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INDUSTRIAL REPAIR AND MAINTENANCE,

SM/UGA/74/034

UGANDA .

15 FEB 1978

Mission report

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

Based on the work of Carlo Ferrari, mechanical engineer

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ABSTRACT

From 15 June to 12 October 1977 an expert (a mechanical engineer) from the United Nations Industrial Development Organization (UNIDO) visited Uganda to ascertain the situation there as regards industrial repair and maintenance. The mission "Industrial Repair and Maintenance" (SM/UGA/74/034) had two objectives, both of short term: first, to determine the needs of the country as regards industrial repair and maintenance, and second, on the basis of the findings, to prepare a project document designed to provide the country with the assistance needed to solve the problems that had been identified. Both of these objectives were attained.

The expert also visited automotive workshop of the Ministry of Animal Resources and prepared a plan for the improvement of this installation, which can be considered as a part of the proposed project to upgrade the repair and maintenance services to the industrial park of the country. An account of this visit is annexed to the present report.

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INTRODUCTION

Project background

The mission stemmed from the concern of the Government about the rapid decline in the industrial production of Uganda that followed the massive emigration of persons of certain ethnic groups who had worked in this sector. The index of industrial production had registered a rapid contraction that in some cases amounted to a vertical drop. The reasons for this situation were well known to the Government, which described it in the recently published document Action Programme. This publication analysed in detail the various factors that were affecting the economy adversely and specified the means to be used to re-attain the previous levels of production through a plan for economic recovery. Among the goals indicated in this document were the rehabilitation and maintenance of the industrial park of the country. This was a matter of special importance and was the origin of the mission reported here, the object of which was to determine the needs of the country in this area and to prepare a project document to provide the country with the assistance needed to solve the problems that had been identified.

Summary outline of official arrangements

The collaboration of UNIDO in this effort was initially requested in the form of a Special Industrial Services (SIS) project. Because of financial stringencies, the United Nations Development Programme (UNDP) authorized the funding of the mission "Industrial Repair and Maintenance" (SM/UGA/74/034) by SM funds (Special Measures for Least Developed Countries). The expert, a mechanical engineer, arrived on 16 June 1977, and the mission ended on 12 October 1977. The implementing agency of the Government of Uganda was the Ministry of Industry and Power, which assigned a local counterpart to the expert.

Objectives of the mission

The terms of reference of the mission reported here were the following:

To survey the needs and capacities for the manufacture and maintenance of various kinds of equipment, to draw conclusions and make recommendations, and to suggest improvements in existing maintenance schemes

To elaborate a large-scale project which would meet the most pressing needs of the country for maintenance and repair services, stimulate the local manufacture of replacement parts and organize training in maintenance

To provide, upon request, on-the-spot advice on the maintenance and repair of machinery and equipment

To train local counterpart personnel

All of these objectives were attained.

I. ACTIVITIES

As his primary activity, the expert visited many industrial plants in various industrial sectors. Among them were the factories of the Uganda Development Corporation, the National Textiles Board, the Uganda Steel Corporation, the Cement Corporation, and UGMA, the workshop subsidiary of the Uganda Sugar Factory. It should be noted that not all of the organizations visited and thus not all of the nationalized industries were under the jurisdiction of the Ministry of Industry and Power. He also made a visit of inspection to the automotive repair and maintenance workshop of the Ministry of Animal Resources (see the annex to the present report).

All of the visits were conducted in the following manner:

Opening meeting with the management staff of the factory

Visit of inspection to the industrial plant in question

Whenever possible, visit to and inspection of repair and maintenance facilities

Closing meeting with management to discuss the findings

During the opening meetings, after introductions had been made, the general manager of the plant gave a short exposition of its production problems. At the close, the expert compiled detailed notes on repair and maintenance problems.

II. FINDINGS AND RECOMMENDATIONS

Findings

Financing

It is noteworthy that none of the industries visited had made any budgetary provision for the maintenance of plant and equipment; this was one of the reasons why no preventive maintenance could be carried out. This lack of a budgetary provision reflects the fact that the need for preventive maintenance is not generally understood in Uganda. Generally speaking, Ugandans use equipment, even when it is not operating properly, until it breaks down completely, which compounds the maintenance problem.

The workforce

In some units, the technical level of the younger workers is adequate, but their lack of experience constitutes a serious obstacle to their practical use of it. It must also be considered that the low salary levels and the lack of distinction between good and poor workers does not encourage efficiency.

Spare parts and repairs

It is very difficult to obtain spare parts and to perform repairs. There are three principal reasons for this:

The difficulty of obtaining foreign currency from the Government for the purchase of spare parts

The age of the plants and their equipment

The lack of co-operation between governmental bodies, which prevents many repairs from being performed locally

If the existing facilities were used rationally, many repairs could be done locally. This would mean that about 80% of the repair problems could be solved with available national resources. Such a policy would limit imports to items that could not be produced locally, such as special steels, bearings and electronic components. Such a policy would permit significant savings of foreign exchange.

Important maintenance operations

UGMA. This workshop, which is a subsidiary of the Uganda Sugar Factory, is located 40 km from Kampala. It merits special consideration for several reasons:

It is adequately equipped to perform many repair and maintenance services to the industry of the country

It has a foundry for both ferrous and non-ferrous metals

Although its equipment is generally out of date, it can be used to make spare parts in view of the fact that the production of single items or even small runs of spare parts does not require machinery for which the piece-per-hour production rate is an important factor.

On the other hand, it should be borne in mind that a workshop such as UGMA, which does several different kinds of job, requires not only a well-trained workforce but also capable foremen and directors. It must be said that these latter are lacking at UGMA. Also, the present dependence of UGMA on the Uganda Sugar Factory, which was experiencing considerable financial difficulties, reduced considerably its potential operative capacity. Also it should be noted that during the last two years, some of UGMA's better-trained workers had left it to take better-paid employment elsewhere.

The Central Workshop. This workshop, which operated in Kampala's automotive sector, comes under the jurisdiction of the Ministry of Works and Public Buildings. Its equipment, which is modern and light, should be integrated with that of UGMA.

Comment

At the time of the mission, not all of the corporations that comprise the nationalized industries were controlled by the Ministry of Industry and Power. To avoid possible problems during the implementation of any new project in the field of maintenance and repair that would envisage assistance from agencies of the United Nations, it would be advisable to ensure that such a project would operate through a governmental agency of an appropriately high level, as determined by the Ministry of Industry and Power, to embrace all of Uganda's industrial corporations.

Recommendations

The Government of Uganda should request that the United Nations provide the technical assistance required to attain the following goals:

To establish a National Repair and Maintenance Centre to satisfy the requirements of the country's industrial park as regards repairs and maintenance

To utilize the existing facilities of UGMA and the Central Workshop as the basis of such a centre

To separate UGMA from the Uganda Sugar Factory

To provide UGMA with the operating capital needed to develop its work

To establish strict technical rules regarding work performance. For example, before any spare part is produced, an exact drawing of it should be made, and the labour and machine-time inputs should be calculated

To draw up technical and financial rules for carrying out preventive maintenance in industry according to the technical requirements of each plant

To establish rules for the importation of spare parts so as to encourage their production locally

To establish a training programme for the workforce of UGMA and, more importantly, to assist the directors in the performance of their duties

To develop a system of incentives that would increase production and encourage capable workers to remain rather than to leave for more attractive jobs

To give the project personnel, at least initially, the necessary authority to act quickly in the repair of industrial plants that require urgent help

To create, within the proposed National Repair and Maintenance Centre, a task force to be used in industrial plants when needed

All of these proposals are incorporated in the project document which was prepared during the mission and discussed with the personnel of the Ministry of Industry and Power and the Ministry of Planning and Economic Development. However, the expert must again stress his firm opinion that, considering the low level of management in technical fields, as well as the need to begin the repair and maintenance of equipment as quickly as possible, the leading personnel of the proposed project must be granted authority to act, as well as to advise. This point alone could determine the success or failure of a mission based on the project document that has been submitted.

Annex

AUTOMOTIVE WORKSHOP OF THE MINISTRY OF ANIMAL RESOURCES

During the course of his mission, the Ministry of Animal Resources asked the expert to inspect its workshop for the repair and maintenance of its fleet of vehicles and to investigate the possibility of obtaining assistance for it.

Findings

The fleet was found to consist of more than 500 vehicles and other types of equipment: light and heavy lorries, automobiles and a few tractors. The workshop, which is six miles from Kampala, is only a shed, its parking lot is an unmaintained muddy field and its facilities are negligible. The technical level of the workforce is very low; the expert observed some truly incompetent efforts to perform repairs. A previous mission from the Food and Agriculture Organization of the United Nations had recommended that the Ministry of Animal Resources obtain the technical assistance of two experts for this workshop.

Recommendations

In view of the substandard conditions that he found there, the expert recommends that this workshop be used only for very simple repair and maintenance services. Equipment requiring major repairs should be sent to the Central Workshop at Kampala, which is under the jurisdiction of the Ministry of Works and Public Building, and which was well equipped for work of this kind.

The Ministry of Animal Resources should set up a budget for the maintenance of its fleet. Part of this budget would have to be in foreign exchange to pay for the importation of spare parts for repairs that are unobtainable locally.

In future, the Ministry would do well to consider the purchase of vehicles of makes that are well supported by their home factories. For example, Fiat or Mercedes vehicles are rarely immobilized for lack of spare parts, since special arrangements have been made with the Government, permitting the importation of spare parts.

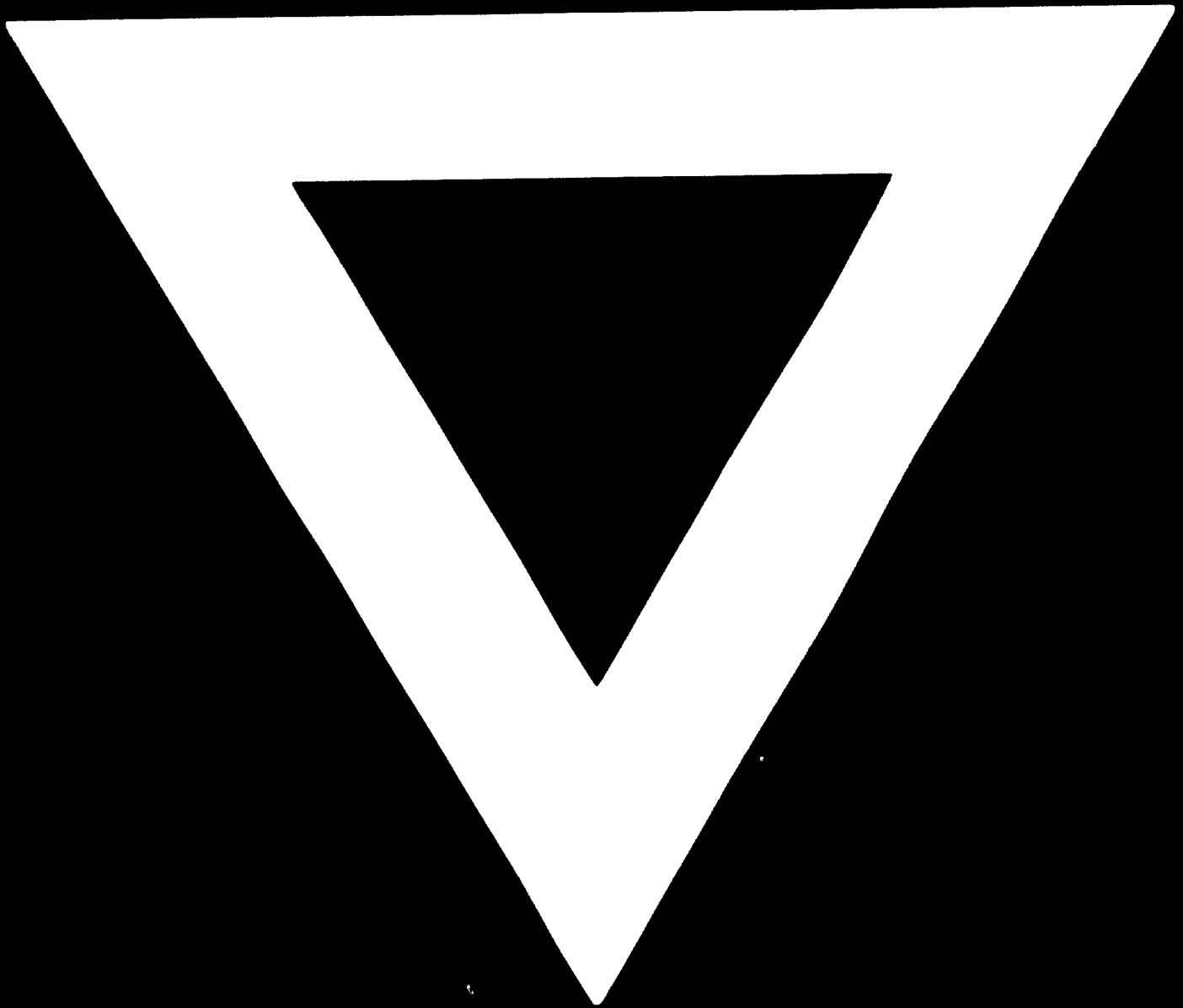
The United Nations should be asked for assistance in preparing a project document for technical assistance and training in this field, which should be

reflected in the provision, for two years each, of two UNIDO experts, a mechanical engineer and an economist, both of whom should be completely familiar with management and with the purchase and distribution of spare parts.

Assistance from the Government should also be envisaged. A project to deal with this problem could be considered as an aspect of the proposed project for the repair and maintenance services to the industrial park of the country.



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