be advantageous to conceive and introduce an apprenticeship training scheme to formalize and improve the present training activity. Such a scheme could be conceived in collaboration with the IBRD/UNESCO/ILO project in the Ministry of Education.

In some regions of the country workers equipped with a variety of basic skills are not available; there are no carpenters, mechanics, plumbers, electricians and not even masons. The only basic skills available are in the fields of shoe-making, tailoring and rudimentary metal-working. This situation prompted the project personnel to make a proposal for the establishment of a community workshop on an experimental basis in one of the regions, and a handicraft development centre in another. It is understood that the Hargeisa Technical Institute and the training centre at Burao are designed for producing basic skills. However, this is a field in which multiplication of activity is urgently needed.

General conclusion

The present organizational structure of the Ministry of Industry is not fully adequate and not the best suited to its assignment. The Ministry is at

present operating without legal support for its activities in the realm of industrial development, for institutional support, and for activities relating to industrial planning and programming. A legal and institutional structure has, therefore, to be developed and added to the Ministry.

B. Reorganization of the Ministry of Industry

Existing situation

The Ministry was reorganized in 1973 into three Departments.

The Department of Public Sector Enterprises is designed to develop an organizational structure for each individual factory and to provide consulting services on all matters of technology, investment and management. In addition this Department was to contain a unit for undertaking an annual internal audit of each individual factory.

The Department of Industrial Development is responsible mainly for macro-planning, programming and policy formulation. It was created to undertake functions of micro-planning related to project formulation and implementation as well.

The Department of Small Industry is responsible primarily for developing public-sector assistance programmes and is also assigned functions related to co-operative registration and handicraft development.

The shape and form of the Ministry has undergone a change as envisaged, but the process of reorganization has not gone beyond this point and not deep enough to facilitate the growth of services for which the scheme of reorganization was conceived.

To implement the scheme of reorganization, 36 new posts have been created. These include 24 A category posts, of which only 5 have been filled. The scheme provides for 10 economists two of whom have been hired, and eight engineers, none of whom are available. The Ministry, though reorganized, is incapable of accomplishing its full assignment. Hence, for lack of adequate staff, the Ministry has not been able to devise and use rules, regulations, systems and procedures required to control the management of public-sector enterprises and the costing of their products. No internal audit unit has been created and no law has been promulgated authorizing the Ministry to undertake its elementary functions of registering factories, new investments, changes in capacity etc.

The scheme of reorganization suffers from certain inherent weaknesses. It does not take account of the fact that each individual enterprise in the public sector has a quantum of autonomy different from that enjoyed by the others. This situation has emerged because of a separate law existing for the management of each individual enterprise, making it difficult for the Ministry to act upon any scheme for rendering centralized services in the fields of management and production.

The scheme also does not take into consideration that all projects in the public sector are not under the control of the Ministry. There are other ministries and agencies of the Government (e.g. the Ministry of Fisheries, the Livestock Development Agency, the Municipality of Mogadiscio), which manage and run industrial projects. This situation militates against all concepts of centralized planning and management.

The 1973 scheme for reorganization does not distinguish between promotional and developmental, commercial and non-commercial, and creative and operational functions. These are mixed and are assigned together to the Department concerned; as a consequence, the emphasis on creative as well as promotional functions has been lost, and the capacity of the Ministry to act in the areas of industrial planning and project management has been impaired.

To conclude, the resources offered both for the implementation of the scheme of reorganization and the accomplishment of its objectives have been inadequate. The scheme in its present form is not likely to achieve in the best way the objectives for which it was designed.

New proposal for the reorganization of the Ministry

The experts assigned to the project have deliberated on this situation and have developed a new proposal for the reorganization of the Ministry. This proposal will be presented to the Ministry for discussion in a seminar, which will be held in two stages. It has been proposed that participation in the first stage of the seminar be limited to the officials of the Ministry. In its second stage the seminar may be opened to the representatives of other concerned agencies, particularly to define the relationship of the Ministry with those agencies.

The new scheme is based on a division of functions into promotional and developmental and commercial.

The business of industrial development can be better organized if commercial functions are separated from those that are non-commercial, e.g. promotional and regulatory. On this basis, it has been proposed that the Ministry could undertake directly promotional and regulatory functions but use autonomous agencies for the performance of its commercial functions. Thus, the Ministry could give up its direct involvement in project execution and industrial management and develop into an organ of policy making, industrial planning and development.

The Ministry would be composed of two departments, one to be called the "Department for Planning" and the other to be called the "Department for Industrial Development". In addition, there would be a unit to provide administrative services to the Ministry.

Department of Industrial Development. The Department of Industrial Development would perform all those functions at present assigned to the Department of Small Industry and, in addition, would regulate such matters as registration of factories, new investments, changes in capacity, employment, product mix, patents and trade marks. This Department would also be responsible for introducing standardization of weights and measures and quality control.

Department of Industrial Planning. The Department of Industrial Planning would be supported by an "Industrial Research Institute", a scheme for the establishment of which forms a part of this report. This Department would operate as the secretariat for an industrial advisory council to be established to advise the Ministry on the formulation and implementation of industrial and technological policy. The Department would invite, receive and process proposals, schemes and plans for new industrial investment from factories and agencies in the public sector, as well as from foreign investors and private enterprise. The Department would undertake a preliminary appraisal of each proposal and if the proposal should fit into its scheme, the Department would send it to the Industrial Research Institute for a feasibility study. On the basis of this study all proposals for new investments would be finalized for inclusion in the annual development programme to be prepared for financing.

cy for Project Execution. As soon as a project is approved and funds for its implementation are allocated, it would be turned over to a new public-sector agency to be created for the execution of industrial projects and called "Agency for Project Exeoution".

This Agency would be a statutory organization with a board of directors, on which the Ministries of Industry and Finance, the Somali Development Bank and the Directorate General of Planning and Co-ordination would be represented. The representative of the Ministry of Industry would either be the Secretary of State or Director General, and he would be the ex-officio Chairman. There would, however, be one full-time director designated as Managing Director or Chief Executive. This Agency would develop and use specialized skills and know-how needed for project execution to ensure minimum dependence on foreign consulting and contracting firms. After a project had been executed, it would be turned over to another new public-sector agency to be called "Agency for Industrial Management".

Agency for Industrial Management. The proposed Agency for Industrial Management would take over all the existing industrial projects being managed at present by this or by other Ministries or public-sector agencies. Each individual enterprise is at present working on the basis of its own law. The Agency for Industrial Management would be a statutory body and its law would supercede regulations in existence for each individual factory. A new legal framework for each factory might be provided.

This Agency would have its board of directors, on which the Ministries of Industry and Finance as well as representatives of concerned public-sector agencies such as the Somali Development Bank would be represented. The Secretary of State for Industry or the Director General would be the ex-officio Chairman. The Agency would have a full-time Managing Director.

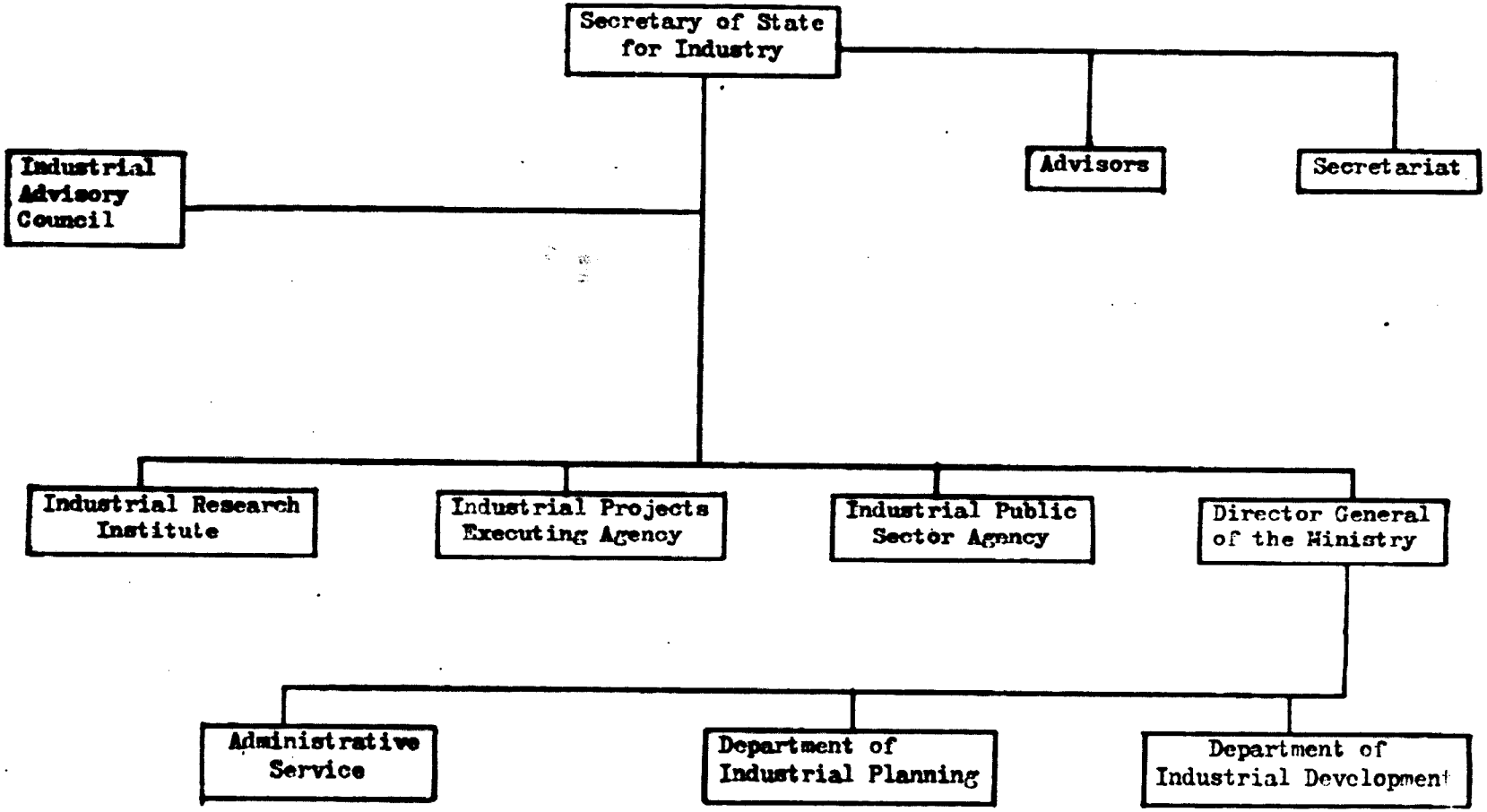
An organizational chart of the Ministry of Industry based on the above proposal has been prepared and is given in figure I.

C. Industrial Research Institute

Justification

In order to choose and adapt imported technology, to ensure quality control of imported and local industrial products, to introduce norms for standardization, to develop local technologies and to make feasibility studies, Somalia badly needs an institution which could undertake industrial research and development activities. Such activities could include:

"Systematic surveys, assessment, development and utilization of local natural resources and raw materials, including the adaptation of these raw materials to unconventional uses;



Alternative (2): The Industrial Research Institute, Industrial Projects Executing Agency and Industrial Public Sector Agency may be attached to the Secretary of State for Industry through the Director General.

Figure I. Organizational chart for the Ministry of Industry (alternative (1))

"Improvement or adaptation of production techniques and technical development of processes for local conditions, including at the pilot-plant level;

"Provision of various services for industry, such as testing, quality control, selection of machinery, specifications and general technical assistance;

"Assistance in standardization activities, either by assuming direct responsibility or by actively participating in the work of a separate standards institute;

"Industrial economic studies, such as market surveys, comparison of the economics of different processes, investigations connected with pre-investment studies, surveys and statistics of various industrial sectors and, generally, all matters concerned with the establishment of new industries;

"Management and productivity studies, including, when indicated, operations research with the aim of strengthening production and increasing it, improving organization, rationalization of management and similar matters."1/

The activities listed above are broad, ranging from simple industrial studies to highly advanced research, from the mere modification of a machine to large-scale technological innovation, and from the adaptation of imported technology to the modernization of indigenous technology. Such activities encompass varied disciplines.

Local (indigenous) technology means production techniques and equipment developed over the centuries in a given country. Examples include: techniques for the preservation of certain food products; weaving; use of particular raw materials; and tools. The modernization of these technologies may solve certain industrial problems for the country concerned.

As it is impossible in the medium term to undertake all these activities in a developing country such as Somalia, where scientific and technological potential and research funds are necessarily very limited, the country must, while maintaining an ambitious technological policy, remain within the limits of its means.

For these reasons, it is proposed that an Industrial Research Institute should be established.

1/ Industrialization of Developing Countries: Problems and Prospects. Industrial Research, Monograph No. 10, (United Nations publication, Sales No. 69.II.B.39, vol. 10), p. 55.

Organisation

This Institute may be attached directly to the Secretary of State for Industry or to the Director General according to the scheme adopted for the reorganization of the Ministry of Industry. The alternatives are reflected in the organization chart shown in figure I.

This Institute might include in the first stage the following sections, which could be expanded periodically according to the needs and in the light of the experience gained:

(a) Engineering section with a unit, each for industrial economics and standardization;

(b) Industrial information;

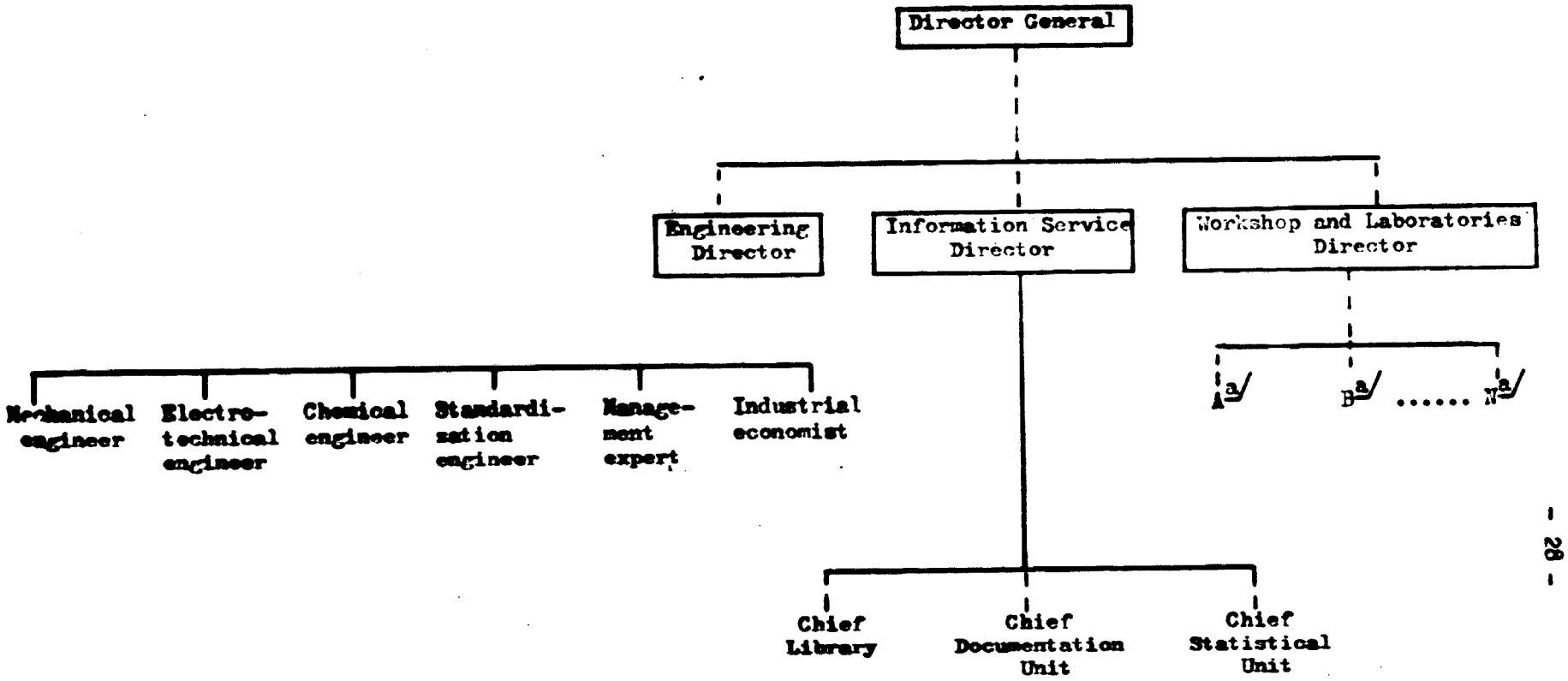
(c) Workshop and laboratories which may in the beginning have an electro-mechanical laboratory and workshop and a laboratory each for chemical and food technology.
Laboratories could be subsequently added to serve other industries.

The project to strengthen the Ministry of Industry may be able to conceive ways and means of giving a formal shape to the suggested Institute. It is proposed that by September 1976 the Institute come into being as a legal entity on the basis of an agreement to be concluded between the Government of Somalia, UNDP and UNIDO. The provisional internal chart shown in figure II could represent the first stage.

Engineering

Engineering is a broad field; its activities range from the simple engineering services normally offered by a consultant's office to integrated services given by a large engineering company. A country has to tailor its engineering institutions to meet its requirements in the best manner according to its degree of development and its plans for socio-economic growth. In view of the conditions in Somalia, it is proposed that a multi-disciplinary department be established as part of the Institute for Industrial Research to undertake activities such as:

Feasibility studies
Studies of plant infrastructure
Studies of industrial buildings
Selection of equipment and technical process



a/ A, B, ... N represent technologists.

Figure II. Provisional internal chart of proposed Industrial Research Institute

Design and/or modification of industrial equipment
Equipment control during the production phase
Equipment acceptance
In-process work supervision
Work acceptance
Productivity

A structure of this kind could be of assistance to the Government in the formulation of its policy in the area of technology and, especially, in the selection of its industrial projects, their execution, the hiring of technical personnel engaged to work within the country and the drawing up of licensing contracts. At a later stage, it could participate in the design of industrial projects and in developing equipment and tools. Special attention will have to be directed towards the development of a local capability in the area of engineering design. "Engineering design is a creative activity concerned with the origination or modification of an industrial article, including the accompanying research, development and testing, resulting in specifications, working drawings of plans, pilot models and prototypes, and in data and instructions to facilitate manufacture. In the end, the design must be acceptable to the consumer and may need to be modified from time to time to satisfy current market demands." 2/

Since there may not be sufficient national personnel, applications may be made for international assistance and/or the recruitment of foreign experts. The existence of a structure of this type in the country is no less than indispensible, since in this way the Government would have at its disposal a working tool which would always be available, often less costly, backed by a better knowledge of the country's labour conditions and needs, and better able to defend the national interest. The establishment of an office of this kind would not rule out the possibility of subcontracting those portions of projects which the department could not physically or economically handle itself. The office must involve itself as much as possible in the work assigned to foreign engineering companies.

The availability of such a structure should not preclude the existence in the public sector of small groups of highly specialized consultancy bureaus, which could play a very specific role.

2/ The Development of Engineering Design Capabilities in Developing Countries, (United Nations publication, Sales No. 72.II.B.2), p. 1, 1972.

Industrial information

The term "industrial information" is used in this paper to mean specific items of scientific, technical and economic knowledge that can be communicated and applied in order to facilitate and accelerate the process of economic growth.

> "Developing countries need information on all aspects of industry - technology, production, marketing methods, finance, business and personnel management - in order to set up new plants and to run existing plants more efficiently. Most of the information required to meet this need is available in industrialized or in other developing countries, but a system must be devised for its transfer to potential users. A primary requirement of a transfer system is a national body that can both marshal the information available in the country, complementing it with intake from other countries, and transmit it to the local user." 3/

In Somalia there is no institution offering an industrial information service for the growth and development of industry. It is proposed that as a part of the Industrial Research Institute a department for industrial information be established. The main purpose of this department would be to:

(a) Define the information to be collected;

(b) Identify the sources of information inside and outside of the country;

(c) Identify the circuit of collection;

(d) Collect such data as required;

(e) Process and document the data collected;

(f) Identify media for storage and make arrangements for the storage of data;

(g) Identify receivers;

(h) Identify media and circuits of diffusion;

(i) Set up a documentation and reference unit.

To achieve the purpose outlined above it would be advantageous to pool local sources of information. A national network should be set up and linked to regional and international networks as a demander and supplier of information.

3/ Industrialization of Developing Countries: Problems and Prospects. Industrial Information, Monograph No. 13, (United Nations publication, Sales No. 69.II.B.39, vol. 13), p. 17.

Workshops and laboratories

An electro-mechanical workshop and laboratory might include the following equipment:

1 lathe machine about 2,000 mm length x 200 mm height and 6 h.p, equipped for rectification works

1 lathe machine about 600 mm length x 100 mm height

1 universal milling machine, table surface about 1,300 x 300 mm

1 shaping machine course about 400 mm

1 radial drilling machine, diameter about 45 mm

1 drilling machine, diameter about 30 mm

1 drilling machine, diameter about 15 mm

1 sharpener for tools

1 trimming machine

1 hand-lever shears, cutting length about 1,000 mm for sheets R = 40 kg/mm^2 and 2 mm thickness

1 hand three-roller calendar, calendaring width about 1,000 mm and 2 mm thickness

1 hand-type universal bending machine, working length about 1,000 mm, 2 mm thickness

Equipment for electrical and oxyacetylene welding

Usual portable and manual equipment for a small mechanical workshop

Usual equipment for testing and measuring in an electro-technical laboratory

In the first stage of implementation of the Institute it may be sufficient to collaborate with the UNDP/UNIDO Foundry and Mechanical Workshop project and to use the facilities of this project, which include most of the machines listed above. Nevertheless, the Institute could supply the items that are unavailable. This solution could save time and money for the two projects.

Close collaboration should be maintained between the Institute for Industrial Research, the Institute of Building Materials, the Mogadiscio Technical Institute and the new Faculty of Engineering at the University.

On the basis of data being obtained from the survey already launched by the Ministry of Industry, which comprise, inter alia, the identification of industrial equipment and industrial problems, a list of equipment could be prepared for chemical and food technology laboratories.

The UNDP/UNIDO Foundry and Mechanical Workshop project disposes of a large building which includes 37 rooms, accomodation for a metallurgical laboratory, two cafeterias, a reception hall etc., and is unoccupied. The project to strengthen the Ministry of Industry is about to transfer to this building. Since close collaboration has to be maintained between these two projects and since the project to strengthen the Ministry of Industry is proposed as the core of the future Institute for Industrial Research, it is suggested that this Institute be located in the building. Accommodation created for one of the two cafeterias could be used for establishing laboratories for chemical and food technology. When the need occurs, an extension of the building is always possible.

Personnel requirments

The requirements of technical assistance for the Institute have been roughly estimated. Since the Institute would have all the functions at present assigned to the project to strengthen the Ministry of Industry, it is proposed that this project be transformed to man the expert advisory service that would be needed by the engineering section of the Institute. The Project Manager might be adviser to the Director General. It would be possible for these experts also to organize and establish laboratories in their respective fields. As regards industrial information, it is proposed that the services of a short-term consultant be obtained to organize and establish this service. In addition, one United Nations expert in standardization and one United Nations electro-technical engineer would be needed.

It is difficult to estimate accurately the requirements of Somali personnel for this Institute. It is proposed that, to begin with, the counterparts of the experts working in the project to strengthen the Ministry of Industry should assume responsibility for managing and running the engineering section. It would be necessary to supplement the existing Somali personnel by providing the services of:

(a) A technologist to head the laboratories and workshops;

(b) An information specialist to head the industrial information service (a one-year fellowship has already been awarded to a Somali official for training in this field);

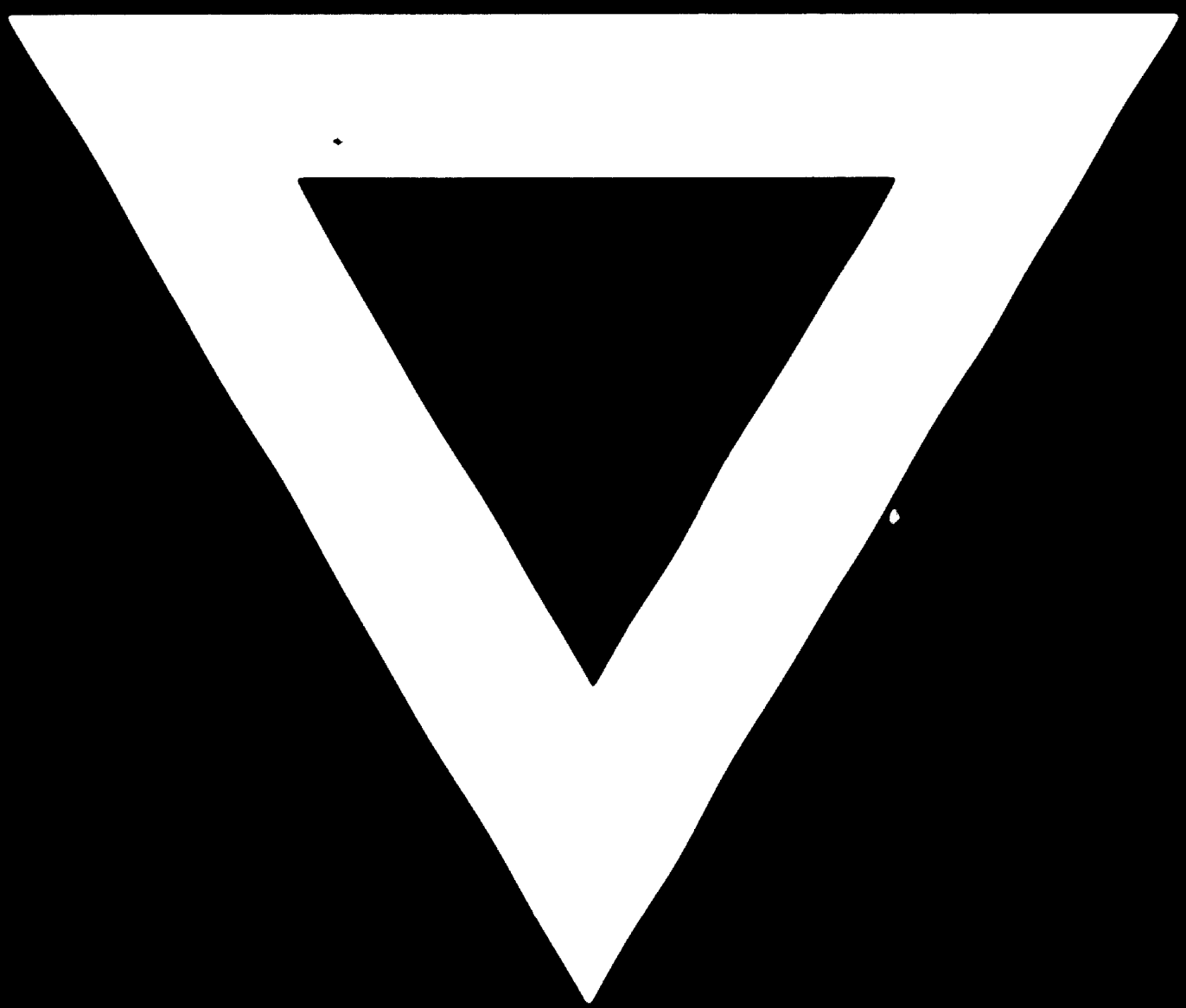
(c) Supporting staff which may include two engineers, four investigators, four technicians, one librarian, two statistioians, one official trained in documentation, and an adequate number of typists, drivers etc.

On the completion of the industrial survey underway, the position may be reviewed in the light of its results and the necessary adjustments made in the requirements of Somali and United Nations personnel now estimated for this Institute.

D. Recommendations

It is highly recommended that the Ministry of Industry should be reorganized, taking into consideration the proposals of the project to strengthen the Ministry:

1. To create:
   (a) An industrial public-sector agency;
   (b) An industrial projects executing agency,
   (c) An industrial research institute;
2. To put under the supervision of the Ministry of Industry all industrial projects and plants. This arrangement should not exclude a close collaboration with other agencies concerned with industrial development;
3. To accentuate the role of the project in the negotiation and preparation of contracts for the implementation of new industrial projects;
4. To provide adequate support to the project according to the terms of the Project Document in regard to counterparts, supporting personnel and accommodations;
5. To increase the number of students in the Faculty of Engineering, prolong the duration of study up to five years and revise the curricula taking into consideration the necessity for greater specialization. A close collaboration between this Faculty and the Mogadiscio Technical Institute (project UNDP/UNESCO/ILO) would be beneficial.



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