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INDUSTRIAL TECHNOLOGY DEVELOPMENT
IN THE REPUBLIC OF UGANDA

Technical report: Industrial technology*

Prepared for the Government of the Republic of Uganda
by the United Nations Industrial Development Organization

Based on the work of Rudolf Eder,
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* This document has not been edited.

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Rudolf Eder

Table of contents

Explanatory notes	3
Currency	3
Abbreviations	3
Abstract	4
Chapter 1: Introduction	5
1. Background information	5
2. Duties and achievements	5
Chapter 2: Findings	6
1. The present situation	6
2. Outlook	7
Chapter 3: Conclusions	8
Chapter 4: Recommendations	8
List of institutions, companies and persons contacted in Uganda	

Explanatory notes

Currency

Official exchange rate (20th of November 1991):
1 US\$ = 886 Ush

Forex bureau rate (26th of November 1991):
1 US\$ = 1090 Ush

List of abbreviations

BOU	Bank of Uganda
DOT	Department of Technology
MPED	Ministry of Planning and Economic Development
MOF	Ministry of Finance
MOIT	Ministry of Industry and Technology
MTAC	Management Training and Advisory Centre
UCB	Uganda Commercial Bank
UDB	Uganda Development Bank
UDC	Uganda Development Corporation
UMA	Uganda Manufacturers' Association
UNBS	Uganda National Bureau of Standards
UNDP	United Nations Development Programme
USSIA	Uganda Small-Scale Industries Association

Abstract

The main objective of the mission of the "Industrial Technology Expert" was to revise and redraft the project document "Industrial Technology Development" in line with the findings and with aim to design a project document that will realistically reflect the needs of the industrial sector.

During the short mission (19th of November to 7th of December 1991) the author had discussions with Government officials, industry sector representatives, managers of small-, medium- and large-scale industries, representatives of some associations and agencies and the Resident Representative, Deputy Resident Representative as well as other UNDP officials. The expert could visit some small- and large-scale enterprises in Kampala and Jinja.

Based on the findings and the results of discussions a project was conceived to promote technical progress, to accelerate the absorption of foreign technology and to encourage development of indigenous technology combined with direct support to rehabilitate industries.

CHAPTER 1: Introduction

1. Background information:

In July 1987 it was decided that a multi-functional project to provide technical assistance for

- * rehabilitation,
- * management and
- * development of industries

should be included in the then forthcoming UNDP Country Programme for 1988-1991.

The new project was expected to continue providing direct technical assistance to individual establishments and was conceived as UMBRELLA PROJECT providing direct operational technical assistance in:

- * pre-rehabilitation advice;
- * operational assistance during rehabilitation;
- * management development;
- * technical skills up-grading;
- * technology acquisition, adaptation, application and development;
- * small enterprises promotion.

The purpose of the present project is to advise the Government on actions to be taken to strengthen the country's capacity in developing indigenous technology and in transfer, adaptation and application of foreign technology, in order to enhance self-sustaining economic development.

2. Duties and achievements:

The expert was attached to the Department of Technology in the Ministry of Industry and Technology. Mr. K. Kapasi-Kakama, Chief Scientific Officer, arranged all the meetings and visits. Mr. Koen Goekint, UNDP Programme Officer, did everything to facilitate the mission and to supply information.

2.1. Visits to small-scale and large scale industrial enterprises, Government Departments and non-governmental organizations:

In order to get acquainted with the present situation and needs as many companies and institutions as possible were visited in Kampala and up country.

2.2. Discussions with officials of the Ministry of Industry and Technology:

A draft of the project document and findings resulting from the visits to companies as well as Government Policy in the field of industrial development and technology transfer were discussed with the Ministry in a meeting presided by Mr. S. Kagoda, Commissioner for Technology, and attended by 15 officers of the

Ministry of Industry and other ministries.

The following idea was formulated: When preparing the budget listing UNDP inputs, incentive payments for special achievements and outstanding performance for local counterparts should be included.

2.3. Assessment of the country's capacities to develop indigenous technologies and adapt imported ones:

Various discussions took place at Makerere University and with non-governmental organizations.

Comments made by Dr. Higenyi, Makerere University on errors frequently made during rehabilitation:

- * deliberately excluding national experts,
- * using nationals who cannot absorb the technology,
- * using qualified personnel and yet refusing to motivate them,
- * using national experts who selfishly keep knowledge to themselves;

Dr. Higenyi suggested that the staff of the Faculty of Technology should be involved in the present project.

2.4. Conception of a new project document on INDUSTRIAL TECHNOLOGY DEVELOPMENT:

Based on the findings of the present mission a new project document was written.

Comments made by participants of the meeting at the end of the mission were taken into account.

Chapter 2: Findings

1. The present situation:

1.1. The present situation in small scale industries:

Most small scale industries have a very low capital endowment. This refers to buildings as well as to machinery, tools, etc. There is very little capital embodied technical progress. Still, it would be an easy way of technology transfer.

Taking into account the extremely low capital-output-ratio, one can imagine that addition of little capital would have a considerable impact on output, productivity and quality.

Wages are extremely low.

The main problems are: shortage of working capital, shortage of capital in general, lack of raw materials, lack of spare parts, lack of transport equipment and lack of efficient support.

Given these constraints, it is preferable to promote small-scale industries, since small-scale industries are more adaptable in times of crises, shortages and other threats.

1.2. The present situation in medium and large scale industries:

The most important feature of this sector is the low capacity

utilization mainly due to

- * equipment breakdowns,
- * lack of maintenance,
- * lack of spare parts,
- * coordination problems and management failures.

Capacity utilization in most industries amounts to less than 50 per cent, in some industries to less than 20 per cent and even 5 per cent. In some cases marketing problems may also be responsible for the weak turnover of products resulting in low capacity utilization. In other cases, poor quality of products may be the reason for low sales and consequently low capacity utilization.

Wages are modest in most industries and cannot be the reason for high cost. Low salaries and wages, however, have resulted in a lack of motivation and have forced many employees into taking up additional jobs. As a result job performance has suffered.

1.3. The present situation with regard to technology and technical progress:

There is little home-made technical progress. Some of the reasons are:

- * lack of motivation and incentives,
- * lack of required conditions,
- * lack of experience and access to know-how.

Nevertheless, there are good opportunities to achieve technical progress. Aware of the situation, the Government has set up a number of institutions dealing with science and technology. However, most of these institutions are not efficient. At present, the Department of Technology consists of one officer only.

2. Outlook:

The majority of African countries have experienced sluggish development. Many reasons are cited to explain the results. Very often the development of the world economy is said to be the major reason for failure. In some fields, however, failures are purely home-made. Technical progress does not directly depend on the development of the world economy. It depends mainly on the behavior of the population. Technical progress may very well be achieved in a period of recession and it is one of the best means to overcome it. One can even go further and contend that it is the only way to realize lasting progress.

Higher income owing to an increase in coffee prices are welcome, but represent just a windfall profit, which may vanish any time. An increase in productivity or the production of new goods of higher quality, however, contribute to an effective development of the economy.

Macroeconomic instability, structural rigidity, debt-servicing costs and others are only a pretext to excuse bad results. We have learnt from 30 years of experience that foreign capital inflows alone will not solve the problem. Only an efficient combination with other factors of production will allow repayment of capital. And the efficient combination of factors of production requires the necessary transfer of technology. Most companies suffer from bad absorption of technology only.

High debt-servicing costs are the outcome of failures in transfer of technology. To a large extent transfer of technology is the key to development.

Chapter 3: Conclusions

3.1. As major problems of the Ugandan economy may be considered:

- * low levels of capacity utilization,
- * inefficiencies in many fields,
- * widening of the import-export-gap,
- * low level of income per capita.

3.2. On the one hand there is shortage of capital, on the other hand invested capital lies idle in companies working at 20 per cent utilization of capacity.

3.3. Installed machinery and equipment will get obsolete and rust, if it is not used and maintained properly.

3.4. High amounts of capital will be wasted, if the country fails to make use of the available capital stock.

Chapter 4: Recommendations

4.1. Rehabilitation of existing companies has better chances of success than investment in new projects. In order to realize efficient allocation of resources, it is recommended that rehabilitation is intensified.

4.2. Technology transfer is the key to rehabilitation. A combined programme of rehabilitation and technology transfer is strongly recommended.

List of institutions, companies and persons contacted in Uganda:

Bansal, P. C., Director of Works, Lugazi Sugar Works
Baryaraha, Azarias, Executive Director, Uganda Manufacturers
Association and Managing Director of Kampala Bottlers Ltd.
Byaruhanga, Joseph K., Managing Director of Target Engineers &
Associates.
Goekint, Koen, Programme Officer, UNDP, Kampala
Gumisiriza, Mary E., General Manager of Uganda Leather & Tanning
Industries Ltd., Jinja
Higenyi, Dr. J.K.D., Dean of Technology/Makerere University
Kagoda, S., Commissioner for Technology
Kapasi-Kakama, K., Chief Scientific Officer/Technology/MIT
Kawooya, James, Assistant Project Manager, Uganda Small Scale
Industries Association
Kigonya, Christopher Mugula, Managing Director of Kigonya & Sons,
Carpenters, Plot 27, Block 12, Mengo-Kisenyi, Kampala
Lugendo, J. Ssalongo, Managing Director, Foundry & Lathework,
Spares, Ndeba Masaka Road
Mambule, J., Senior Industrial Officer
Wandira-Kazibwe, S., Deputy Minister
Wasswa, Joseph K., Chairman/MD of Uganda Small Scale Industries
Association