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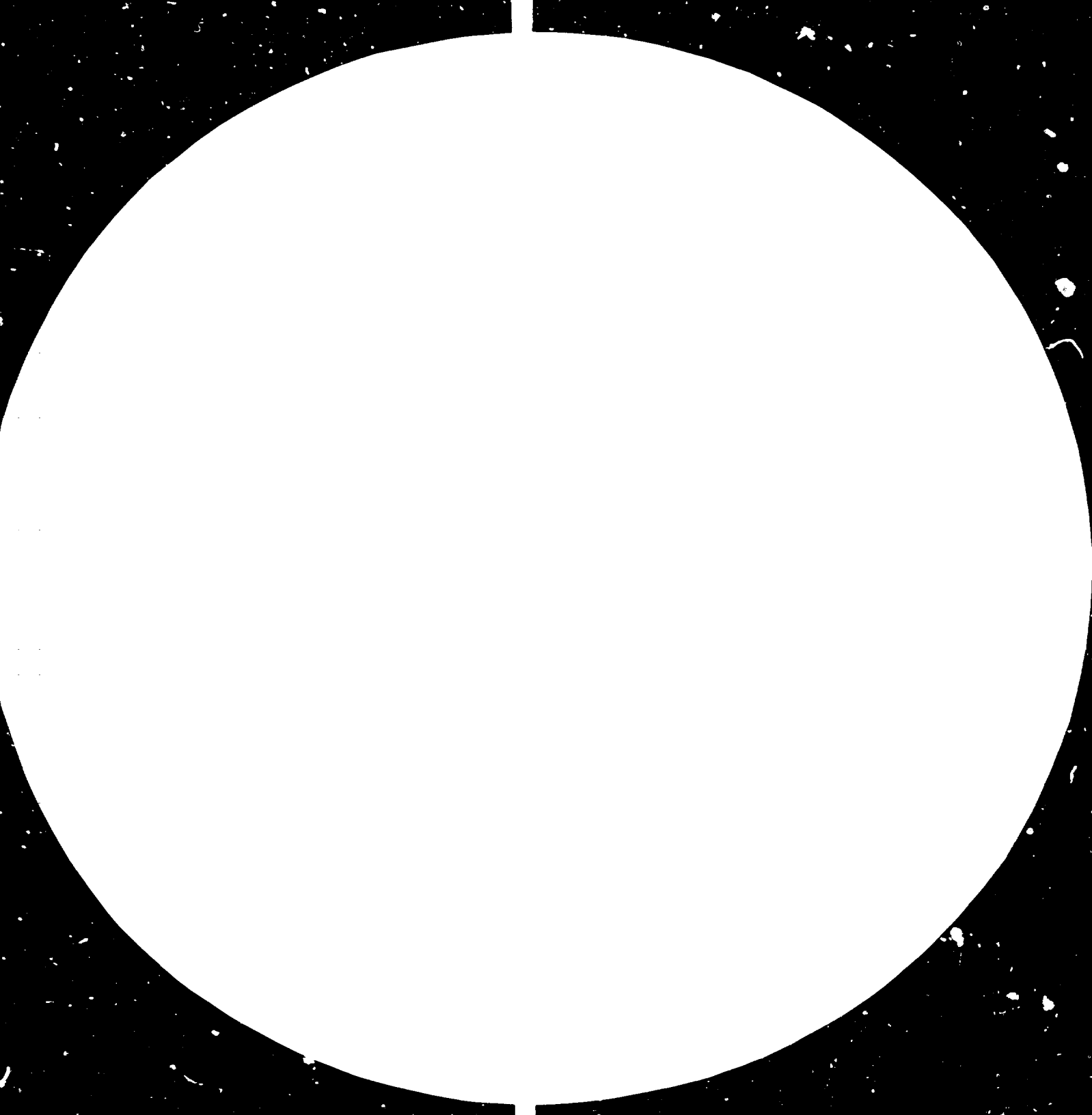
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Distr.
RESTRICTED
ID/WG.330/23
7 October 1980

United Nations Industrial Development Organization

ENGLISH
ORIGINAL: FRENCH

Meeting on Exchange of Experience and
Co-operation among Developing Countries
in the Development of Agricultural
Machinery Industry

Beijing (China), 20-27 October 1980

OVER-ALL NATIONAL STUDY ON THE AGRICULTURAL MACHINERY
INDUSTRY IN THE DEMOCRATIC REPUBLIC OF MADAGASCAR*

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* The opinions expressed in this document are those of the authors and do not necessarily reflect those of the UNIDO Secretariat. This document has been translated from an unedited original.

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I. REQUIREMENTS AND DEMAND FOR AGRICULTURAL IMPLEMENTS AND MACHINERY

We have no official studies or technical reports available on requirements for agricultural machinery over the next five years. However, our own estimate is given below:

CATEGORY I

Implements: handtools, animal-drawn equipment and machinery:

Simple handtools:	1980 requirements
1. Machetes	200,000 units
2. Forged metal spades	200,000 units
3. Shovels	50,000 units
4. Pickaxes	20,000 units
5. Hatchets	20,000 units
6. Hammers	15,000 units
7. Handsaws	10,000 units
8. Timber saws	5,000 units

with an increase of 10 per cent per annum.

CATEGORY II

Intermediate machinery: Ploughs, harrows, hoeing machines and sprayers:

	1980 requirements
1. Animal-drawn ploughs	15,000
2. Hoeing machines	5,000
3. Sprayers	5,000
4. Carts	3,000
5. Harrows	1,000

CATEGORY III

Mechanized equipment: standard tractors, two-wheeled tractors and pumps:

1. Tractors	250 units
2. Two-wheeled tractors	100 units
3. Irrigation pumps	100 units

CATEGORY IV

Specialized equipment:

- | | |
|-----------------------|----------|
| 1. Large tractors | 10 units |
| 2. Combine harvesters | 10 units |

II. DEMAND AND UTILIZATION

The requirements listed above refer only to the current market. They are relatively low when compared to the size of the population (9 million) because of:

Distribution difficulties; and

Low purchasing power.

The quality of the implements can be said to be excellent, in so far as they have already been in use for a considerable time.

III. MANUFACTURE AND IMPORTS

(1) CATEGORY I

Tools and simple implements will be manufactured in the short term, in five years' time.

Imports do not meet annual needs.

Expansion of production would not be possible simply on the basis of local resources, since raw materials still have to be imported.

International assistance is desirable with a view to a solution of problems on the upstream and downstream side.

Product design and manufacturing techniques pose problems. The country is capable of developing and adapting such products locally but would nevertheless need co-operation. It has an agency for determining equipment to be used; that agency would request assistance in defining requirements in terms of both quality and quantity.

It is also necessary to promote the transfer of licences and foreign investment within a context that has still to be defined.

(2) CATEGORY II

INTERMEDIATE EQUIPMENT

Four types of animal-drawn ploughs are manufactured: three are general-purpose ploughs varying from 27 kg to 35 kg, and the fourth is a reversible turnwrest plough of 45 kg. The country has a company manufacturing agricultural machinery (SIDEMA), which produces:

Ploughs;
Hoeing machines;
Harrows, and
Carts.

Production of these items is amply sufficient to meet national demand. The country thus has the necessary technical and design skills to develop and produce this equipment locally.

However, it does not possess any institution for the study of over-all needs in intermediate equipment.

To meet the required level of production it would be sufficient to have the machine tools and details of the manufacturing process for tools (dies, punches and jig).

(3) CATEGORY III AND IV

MACHINERY AND SPECIALIZED EQUIPMENT

All our current requirements are imported. Certain components could be assembled, and even manufactured, locally, notably castings.

It is envisaged that the country will not need to rely on imports in the future, but an organizational policy should be immediately adopted. Such a policy would involve:

Defining actual requirements;
Planning the mode of utilization: executing agency;
Establishing an appropriate technical/commercial network:
after-sales service, maintenance, repair; and
Setting up an import and assembly factory: progressive integration.

Technical assistance in manufacture, defining the process, and the necessary machinery, manufacturing punches, etc.

Financial assistance: grant, subsidy;
Assistance in human resources: services of a manufacturing expert.

(4) BASIC PLANT AND ALLIED INDUSTRIES

The country possesses certain basic plant, namely, foundries, forges, heat-treatment plant, and machine shops, but they are, paradoxically, under-equipped and under-utilized.

There are certain auxiliary industries as structural steel, joinery, and ship repair, but there is no iron and steel production plant and thus raw materials are all imported.

The main obstacles to the setting up and development of such plant are:

Financial resources; and
Lack of human resources.

Thus, in order to strengthen existing industries, all that is required is a contribution in terms of finance (investment in equipment) and in terms of human resources (services of a manufacturing expert).

IV. DESIGN AND TESTING

Facilities for design, development, adaptation, testing and evaluation are almost non-existent. Such facilities as there are are scattered between different government departments, and there are thus co-ordination problems.

V. MANUFACTURING TECHNIQUES

There are in the country agencies capable of providing advice or services in the field of legislation, organization, training and management, but there are no bodies to give assistance in manufacturing processes. All the assistance that can be supplied is of an administrative, financial and commercial nature. These agencies should be capable of giving assistance to industry in technical manufacturing studies, i.e.:

Determination of the product in terms of quality and quantity;
Enumeration of the various stages of manufacture, with a list of the necessary plant and machinery; and
Costing and monitoring systems.

VI. REPAIR AND MAINTENANCE

After-sales service is provided by the distributors, so that the efficiency of the service depends upon their attitude. It would be preferable for after-sales service to be linked with a specialized unit, i.e. an assembly and repair works.

VII. POLICY AND PLANNING

There is no national body at ministerial level dealing with policy and planning in the agricultural machinery sector.

There is no body providing support services and there is no inter-ministerial working group.

The major obstacle here is the difficulty of co-ordinating the efforts of the various ministries concerned.

VIII. INTERREGIONAL CO-OPERATION

The country could export on a short-term basis equipment such as hand tools and intermediate machinery, notably ploughs, hoeing machines and harrows.

In addition, it could provide technical assistance on setting up factories for products of categories I and II.

It could provide assistance in the form of personnel for marketing studies and studies of commercial networks. In return, other developing countries could give us assistance in the form of information on their manufacturing processes. In addition, an interregional common market should be envisaged.

IX. THE ROLE OF UNIDO

The principal fields in which UNIDO can aid our country are the following:

1. Human resources assistance: marketing studies; the planning of a programme covering both the upstream and downstream sides;
2. Technical assistance: setting up factories (technical processes, machine tools); and
3. Financial assistance: grants or subsidies for the purchase of equipment.

We do not know whether this type of assistance has been requested of UNIDO.

The mechanism for exchange of information between UNIDO and our country could be improved as follows: by making a survey of agencies or companies concerned with development, and by regularly sending them information, such as marketing studies, details of manufacturing processes for specific types of equipment, and characteristics and performance of machine tools.

X. PROPOSALS AND RECOMMENDATIONS

If assistance is to be effective it must be relevant to all aspects of a project, from the upstream to the downstream ends. Aid at only one point should be avoided because its effect is only marginal.

UNIDO, being the organization in the United Nations family responsible for industrial development, must participate not only in studies for the project but also in its implementation, in particular through:

Marketing studies, setting up the production unit (factory),
improvement of the commercial network and after-sales service,
public relations activity and extension work.

