OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

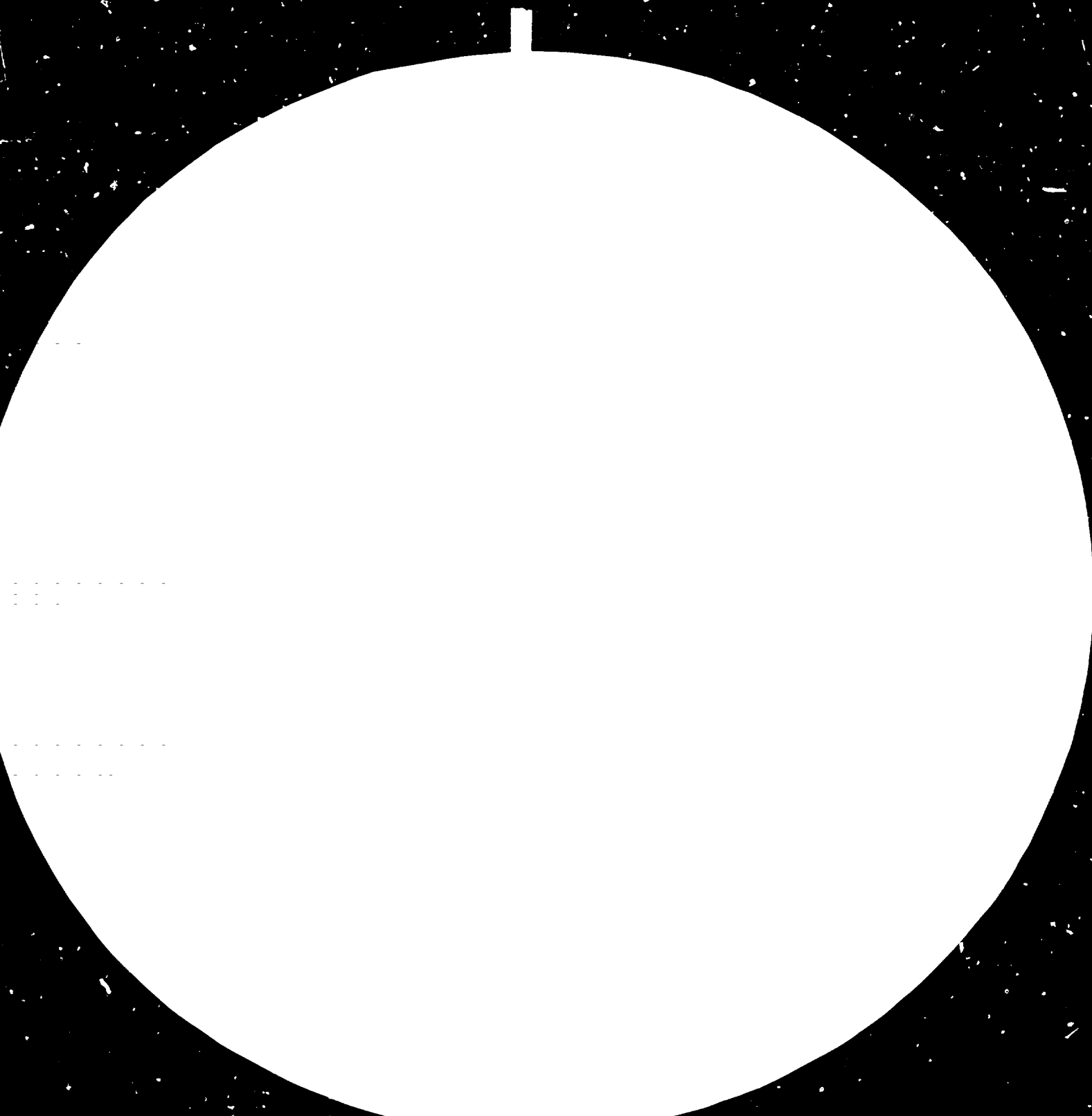
FAIR USE POLICY

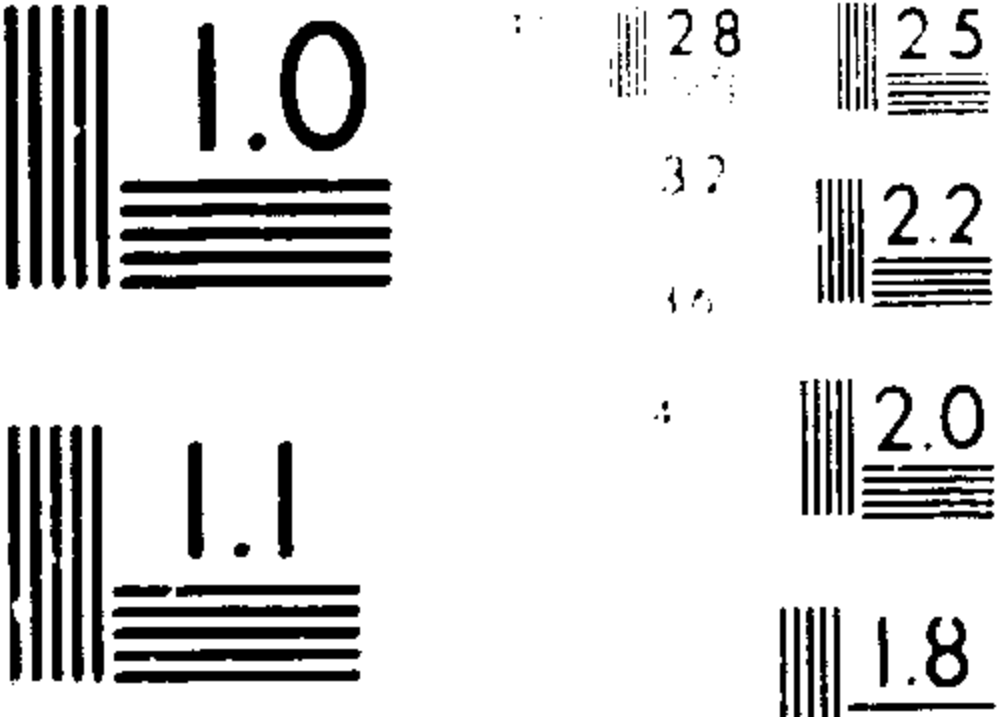
CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org




1.0
1.1
2.8
2.5
2.2
2.0
1.8


1.25
1.4
1.6

10179

Distr.
LIMITED

ID/WG.330/34
3 December 1980

ORIGINAL: ENGLISH

United Nations Industrial Development Organization

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

Beijing, China, 20 - 27 October 1980

COUNTRY SUMMARY - UNITED REPUBLIC OF TANZANIA*

by

T. C. Haule**

and

C. M. Mbena***

* The views expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been reproduced without formal editing.

** Planning and Monitoring Engineer, Ministry of Industry, Dar-es-Salaam.

*** Senior Development Officer, National Development Corporation, Dar-es-Salaam.

80-6464

1. Agricultural Machinery and Implements needs and demands

Tanzania's economy is, and for a long time to come, will remain agrarian based. Of late, the Government has been emphasizing the need to spur the development of the agrarian sector. Hence, an increased need for agricultural machinery and implements is a logical corollary of the resolution to modernize agriculture and increase its contribution of food supply to the 18 million Tanzanians and raw material supply to the local industries and foreign exchange earnings. For the next five years, demand for agricultural machinery and implements is expected to take the following pattern:-

Category I: Implements

Hand Tools

Hoes, matchets, shovels spades, axes, sickles, sisal and cane cutting knives, prunning shears.

Animal Drawn Equipment and Hand Operated Simple Machinery

Mould Board ploughs, cultivators, spike harrows, planters, weeders, ox carts, hand sprayers and maize shellers.

Category II

Intermediate Machinery

Disk ploughs, disc harroes, cultivators, seed drills, planters weeders, trailers tractor, mounted sprayers and sprinklers.

Category III

25 - 45 h.p. tractors, centrifugal water pumps for drawing water and irrigation purposes.

Category IV - Specialized Equipment

65 - 120 h.p. tractors, combine harvesters, large and sophisticated pumps.

2. Estimated Demand and Present Usage

Hand Tools

Among the above listed hand tools, hoes, matchets, axes, sisal knives, can cutting knives and sickles are the most common and successfully used tools in the country. Demand for hoes, matchets and axes in 1980 is estimated at 4,300,000, 3,900,000 and 670,000 pieces respectively. By 1985 demand for these tools is estimated to be 4,800,000, 4,400,000 and 740,000 respectively.

* Demand for these items is expected tostart falling towards end of this decade.

Animal Drawn Equipment and Hand Operated simple machinery

So far, animal drawn ploughs have been very successfully used, and annual demand for them is growing steadily. The same applies to ox-carts. The use of spike harrows and planters is being introduced. Judging from the basis of the feedback we have got, there is an indication that they will readily be accepted.

Category II

The use of disc ploughs, disc harrows, cultivators and planters drawn by tractors is gaining momentum. Demand for these types of intermediate machinery is expected to grow very fast as the government is currently emphasizing big farming. Present requirement of disc ploughs, harrows, cultivators and planters is 900, 450, 200 and 140 pieces respectively.

Category III

Simple and low cost tractors are still popular particularly, among small scale farmers. They are preferred due to the relatively low capital outlay and low maintenance costs. They constitute about 40% of the total tractor requirements in the country. The use of pumps for irrigation type of farming is just being introduced. In view of unrealiability of rainfull and availability of an abudant amount of water for irrigation, the use of pumps is presently, being encouraged at a national level. Demand for the various pumps is about 2,000 pieces per annum.

Category IV

There is an increased use of medium and large tractors in state and cooperative farms and villages. The use of such tractors is expected to grow fast. In 1979 the demand for such tractors was about 600 pieces. The annual growth rate is 5%. The use of combine harvesters is limited to a few wheat and rice growing estates.

3. MANUFACTURE AND IMPORTS

3.1 Simple Tools and Implements

a) So far, the country has mainly been depending on imports for meeting the requirement for these tools and implements. However, from next year, dependence on imports will be substantially reduced following the expansion of the existing plant (to have 4,300 ton capacity) and commissioning the new plant (with a 4,110 ton capacity per annum) which is in an advanced stage of implementation. In both cases Tanzania depended on external technical assistance. International assistance could be required for issues such as capacity utilization at both plants, quality standards and control etc.

b) Design and manufacturing technology is not so much of a constraint as the designs are relatively simple. Presently, there are a few local institutions such as TAMTU, University of Dar es Salaam which can render requisite services for the purpose. These institutions require more qualified personnel and equipment.

c) Foreign investment promotion may be required for strengthening our research and development institutions.

3.2 Intermediate Equipment

a) At present, these equipments are not produced in the country. Hence the annual requirements are wholly met by imports from Western Europe. The demand is as indicated in Question 2.

b) So far the country does not have the necessary capabilities for developing such products locally. However, as far as manufacture is concerned, plans are under way to produce them at our new plant to be commissioned towards the end of this year and at the proposed new plant to be established within the next three years (capacity 6,700 tons p.a.). In the long run, design work is expected to be carried out by institutions mentioned in point 3.1(b) above.

c) Foreign investment promotion for manufacturing is required in the form of technical know-how, soft loans and grants.

3.3 Powered machinery and specialized equipment

a) Nine hundred tractors and two thousand pumps have to be imported. Importation of combine harvestors is very small.

b) Importation of the above mentioned machinery and equipment is expected to fall progressively within the next ten years as local manufacture of the same is planned to commence during the said period.

c) Manufacture of tractors is expected to commence in early 1984 after completion of implementation of the proposed tractor manufacturing plant. The plant will have a rated capacity of 1,500 tractors per annum, the product range is 65 - 102 H.P. tractors. There will be a progressive local manufacture of the tractors. The project is estimated to cost about Shs. 600.00 million including initial working capital.

d) The problems could be lack of technocrats, raw and intermediate materials and necessary industrial linkages. Assistance could be rendered in the fields of training, planning, finance, marketing and servicing.

3.4 Basic facilities and ancillary industries

a) So far, we have four medium size foundries and about the same number of heat treatment units in the country.

b) Very few exist, they supply spikes and handles.

c) The constraints are manpower and foreign exchange mainly.

d) The government should encourage people/organizations wishing to establish such business by availing credit and training the required cadres.

4. DESIGN AND DEVELOPMENT, ADAPTATION, TESTING AND EVALUATION

The national institutions involved in these undertakings are the manufacturing units themselves, the industrial services consultancy organization (TISCO), the agricultural machinery testing unit (TAMTU) University of Dar es Salaam and the National Bureau of Standards. With the exception of TISCO, these institutions have got some of the equipment require.. for carrying out the above mentioned technical jobs. However, as is typical of a developing country, these institutions do not have all the equipment which is necessary for enabling them to effectively carry out the personnel. Possible ways of strengthening thest institutions are by making available more funds to them for procurement of the missing equipment and also training their employees to required standards. Assisting them in establishing sound standards is another way of strengthening these institutions.

5. ENGINEERING AND MANUFACTURING TECHNOLOGY

a) These are the industrial consultancy services organization, agricultural machinery testing unit, industrial research development organization and agricultural training centres. The Government is now setting up an Engineering Design Centre to be able to meet the present and future demand.

b) In the initial stage, the services could be limited to hand tools, animal drawn implements and tractor drawn implements. In this respect the services would be in the form of development of proto-types, material flow and planning, alternative production processes, technology transfer, inter firm cooperation etc.

c) In order to function effectively, these firms require external assistance in the form of experienced personnel, intensive training of the local staff - both on the job and abroad and additional necessary equipments.

6. REPAIR MAINTENANCE AND SPARE PARTS SUPPLY

At present, repair and maintenance facilities exist in almost every region. These have been established both by Private, SIDO and the Ministry of Works. They carry out mainly repair of non-complicated machinery. Apart from those regional facilities, we have two relatively big plants - National Engineering Company and Mang'ula Mechanical and Machine Tools Company - which undertake repairs, maintenance and manufacture of spare parts. The spare parts include gears, valves etc. Each of them has got a foundry for producing non-ferrous castings.

Short comings include non availability of raw materials as the same are not locally produced and also shortage of trained personnel. Possible ways of strengthening these local facilities would include expansion and modernization of their respective foundries in order that they can be able to carter for the ever growing demand for spare parts.

7. POLICY, PLANNING, STRATEGY AND COOPERATION

There is no national body for undertaking the policy making and planning in the agricultural machinery field. Instead, however, we have a Ministry of Planning, as well as a department in the Ministry of Industries which makes the policies and there are yet other departments in the other Ministries which monitor the implementation of the policies and plans. Institutional supporting services are rendered by the national body - National Development Corporation (NDC) entrusted with the development and physical implementation of such projects as well as supervising the operations of the established companies. The industrial services consultancy organization offers services in the field of techno-economic feasibility studies and consulting services.

For coordinating the activities of the Ministries of Industries and Agriculture, a "farm implements committee" has been established in the Prime Ministers Office. Members of the committee meet regularly to review progress and/or problems.

Constraints include problems in data collection arising out of different factors. Assistance could be in the form of funds for supporting the institutions rendering supporting services.

8. INTER-REGIONAL COOPERATION

a) Assistance to other developing countries can be rendered in the following areas:-

- Provision of suitable proto-types, Since a good number of the developing countries are in the stage of developing the i.e. farm implements, industry supply of suitable proto-types would greatly assist these countries.
- Another area, as we have a testing unit, could be testing other developing countries' farm implements.
- We could give them advice on operational aspect of farm implements manufacture as we have some experience in manufacture of hand tools and implements.

b) Other developing countries can assist us in the following areas:-

- Provide us with reports on their research findings on farm implements and machinery manufacture and use of the same.
- Sell to us their farm implements and machinery on the basis of preferential treatment.
- Exchange of other relevant experiences gained in these countries.

9. ROLE OF UNIDO

a) Priority areas:-

- Carrying out of techno-economic feasibility studies of farm implements and machinery manufacturing projects.
- Assist in the selection and application of the right production technology and effective transfer of the same within a specified time period.
- Assist in the promotion of inter regional trade.

b) We had requested UNIDO to give experience in other areas of industrial development.

c) This could be by way of regular joint meetings in which progress and problems could be reviewed and new ideas could be generated. UNIDO could also assist financially by arranging visits of our people to other developed and developing countries for study tours etc.

10. SPECIFIC PROPOSALS AND RECOMMENDATIONS

The three most important areas are:-

1) Research and development for establishment of new projects, and expansion of the existing ones.

2) Choice of the appropriate production technology and optimal capacity utilization.

3) Promotion of inter-regional cooperation in the field of manufacture and trade.

4) Training of local personnel in the field of agricultural engineering.