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Project DP/ETH/83/012

(R) ETHIOPIA: ASSISTANCE TO HANDICRAFT AND

SMALL-SCALE INDUSTRY DEVELOPMENT AGENCY.

Terminal Report

prepared for the Government of Ethiopia

by

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This Report has not been edited, commented upon or cleared by the United Nations Industrial Development Organisation which does not, therefore, necessarily share the views presented.

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Explanatory notes:

Abbreviations used are:

- HASIDA : Handicraft and Small-Scale Industry Development Agency
- EHC ; Ethiopian Handicraft Centre
- M.I.C. : Maresha Industrial Co-operative
- NPC : National Project Co-ordinator
- NPO : National Project Officer

Terminal Report for UNDP/UNIDO Project DP/ETH/83/012:  
Assistance to Handicraft and Small-Scale Industry Development  
Agency - Phase II.

1 INTRODUCTION

1.1 Background

The Handicraft and Small-Scale Industry Development Agency (HASIDA) was established in 1977 with the status of an autonomous Government Agency under the Ministry of Industry, to promote, support and coordinate the development of Handicraft and Small-Scale Industry sector in Ethiopia.

In 1978, HASIDA has been also given the responsibility to organize co-operatives.

HASIDA through its Branch Offices throughout the Country fulfills the following tasks:

- to promote and increase co-operativization of handicraft and cottage industries to render them more productive both qualitatively and quantitatively;
- to foster and up-grade existing handicraft and industrial co-operatives by means of financial, technical and managerial support;
- to promote and expand training facilities for artisans;
- to strengthen its organization reinforcing staff and facilities.

## 1.2 Project objectives

The Project objectives related to the Engineering Department are the followings:

To establish, for training and demonstration purposes, two pilot industrial co-operatives for the production of essential goods and services.

To design and draw up manufacturing specifications for all products to be produced by pilot industrial co-operatives.

To up-grade the technical, economical, managerial supply and marketing services provided through the engineering and technical service centre to artisans, co-operatives and small-scale industries.

To develop prototypes of improved tools and implements for use by artisans and co-operatives.

To train its engineers and technicians in the design and production of tools and implements as well as other relevant technical skills.

## 2 ACTIVITIES

This Report, covering the period from August 1984 to June 1986, is concerned with the writer's activities as Associate Expert in Mechanical Engineering at the HASIDA Engineering Department.

The writer started his activity under Project DP/ETH/83/012 on August 1984.

This Report summarises all the activities the writer has been involved in, but concentrates on the final period of his assignments January - June 1986.

More detailed informations on activities carried out in the earlier periods can be found in the preceding reports.

- 1) Preliminary Report      October 1984
- 2) Progress Report      October - December 1984
- 3) Progress Report      January - June 1985
- 4) Progress Report      July - December 1985.

### 2.1 Maresha Industrial Co-operative

Maresha Industrial Co-operative has been assisted in the initial stages of its production activity.

Revision of the original layout has been done.

Designs were made for different types of minor equipment to be produced locally.

Oil furnaces and other machines have been fitted.

Labour cost at M.I.C. has been computed.

Selection of products was made on the basis of market research by HASIDA Co-operative Department.

A list of imported raw materials, including detailed specifications and quantities, for the above products has been prepared.

Lately a proposal for Maresha production organization and control has been prepared. This includes the new production organization structure, technical personnel's tasks, roles and sectors and will serve as a basis for the effective change from artisanal to industrial production of M.I.C.

## 2.2 Sheet Metal Industrial Co-operative

Preliminary study and selection of products for the Sheet Metal Industrial Co-operative have been made.

This brought to identify some 18 products as from annex I.

Machines, tools and equipments for the manufacturing of selected products have been identified and detailed technical specifications have been given.

Required floor space for every production unit, offices and stores has been computed and preliminary layouts for machines and equipments have been prepared.

## 2.3 Products design

Manufacturing process, material and manpower requirements and production cost estimation have been prepared for the following products:

- a) Kerosene stove
- b) Charcoal stove
- c) Rake (improvement and revision)
- d) Axe (improvement and revision)
- e) Door bolt.

For some products trial design and manufacture of special tools, jigs and fixtures and trial manufacture of product itself have been carried out.

#### 2.4 Extension of EHC facilities

Because of the additional equipments, the EHC Metal Workshop will be extended.

A new building is now under construction and will comprise stores, laboratory, technical offices and the new Engineering Department.

Floor space has been assigned for each sector:

- Raw material store
- Material preparation
- Machining
- Sheet metal working
- Forging
- Electroplating
- Welding
- Electric workshop
- Tool store
- Testing laboratory
- Finished good store

Design of compressed air system (piping, compressors, accessories) for the Metal Workshop and the Foundry to be located in the EHC compound has been made.

In order to minimize waste of time and materials and to improve work organization, job cards and monthly job progress board have been prepared and given on trial to the Foreman.



Labour cost estimation for the Metal Workshop has been computed.

Assistance has been rendered towards the completion of the study of a wool processing line for carpet-making.

## 2.5 Assistance to Co-operatives and Small-Scale Industries

Assistance and technical evaluation for machinery replacement has been provided to Small-Scale Industries.

In the EHC Wood workshop three wood-working machines were lying idle due to some missing parts.

After discussion with the NPC it has been decided to recondition the machines which can be afterward forwarded to a Carpenters' Co-operative in Arba Minch, Gamo Gofa region.

The machines have been inspected and overhauled.

Missing parts have been produced. The thicknessing machine and the band saw are now in working conditions and the sanding machine will be soon ready.

On request of the Government Project Profiles for the following Small-Scale Industries have been prepared:

- 1) Regeneration of used motor oil
- 2) Fuel briquettes
- 3) Wick stoves
- 4) Wood screws
- 5) Bolts, screws and nuts
- 6) Silencers and fuel tanks
- 7) Hurricane lanterns
- 8) Loom shuttles and pirns

Project Profiles include : Product specifications, Plant capacity, Manufacturing process, Raw material requirement (specifications and quantities), Manpower requirement, Machinery and equipment required and their specifications.

The Evaluation Team leaving for India to visit the aforesaid and other industries has been briefed.

### 3 FINDINGS

Engineering Department staff has been increased since August 1984 of 2 new Engineers, 1 Architect, 3 Draftmen and 2 Secretaries and counts at present 14 employees.

Work capacity has really improved, but staff still lack of experience and sometimes motivation necessary to face efficiently the large variety of problems.

The present technical and logistical organization of the Engineering Department is not always up to the tasks the Department is required to perform.

If the Civil Engineering Sector is self-sufficient, on the other hand the indigenization of the Mechanical Eng. Sector cannot be considered complete.

Floor space is inadequate to receive all Department staff performing different jobs and with different exigences.

The Senior Technical adviser left on April 1985 because of illness and has not yet been replaced.

Production at M.I.C. has been hindered by break down of machines, mainly presses, and other problems raised with dies.

Lack of suitable raw materials also contributed to hinder the production that has still to reach the foreseen level.

Notwithstanding the improvements reached since the start up, products quality is often inadequate to compete with the local market and, anyhow, under the possibility of M.I.C.

Transformation from handicraft to industrial production is impaired by lack of effective organization and control.

The EHC Metal Workshop has increased its personnel and is now able to cope with the tasks assigned, manufacturing tools, jigs and spares for Maresha and other Co-operatives and Small-Scale Industries.

Relations with HASIDA management, local and international staff have always been marked by collaboration and can be regarded as positive and fruitful.

#### 4 RECCOMANDATIONS

Steps should be taken to reorganize the Engineering Department and to provide it with more floor space and facilities.

A Senior Technical Adviser who will co-operate with the NPO and the Department Head should be recruited as soon as possible. He shall coordinate and direct the capabilities existing in the Engineering Department and assist Engineers and Technicians in their professional grow.

Team work must be fostered in order to allow Staff to share experiences and to get the proper approach to the problems they cope with.

Advisory and supportive services to Small-Scale Industry and entrepreneurs should be expanded and improved.

Documents and technical information should be collected, concerning the most likely technologies and industries for the Country.

Special attention should be given in organizing production at M.I.C.

Roles in production sector should be clearly defined.

An experienced Engineer is needed to be employed as Foreman.

The writer's last day of official duty is June 27, 1986.

ANNEX I

LIST OF SELECTED PRODUCTS FOR SHEET METAL INDUSTRIAL CO-OPERATIVE

- 1) Water bucket
- 2) Watering can
- 3) Measuring jug
- 4) Chicken feeder
- 5) Chicken feeder (single)
- 6) Milk can
- 7) Wood stove
- 8) Hollow dish
- 9) Cooking pan
- 10) Wood stove stand
- 11) Scoop
- 12) Funnel
- 13) Roof gutter
- 14) Paper tray
- 15) Bowl pan
- 16) Charcoal stove (pyramid type)
- 17) Charcoal stove (squared type)
- 18) Charcoal stove (cylindrical type)