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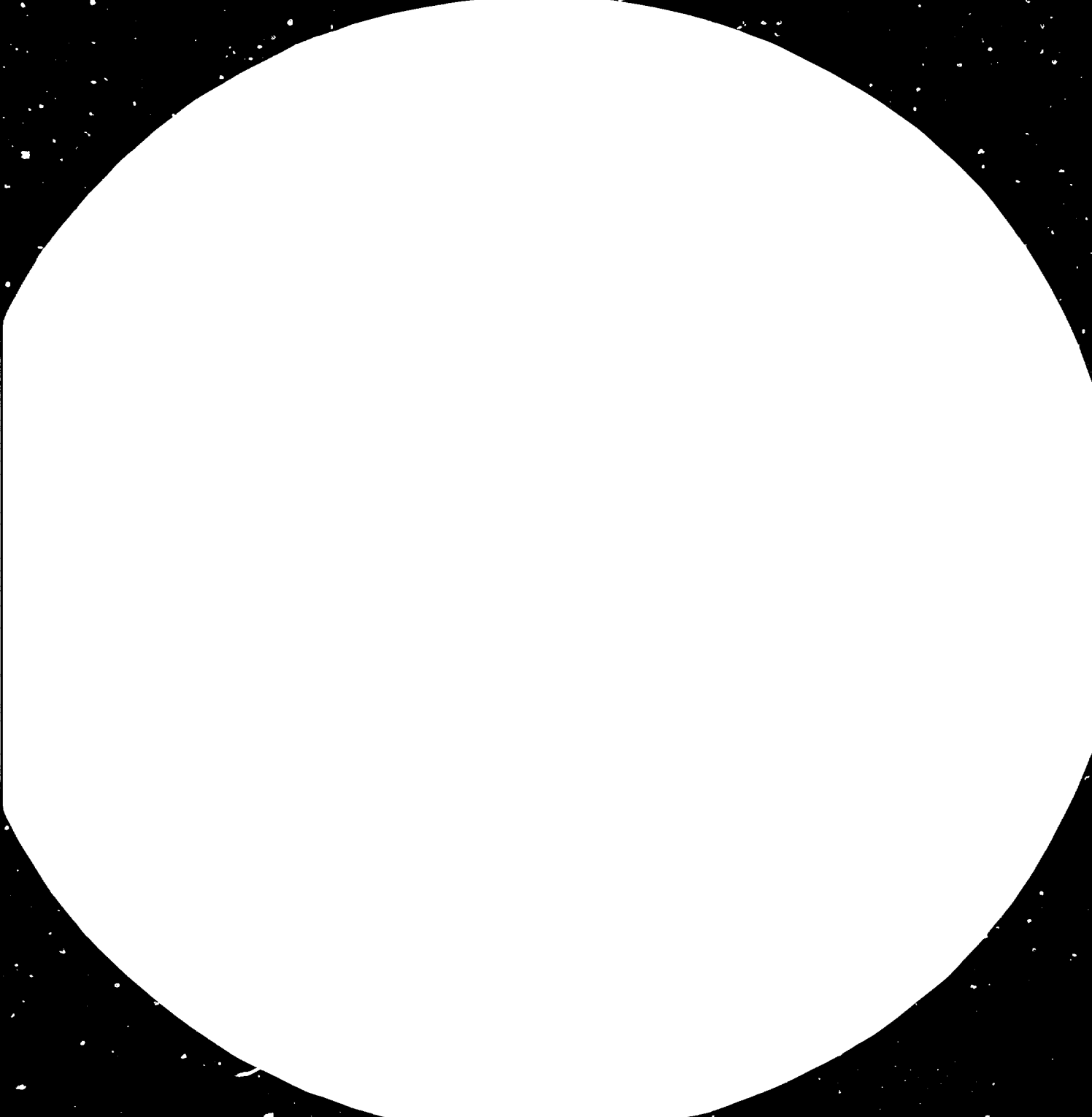
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UNIDO ACTIVITIES IN AFRICA IN THE FIELD
OF AGRICULTURAL MACHINERY INDUSTRY
(1969 - 1981)
AND POTENTIAL (1982 - 1986)*

(An analysis and summary of the technical assistance and supporting activities at the country, subregional and regional levels with emphasis on the facts, experience, constraints, suggested future programmes of technical assistance and recommended possible action by the concerned Governments for effective realization of development in this sector)

Prepared by:

The UNIDO Secretariat

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1. North African Region
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3. Central and Sahel Region
4. Eastern/Southern/Central Region
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SUMMARY OF ANALYSIS

- (i) The strategic importance of the development of agricultural machinery and implements and their subsequent manufacture for the intensification of food production, particularly in the African region, has been highlighted in various meetings of the African Ministers of Industry, Lima Declaration and Plan of Action, New Delhi Plan of Action, and the Lagos Plan of Action 1980 by the African Heads of the States.
- (ii) The major problem facing most of the African developing countries today is a continued recurrent imbalance between agricultural food production and ever-growing population both in the rural and urban areas. The economy of most of the African developing countries is broadly based on rural agriculture, with limited levels of industrialization both in engineering and allied metal working sector. In many countries, the agricultural share is 90 per cent of the total exports. Human labour and utilization of animals are the major inputs in the overall rural farming system. The tools and equipment available for farming are often inadequate and poor in quality. In vast areas irrigation is carried out mainly from the seasonal rainfall. The so-called mechanization level attributed to the farming operations is confined to the application of traditional hand tools and simple animal drawn equipment. The cultivation of techniques are often based on past conventional and traditional methods. To a great extent the manufacture of agricultural hand tools and implements are often undertaken at village blacksmith level without sufficient technological and engineering back up support facilities.
- (iii) The term "Agricultural Machinery" covers a wide spectrum of products from hand tools, animal-drawn implements and hand-operated machines, irrigation equipment, crop protection machinery to power machinery and equipment such as tractors, power tillers, engines and combines. Consequently, the agricultural machinery is not just "tractorization". The manufacturing capability varies from blacksmith/rural workshop level to large factories.
- (iv) The Government of developing countries of Africa have awarded significant emphasis to development and local manufacture of appropriate agricultural machinery and implements, within the framework rural development and rural industrialization. As the majority of the farmers have small holdings and rural small and medium scale industry is the backbone of industrial development, the national Governments wish to develop simple and intermediate agricultural machinery manufacture suited to small and medium farmers to be manufactured in small/medium scale rural industrial sector. As there exist some facilities in the region, they should be strengthened and upgraded to undertake manufacturing work.

.../..

- (v) UNIDO's agricultural machinery technical assistance activities during the past 10 years cover 44 developing countries of Africa in terms of national activities and 4 sub-regions (North African, West and OCAM, Central and Sahel and East/Southern/Lower Central sub-regions) as well as region as a whole.
- (vi) The major product lines are hand tools, animal drawn implements, manually operated equipment and simple low cost power equipment.
- (vii) In terms of magnitude of UNIDO activities it involved at national levels a total of around 150 projects of which more than 60 have been completed, and around 40 are in pipeline for 1982-86. However, during 1970/80 around 30-40 projects for which specific Government requests were received, project document prepared, but could not be implemented due to lack of finances. At sub-regional/regional levels the magnitude of project involved around 35 projects of which 18 have been completed, 8 are in pipeline (1982-86) and around 8 could not be started during 1970-80 due to lack of finances.
- (viii) The areas of technical assistance involved (a) feasibility and overall manufacturing sector development (b) manufacture (c) engineering design and development (d) repair and maintenance.
- (ix) During 1970s the Governments of the developing countries of Africa emphasized - in terms of technical assistance - the overall analysis of the sectorial development. During 1980s it is very evident that the Governments have awarded a priority for integrated development of manufacturing sector with inbuilt engineering + D, repair and maintenance and training through inter-ministerial plan of action.
- (x) In this context, the consultation activities of UNIDO in the area of agricultural machinery industries has opened up a new dimension in UNIDO technical assistance activities. UNIDO is fully geared up to meet this challenging situation for assisting Africa during the 2nd Development Decade.

- (xi) A number of machines and equipment developed in selected member developing countries (such as manually operated dusters, sprayers, maize shellers, threshers, seed treaters, chaff cutters, animal drawn improved implements such as seed drills with fertilizer distributors, planters, etc.) are not yet being manufactured primarily due to lack of communications, transfer of technology and adaptation difficulties.
- (xii) In addition, selected machines and equipment developed by certain national and international institutes (example: small power tiller, weeder, power threshers, simple seeders, batch drier, seed cleaners, herbicide applicator, etc.) are to be promoted for local manufacture through an integrated regional activity. There is also a need to develop new simple machines and equipment based upon the experience and adaptation of designs suited to dry land farming. Lastly, there is a need to promote interchange of technological activities among national/sub-regional countries and develop a relationship between institutions of sub-regional countries and those of other developing and industrialized countries which have experience in the development and manufacture of tools and equipment suited to small farms and manufactured in modest volume.
- (xiii) The developing countries of Africa are importing and using power machinery such as 4-wheel riding tractors and engines. The annual demand at national level may not in any case justify an economic local production level at present. Therefore, there appears to be a need for any regional activity in the promotion of tractor and power equipment manufacture, including in guiding in contact and license negotiations, ancillary industry development and standardization, regional market development and complimentary in component/critical parts production. It is well known that these tractors and power machines are suitable for large-scale dry land farming. However, they meet the requirements of a very small percentage of farmers only. Consequently, there is a gap with respect to the development and local manufacture of appropriate agricultural tools and equipment needed by the small and medium farms which could be done by rural based small and medium industries.
- (xiv) UNIDO's analysis of the manufacturing sector of the region has shown that there is a need to develop a viable production system through encouragement of product diversification by existing small and medium manufacturers and establishment of new units in rural areas.
- (xv) The analysis also shows that based on the needs of the developing countries of this sub-region with reference to low-cost simple agricultural tools and implements suited to small farms and within the framework of simple manufacturing techniques by rural workshop may need an integrated network programme of action with following elements:

.../..

Identification of appropriate agricultural tools, implements and equipment suitable for small and medium farms; promotion of adaptation of existing machinery; development through design and prototype fabrication of equipment; assistance to local manufacture through information dissemination, in-plant training and co-operation between national institutions and manufacturers among the sub-regional countries; cooperation with other developing and industrialized countries; introduction of appropriate production techniques, marketing and extension services at national levels and promotion of local manufacture of appropriate products (hand tools; hand operated machines; animal drawn equipment; irrigation equipment, including pumps, small engines and simple storage bins, etc), taking into account the need for introducing high employment potential production techniques with emphasis on utilization of domestic resources and with particular emphasis on the development of small and medium industries with a view to promoting rural industrialization in the sub-regional developing countries.

- (xvi) The Governments of the developing countries of Africa, with the assistance of UN have established an "African Regional Centre for Design and Manufacturing" at IBADAN, Nigeria. The Africa Regional Centre for Design and Manufacturing has given a priority for promotion of appropriate agricultural machinery. However, there is a great need to link the activities of the Africa Regional Engineering Centre for Development and Manufacturing in the field of agricultural machinery with appropriate national institutions which would be the nucleus for promoting national level activities within the framework of a subarea regional programme.
- (xvii) The Lagos Plan of Action has recommended creation of subregional/area engineering complexes. The promotion of appropriate agricultural machinery is to be given a significant priority.
- (xviii) Therefore the future Programmes aims at strengthening local capabilities in the areas of (a) equipment (b) design (c) R and D (d) information and (e) policy in the agricultural machinery field within the framework of national activities in each of the developing countries of Africa and also interlinking national activities into subregional/regional activities in the field of agricultural machinery and implements.

UNIDO ACTIVITIES IN AFRICA IN THE FIELD OF
AGRICULTURAL MACHINERY INDUSTRY
(1969 - 1981)

SECTION I

INTRODUCTION

A. SCOPE OF THIS PAPER

This is an analysis and summary of the UNIDO's technical assistance and supporting activities in the field of agricultural machinery at country, subregional and regional levels, with emphasis on the facts, experience, constraints, suggested future programmes of technical assistance and recommended possible action by the concerned Governments for effective realization of development of this sector.

B. OBJECTIVES

- to take stock of the UNIDO past work;
- to analyse the impediments encountered on follow up and realization;
- to assess the elements contributing to success as well as failure;
- to re-orient UNIDO's activities based on past experience, especially in line with the Global Consultation Meeting;
- to bring to the notice of the Governments concerned, the need for integrated approach in this sector with due consideration to the recommendations of the Global Consultation Meeting.

C. OUTPUT

The anticipated output of this paper is:

- more effective dialogue between UNIDO and the representatives of the Governments on development of this sector;
- Allocation of priority by the Governments concerned for development of this sector in general and appropriate UNDP-IPF finances of 3rd Country Programme Cycle (1978-86) in particular.

SECTION II

CHRONOLOGY OF UNIDO ACTIVITIES IN AFRICA

A. 1968-69: IDB Directives

- (i) The Industrial Development Board emphasized the importance of the design and manufacture of agricultural machinery and implements in developing countries and recommended that the work in this area be given a high priority (ID/B/41 page 43 para 116). Continuing the emphasis on the agricultural machinery design and manufacturing aspects, the Third Session of the Board recommended that more assistance be provided by UNIDO to developing countries (ID/B, WGPG/L.4).
- (ii) Based upon the above, UNIDO allocated a high priority to the manufacture of agricultural machinery and implements, primarily directed towards design, engineering development, and adaptation and manufacture. The preliminary work also includes formulation of a rational policy towards a long-term programme, organization of expert group meetings, fact-finding and pre-investment mission, identification of areas of technical assistance which may be desirable in developing countries, and classification of agricultural machinery and types of assistance to be rendered by UNIDO.
- (iii) A sound policy of co-operation and mutual consultation between UNIDO and other UN agencies and Regional Economic Commissions, as well as between UNIDO and national and international professional organizations and allied institutions, was established to assist the developing countries. Through this type of integrated approach, the multi-disciplinary problems of the agricultural machinery industry and its applications as an important input in agricultural production can be duly taken into account.
- (iv) In this context, as a first step an expert group was to be organized to define the needs of the countries and the regions.

B. 1969: THE START: EXPERT GROUP MEETING

- (i) The Expert Group Meeting on Agricultural Machinery Industries in Developing Countries" (August 1969, Vienna) was attended by participants from 31 developing and industrialized countries. The following countries from Africa participated:
Algeria, Ghana, Kenya, Sudan as well as ECA.
- (ii) In this context, it is to be reported that UNIDC-ECA presented a paper entitled "possible areas of agricultural machinery and implements in Africa" (ID/WG 40/18 dated 7 August 1979). The report highlighted the production and basic facility status in sub-regions of North, West and Eastern Africa and identified specific projects at national levels in Algeria, Ethiopia, Ivory Coast, Ghana, Kenya, Liberia, Libya, Madagascar, Mali, Morocco, Nigeria, Senegal, Sierra Leone, Sudan, Tunisia, Tanzania, Egypt, Upper Volta and Zambia.
- (iii) The expert group recognized that it is the Governments of the developing countries and their inter-governmental organization who should take priority action for the development and promotion of this sector at national, sub-regional and regional levels. The expert group also recommended that UNIDO sponsored missions to be sent to various regions (Africa specifically mentioned) to formulate technical assistance programmes and specific projects in the agricultural machinery and implements sector.

C. 1970-71: IDENTIFICATION OF TECHNICAL ASSISTANCE AREAS IN AFRICA

- (i) During 1970-71, an indepth analysis was conducted in various countries of Africa (within the framework of a global campaign by UNIDO) in order to identify possible technical assistance areas in agricultural machinery sector. This was through a review of all country documents, correspondence with Regional Commission, sub-regional organizations, UNIDO SIDFAs, UNDP Resident Representatives, Government officials, Field Project Managers, National experts, FAO and other UN agencies.
- (ii) Based on this analysis, the major areas of possible actions in the agricultural machinery sector in Africa were identified as follows in terms of potential technical assistance as indicated officially by the Government concerned:
- (a) Short term assistance (SIS)
- manufacturing feasibility study:
Algeria, Congo, Cameroon, Mali, Malawi, Zaire;
 - Strengthening of engineering design capabilities:
Zaire;
 - Manufacturing rationalization:
Zambia;
 - Regional agricultural machinery survey:
Eastern Africa.
- (b) Long term assistance (SF/IPF)
- Simple tools and animal drawn agricultural machinery manufacturing project:
Burundi, Chad, CAR, Malawi, Mali, Rwanda, Sudan
(Note: The relevant project concepts were formulated by UNIDO in 1971 and sent to the Governments concerned through UNDP Resident Representative in late 1971).

- (c) Further technical information was deemed to be necessary with respect to Ethiopia, Ivory Coast, Lesotho, Libya, Madagascar, Morocco, Nigeria, Senegal, Sierra Leone, Sudan, Tunisia, UAR, Upper Volta and Zambia
(Note: Letters to the above Governments through concerned Resident Representatives were written in July 1971, following our Nov.-Dec. 1969 communications, requesting additional informations).
- (d) From the point of view of development of product areas, the following were the wishes of the Governments concerned:

<u>Product Group</u>	<u>Countries which expressed wish to develop</u>
- hand tools and animal drawn implements	Burundi, Cameroon, CAR, Congo, Chad, Ethiopia, Ivory Coast, Mali, Malawi, Madagascar, Nigeria, Sudan, Senegal, Sierra Leone, Upper-Volta, Zambia and East African countries
- tractor and tractor drawn implements	Algeria, Libya, Morocco, Sudan, Tunisia, Zaire

D. 1970-72: UNIDO-FAO COOPERATIVE PROGRAMME START UP

- (i) Within the framework of "Agreement setting out guidelines for co-operation between FAO and UNIDO in the field of industrial development" (IDINF-6 dated 6 July 1969), technical discussions in the field of agricultural machinery and implements were conducted through 10 meetings on the potential agricultural machinery projects in the following 14 countries and 3 sub-regions of Africa:
Algeria, Burundi, Chad, CAR, Gambia, Malawi, Madagascar, Morocco, Mauritius, Sudan, Tanzania, Uganda, Upper Volta, and Zaire as well as West, North and Southern subregions.
- (ii) Joint UNIDO-FAO projects (primarily short term exploratory missions) were agreed upon in selected countries and proposals were put forward to the Governments concerned and to UNDP.

E. 1970-72: START UP OF UNIDO-ECA COOPERATIVE PROGRAMME

- (i) First Technical Consultation Meeting between UNIDO - ECA was held in July 1969 on the promotion of agricultural machinery industry in Africa.
- (ii) During 1970-72, UNIDO through UNIDO Regional Adviser with ECA Industry Division established an effective contact on the following projects and areas in Africa:
 - Follow up on completed projects in the areas of
 - (a) manufacturing feasibility study - Algeria, Burundi, Chad, Gambia, Madagascar, Malawi, Mauritius, Morocco, Sudan, Zambia;
 - (b) Repair and maintenance: CAR, Egypt;
 - (c) Market survey: Tanzania;
 - (d) North Africa UNIDO-IDCAS-ECA mission.

- Ongoing project in the area of repair and maintenance (Algeria and Tanzania) and small tractor projects (Swaziland) potential regional activities in OCAM.
- (iii) With the establishment of Joint ECA-UNIDO Industry Division at ECA in 1972/73, the co-operative aspects were strengthened.
- (iv) A document on national economic profitability of agricultural hand tools in Africa and some selected preliminary manufacturing profiles on specific products for Africa were prepared by ECA in 1972.

F. 1970-72: TECHNICAL ASSISTANCE ACTIVITIES

A. Completed projects

(i) Project formulation/preparatory assistance/feasibility study missions

Algeria, Burundi, C.A.R. (R+M), Chad, Gambia, Madagascar, Malawi, Mauritius, Morocco, Sudan, Tanzania (Market survey), Zambia, Africa North sub-region;

(ii) Repair and maintenance programmes

Algeria, Egypt, Gambia, Tanzania;

(iii) Design/development

Sudan

(iv) Assistance at factory level/negotiations, etc

Algeria, Sudan

B. Project concepts/reports/documents prepared and submitted to the Government/UNDP but not implemented due to non allocation of appropriate finances

(i) Feasibility study missions

Benin (agricultural tools), C.A.R. (manufacture), Ethiopia, Ghana, Ivory Coast, Libya, Upper Volta, Zaire, East/Southern/Central African Region;

(ii) Design and development

Algeria

(iii) Integrated repair and maintenance

Algeria

G. 1972-76: ACTIVITIES (UNDP 1ST PROGRAMMING CYCLE)

A. Completed projects

(i) Project formulation/feasibility study

Benin (silos), Congo, Kenya (windmills/pump), Libya, S. (tractors), and OCAM sub-region, Central and Sahel Sub-region, Southern/Eastern/Central Sub-region (small tractor market survey), Africa regional (small tractor demand and product specification analysis).

(ii) Pilot manufacture

Gambia, Kenya (wind mill/pump), Southern/Eastern/Central Africa sub-region (UNIDO-India Programme, meeting, UNIDO-P.R. China programme: power tiller)

(iii) Repair and maintenance

Tanzania, Zaire

B. Project concepts/reports/documents prepared and submitted to the Government/UNDP but could not be implemented due to non allocation of appropriate finances 1972-76

(i) Feasibility study etc

Benin (agricultural tools), Togo, Uganda

(ii) Pilot manufacturing plants/production expansion

Benin (silos), Botswana, Burundi, Chad, Congo, Ethiopia, Gambia, Ghana, Ivory Coast, Lesotho, Madagascar, Malawi, Mauritius, Niger, Nigeria, Rwanda, Tanzania, Upper Volta, Sahel Region, Southern/Central/Eastern Africa Region, Africa Regional (meeting), Africa Regional - LDC (promotion of simple agricultural implements manufacture)

(iii) Repair and maintenance

CAR, Egypt, Gambia, Morocco, Nigeria, Africa Regional including LDCs (work-shop)

(iv) Design and development

Ethiopia, Tanzania, Africa Regional: LDCs (preparation of a booklet on agricultural tools development)

H. 1977-1980/81: TECHNICAL ASSISTANCE ACTIVITIES (UNDP 2ND PROGRAMMING CYCLE PERIOD)

A. Completed/ongoing projects

(i) Feasibility study, project formulation etc

Congo, Lesotho, Senegal (small tractor), Swaziland (small tractor), OCAM region, Algeria, Angola, Benin (silos), Congo, Ethiopia, Kenya (low cost tractor), Mali, Upper Volta (repair + Maintenance), Zaire, Sahel region

(ii) Assembly/manufacture

Senegal (small tractor), Togo, Uganda, East/OCAM/
Sahel region (workshop), Eastern/Southern/Central
region (small tractor workshop)

(iii) Repair and maintenance

Senegal (irrigation pumps), Togo, Guinea,
Guinee-Bissau

B. Project concepts/reports/projects prepared and submitted
to the Government/UNDP but not implemented due to non
allocation of appropriate finances

(i) Feasibility study

Cameroon (popularization study)

(ii) Design and development

Cameroon, Ghana, Sudan, Africa Regional (Centre for agri-
cultural machinery, design and development)

(iii) Manufacturing facilities/pilot plants

Benin(silos), Botswana, Chad, Gambia, Malawi, Mali, Niger,
RWANDA, Sudan, Tanzania, Upper Volta, West/OCAM/Sahel region
(pilot plant/training), Eastern/Central/Southern Region
(pilot plant/training)

(iv) Repair and maintenance

Tanzania

SECTION III
ANALYSIS OF TRENDS, AREAS AND CONSTRAINTS
IN TECHNICAL ASSISTANCE

A) PRODUCTS

Considering all the technical assistance projects (both implemented and pipelines) the following is the analysis

- (i) around 85% of requests deal with hand tools (hand tools, sickle, hoe, shovel, pick axe and bush knife), animal drawn implements (plows, cultivator, leveller and seeder), manually operated equipment (simple pump, corn sheller, peanut decorticator, cassava chopper, paddy thresher);
- (ii) around 5% of the request deal with intermediate power machinery (primarily small tractors) and tractor drawn implements (plow, harrow and cultivators);
- (iii) around 4.0% of the request involves standard tractor;
- (iv) around 1.0% of the request involves other items such as silos;
- (v) and around 5.0% of the request involve basic facilities (foundry, forge, heat treatment etc.) specifically for agricultural machinery.

B) AREAS AND TECHNICAL ASSISTANCE REQUEST

Among the four major areas of technical assistance requested, around 60% constitutes overall feasibility study and agricultural machinery sectoral development;
15% constitutes repair and maintenance;
20% constitutes pilot manufacture and manufacturing assistance
and 5% constitutes engineering design and development.

C) EVALUATION OF TECHNICAL ASSISTANCE AREAS

- (i) The technical assistance projects in the areas of overall development of agricultural machinery manufacturing sector including feasibility studies involved multidisciplinary teams (sometimes in cooperation with FAO). The project analysed the need, the potential, manufacturing requirements, the necessary engineering design and adaptation capabilities, repair and maintenance programme and training. The follow up recommended programmes were in the area of manufacture (with inbuilt R and D, R and M and training). The overall follow up of these projects

in terms of a practical action plan by the concerned Governments/intergovernmental subregional organization could have been more effective if there was more inter-ministerial interaction (ministry of agriculture and ministry of industry as well as ministry of planning) so as to develop and implement integrated programmes.

However, it is very gratifying to note that the Governments of the developing countries of Africa have - after the initial overall analysis activities - awarded a priority for integrated programmes on agricultural machinery industry development. In this context, the interministerial interlink and programme development are emphasized and this important trend is the basis for UNIDO's integrated programme of technical assistance in 1980's in Africa.

- (ii) Regarding manufacturing assistance projects, the emphasis by the Governments is on upgrading existing facilities (primarily in rural and small/medium scale sector), in addition of basic facilities such as heat treatment, foundry, forging etc., as well as introduction of industrial engineering facilities. However, the problem of finances, especially raw material, correct selection of raw materials, quality control and cost reduction techniques are the major problems faced. In this context
- a) underutilization of existing manufacturing facilities
 - b) lack of basic facilities such as foundry, heat treatment, forge shop tool room etc. and
 - c) technical man power are the major problems faced.
- Some of the developing countries of Africa have initiated initial programmes to start new production units. In this context the analysis has indicated the problems of technology transfer, product and production technology procurement and long terms of finances and training.
- (iii) Regarding design and development projects, the assistance has been primarily to the existing agricultural machinery institutions. However, these institutions - from a historical point of view - have been engaged in testing and unfortunately have no engineering design capabilities, and suffers from lack of a dynamic industrial liaison programme. The physical facilities and technical manpower are inadequate. The UNIDO activities aim at strengthening these institutional facilities and introduction of engineering design and development capabilities with a strong orientation of effective interlink with manufacturing sector.

- (iv) Regarding repair and maintenance projects the assistance has been primarily in terms of strengthening the existing national repair and technical man power through provision of mobile units, workshop machinery and organizing a work programme. The major problems faced are
- a) the lack of integrated R + M programme interlinking rural, distric level and central workshops
 - b) lack of spare parts
 - c) lack of raw material and
 - d) lack of physical facilities in terms of ancillary industry, spare parts production, laboratory facilities, material bank and operational finances.

D) MAJOR CONSTRAINTS

In principle, the major obstacles and problems faced in the promotion of agricultural machinery industry in developing countries of Africa may be summarized as follows based on the expence in technical assistance:

- the National policy and strategy in the field of development of agricultural mechanization and agricultural machinery industries has not been clearly defined,
- lack of co-ordination among Governmental organizations and professional manufacturers and farmers associations related to farm mecharization and agricultural machinery industries within the countries,
- lack of co-operation and exchange of information among neighbouring countries in the field of agricultural mechanization and agricultural machinery industries,
- lack of basic facilities for manufacturing agricultural machinery and implements,
- lack of know-how,
- lack of National engineering capabilities and qualified personnel,
- lack of finances.

E) RECOMMENDATIONS

Based on the past experience, the following may be regarded as important recommendations for consideration of the Governments o. developing countries of Africa for promotion of agricultural machinery industry sector in 1980's:

- formulation of National policy and strategy on agricultural mechanization and agricultural machinery industries,
- strengthening of the existing National Governmental Institutions,

- setting up of National Committees for co-ordination activities in the field of agricultural mechanization and agricultural machinery industries,
- strengthening of existing or setting up of National Institutes/Centres for agricultural mechanization and agricultural machinery industries,
- promotion of the training of National Cadres,
- promotion and development of basic facilities for manufacturing, repair and maintenance,
- creation of Regional Network for Agricultural Machinery in order to co-ordinate activities in the field of agricultural mechanization and agricultural machinery industry and avoid overlappings into the R and D,
- allocation of appropriate national finances for development of this sector,
- awarding a national/regional priority and inclusion of specific projects in agricultural machinery industry sector within the framework of national/regional UNDP 1982-86 IPF country/regional programme cycle.

SECTION IV

A BASIS FOR UNIDO' NEW APPROACH FOR INTEGRATED
TECHNICAL ASSISTANCE DURING AFRICA SECOND
DEVELOPMENT DECADE (1980- 90)

- (i) Successive African Minister of Industries during the full decade of 70's highly recommended the indigenous manufacture of agricultural machinery and implements in each African states. Particular emphasis was given to upgrade the existing metal-working industries engaged in manufacturing agricultural machinery. The final act of Lagos specifically insisted the member states to increase the input requirements of basic needs particularly the food production. Agricultural machinery and implements are the major inputs for the intensification of food production.
- (ii) The following activities from the past couple of years are to be regarded as the basis for UNIDO's integrated approach towards agricultural machinery industry development in Africa.
- (iii) The concept of technical assistance by UNIDO is not to encourage technical assistance on an ad-hoc and isolated basis, but to foster an integrated approach by the Governments of developing countries of Africa. Such an approach will primarily require interlinking agriculture and industry and provision of industrial inputs for agricultural development. The importance of local production of appropriate agricultural tools, animal drawn implements, manually operated equipment and intermediate power machinery (and in some cases standard tractors, engines, deepwell pumps, etc) is a basis requirement for such an industrial input programme for agricultural and rural development. This will require engineering applied development and adaptation, manufacture through expansion of existing engineering industries(in some cases establishment of new units), repair and maintenance and training.

It will also incorporate (a) strengthening of agricultural machinery institutions in terms of engineering design and development capabilities and physical facilities together with industrial liaison and training (b) promotion of integrated repair and maintenance facilities (c) training at all levels (d) provision/allocation of industrial finances for manufacture and (e) provision and allocation of agricultural finances for rural purchase and effective utilization.

- (iv) In order to accomplish the above, the pre-requisite is an inter-ministerial (Ministry of Agriculture, Ministry of Finance, Ministry of Planning, etc.) integrated approach at national level.
- (v) UNIDO's new integrated approach towards agricultural machinery industry promotion in developing countries in general and in Africa in particular is a result of past experience and the following important activities in which developing countries of Africa participated and discussed the subject in detail.

A. NEGOTIATIONS/CONSULTATIONS

- (i) First Preparatory Expert Panel Meeting for Consultations on the Agricultural Machinery Industry (23-27 Nov. 1977, Vienna)
Participation by: Algeria, Tanzania
- (ii) Second Preparatory Expert Panel Meeting for Consultations on the Agricultural Machinery Industry (29 May - 2 June 1978, Vienna)
Participation by: Senegal

- (iii) Three missions by UNIDO consultants in preparation for the Global Preparatory Meeting for Consultations on the Agricultural Machinery Industry (March/April 1979)
- (a) 1st consultant: Algeria, Egypt, Libya, Morocco, Sudan, Tunisia
 - (b) 2nd consultant: CAR, Gabon, Nigeria, Senegal, Zaire
 - (c) 3rd consultant: Ethiopia, Kenya, Tanzania

(Note: Analysis on country and regional necessity of issues on the Agricultural Machinery Industry were prepared by the consultants)

- (iv) Global Preparatory Meeting for Consultations on the Agricultural Machinery Industry (5-8 June 1979, Vienna)
- Participation by: Algeria, Cameroon, Tanzania and consultant from Egypt
- (v) First Consultation Meeting on the Agricultural Machinery Industry (15-19 October 1979, Stresa, Italy)
- Participation by: Algeria, Benin, Burundi, Egypt, Gambia, Kenya, Lesotho, Malawi, Morocco, Nigeria, Senegal, Sudan, Swaziland, Tunisia, Tanzania, Upper Volta, Zambia
- (vi) Meeting on Exchange of Experience and Co-operation among Developing Countries in the Development of the Agricultural Machinery Industry (20-27 October 1980, Beijing, China, P.R.)
- Participation by: Algeria, Benin, Egypt, Kenya, Madagascar, Niger, Nigeria, Somalia, Togo, Tunisia, Tanzania, Zambia

(vii) Preparatory Work on Regional Consultation Meeting on
Agricultural Machinery Industry in Africa

(a) Country study report on agricultural machinery industry prepared by the local experts of the following selected 15 developing countries of Africa (May-Sept. 1981):

Egypt, Ethiopia, Sudan, Kenya, Tanzania, Zambia, Nigeria, Algeria, Mali, Senegal, Cameroon, Togo, Zaire, Burundi, Madagascar

(b) UNIDO consultants (sub-contractor's) visit to following 8 developing countries of Africa with reference to the preparation of the "study/profiles for upgrading of agricultural machinery production capabilities in Africa" (August 1981)

Visit to: Ethiopia, Kenya, Uganda, Zambia, Cameroon, Mali, Senegal and Zaire

(c) UNIDO consultant's (sub-contractor's) visit to following 6 developing countries of Africa to prepare "profiles on industrial service facility for engineering back up support" (agricultural machinery) (September 1981)

Visit to: Nigeria, Sudan, Tanzania, Burundi, Ivory Coast and Madagascar

B. DEVELOPMENT AND TRANSFER OF TECHNOLOGY

The meeting of Working Group on appropriate technology for production of agricultural machinery and implements (20-25 Nov. 1978, New Delhi) within the framework of International Forum on appropriate industrial technology

Participation by: Sudan, Tanzania

C. INDUSTRIAL AND TECHNOLOGICAL INFORMATION

- (i) Ad-hoc Expert Group Meeting on the Working of the Industrial and Technological Information Bank (INTIB) in the area of pilot activities in agricultural machinery and implements (23 Nov. 1977, Vienna)

Participation by: Tanzania

- (ii) INTIB information collection and exchange of information on agricultural machinery manufacturers (Global Activity 1977/78). Regarding Africa as of 28 March 1978 the following countries have participated:

Participation by: Cameroon, Congo, Egypt, Ghana, Ivory Coast, Kenya, Madagascar, Mali, Mauritius, Morocco, Senegal

- (iii) INTIB information collection and exchange of information on agricultural machinery research and development institutions (Global Activities 1977/78). Regarding Africa as of 28 March 78, the following countries have participated:

Participation by: Botswana, Congo, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Morocco, Nigeria, Senegal, Sudan, Tanzania and Tunisia

D. ECA-UNIDO JOINT INDUSTRY DIVISION ACTIVITIES

- (i) A technical report on "Engineering in Agro-machinery industries technology for Africa" prepared by ECA for the workshop of Association for the Advancement of Agricultural Science in Africa, 16 May 1979.
- (ii) In 1978, ECA/UNIDO mission visited Kenya, Uganda, Zambia, Sudan, Egypt, Tunisia, Nigeria, Mali, Senegal and prepared a development programme for metal and engineering industries sector with greater emphasis on local manufacture of agricultural machinery.

- (iii) The African Expert Group Meeting during December 1979, examined the basic document and recommended the development of specific projects related to agricultural machinery industry. Since 1979 ECA/UNIDO missions visited several Eastern and Southern African countries as a follow up of the recommendations initiated by the African experts.

- (iv) In addition to this, under the recommendations by the African Ministers of Industries, ECA with close collaboration with UNIDO and UNDP is setting up the African Regional Centre for engineering design and manufacturing in Ibadan, Nigeria. The center will be devoted among other engineering products, the design and manufacture of prototype agricultural machinery and implements to suit the local manufacture of agricultural machinery at national levels.

E. UNIDO-FAO COOPERATIVE ACTIVITIES

Continued co-operation between UNIDO and FAO has been initiated with special emphasis on development of agricultural machinery industry in Africa. The recent integrated mission and/or technical discussions on effective project implementation in a number of countries of Africa - example Algeria, Uganda, Ethiopia, etc.-- are some of the examples.

F. UNIDO PARTICIPATION IN AFRICAN AGRICULTURAL MACHINERY MEETINGS ORGANIZED BY OTHER INSTITUTIONS

- (i) Commonwealth Secretariat "Rural Technology Meeting (primarily agricultural tools and implements) for Central, Eastern and Southern Africa (29 Aug - 9 Sept. 1977, Arusha, Tanzania)
Botswana, Gambia, Kenya, Lesotho, Mauritius, Mozambique, Sierra Leone, Swaziland, Tanzania and Zambia.

- (ii) International Conference on Mechanization at Small Scale Farm Level in the humid tropics in West and Central Africa (June 2-10, 1980, Yaoundé, Cameroon) organized by Deutsche Stiftung für Internationale Entwicklung in Cooperation with CENESTA and GTZ.
- More than 20 developing countries of Africa participated.

The UNIDO proposed programmes in 1981-90 in Africa in general and during 1982-86 in particular in the field of agricultural machinery and implements taking into account the findings, analysis and recommendations of the above important activities.

SECTION V

AFRICA: TECHNICAL ASSISTANCE ACTIVITIES PROPOSED FOR
1982-86 UNDER UNDP IPF COUNTRY PROGRAMME FINANCES AND
OTHER SOURCES

I. COUNTRYWISE

- (i) The following is a list of project proposals submitted to the relevant Governments and Resident Representatives of the UNDP for consideration for implementation.

- (ii) The list A consists of proposed projects in 35 countries of Africa for consideration for implementation under UNDP IPF 1982-86 country programme cycle (Note: List B consists of proposed projects under non-IPF finances). The allocation of priority for projects for inclusion under 1982-86 country programme is primarily with the respective Governments of each developing countries of Africa, in consultation with the concerned UNDP Resident Representatives. It is to be printed out that the following projects are proposed based on UNIDO's past activities, experience, consultations with Government officials, SIDFAs and Resident Representatives and other knowledgeable individuals in each country. Therefore, 1982-86 proposed projects are to be regarded as integrated practical action programmes for development of agricultural machinery sector in each country.

- (iii) Therefore, it is UNIDO's anticipation that the Governments of each developing country of Africa will allocate a priority for this important sector. It is also UNIDO's hope that the respective Governments through interministerial inter-action (Ministry of Industry, Ministry of Agriculture, Ministry of Planning and Ministry of Finance) will not only allocate a priority for development of this sector from a national economy point of view, but also allocate a modest necessary finances from their country programme 1982-86 IPF cycle for implementation of these projects.

- (iv) For a developing country of Africa UNIDO has not yet proposed any projects for 1982-86 cycle. UNIDO will be pleased to advise and assist - at the request of the Governments - to elaborate a programme based on UNIDO's past experience, present status and future needs.
- (v) UNIDO is ready to advise and assist the Governments and the office of the UNDP Resident Representative in further elaboration of the project through preparatory 1981/82 activities and implement the projects during 1982-86. However, the most important priority action needed now is the inclusion of these projects under UNDP IPF country programme 1982-86 cycle.

LIST A

Projects proposed for 1982-86 IPF country programme
cycle at national level

- Algeria (agricultural machinery techno-economic programme network 1982: preparatory work \$ 177,400 and 1982-86: project implementation \$ 7.956 million)
- Angola Engineering Centre on Development of Technology and Rationalization of manufacturing capabilities of agricultural machinery industries (\$ 1.813 million)
- Benin (i) Manufacture of silos \$ 800,000
(ii) Assistance to COBEMAG agricultural machinery \$ 600,000
- Botswana: Assistance to Botswana Development Corporation: Establishment of a pilot plant for simple agricultural machinery (\$ 405,000)

- Burundi: -
- Cameroon: Assistance to the Ministry of Agriculture:
Integrated engineering development and pilot
manufacture of simple agricultural tools and imple-
ments (CEENAMA-CAPME-SAR co-operation) \$ 800,000
- CAR: -
- Chad: -
- Comoros: Exploratory mission: pilot manufacture of hand tools and
promotion of training (\$ 21,000); follow-up pilot plant
may require around \$ 300,000.
- Congo P.R.: Assistance pour le développement et la promotion
du secteur des machines agricoles (\$ 950,000)
- Djibouti: -
- Egypt: Assistance to EIDDC: Agricultural machinery and
implements (design and entrepreneurship promotion
(\$ 300,000) project included in 1982-86 cycle
- Equatorial
Guinea: Establishment of a Repair and Maintenance Centre
(agricultural machinery - \$ 806,400)
- Ethiopia: (i) Water pumping technology for rural areas
(manufacturing extension and training -
\$ 408,154)
- (ii) Development and manufacture of improved farm
implements (UNIDO - FAO project - \$ 3.12 million)

- Gabon: Technical Advisory unit for equipment purchase and engineering service for repair, maintenance and spare parts production (including agricultural machinery - \$ 2.968 million)

- Gambia: Assistance to the Ministry of Agriculture, CHAM and SECKA workshops. Integrated production of appropriate agricultural tools and implements (\$ 250,000)

- Ghana: (i) Engineering Centre on Development of Technology and Rationalization of Manufacturing Capacities of agricultural machinery industries (\$ 1.813 million)

(ii) Establishment of zonal workshop facilities, spare parts production and technical service (agricultural machinery and transport equipment (\$ 1.481 million)

- Guinea: Mechanical engineering workshop for repair and maintenance of industrial equipment (includes agricultural machinery and implements) phase II \$ 1.5 million

- Guinea-Bissau: Follow up on ongoing project DP/GBS/81/008 may be in the field of repair and maintenance

- Ivory Coast: -

- Kenya: Design and Technology Development Centre on agricultural machinery and implements (manufacturing promotion) \$ 1.384 million

- Libya: Assistance to the Ministry of Agriculture:
Strengthening of National Agricultural Machinery
Institution - applied R + D and manufacturing
promotion \$ 1.8 million
- Madagascar: Assistance pour le développement et la promotion
du secteur des machines agricoles (\$ 1.2 million)
- Malawi: Assistance to Ministry of Agriculture: Agricultural
machinery repair and maintenance, spare parts
production and simple implements fabrication
(\$ 991,000)
- Mali: Assistance technique et financière à l'EMAMA
(\$ 398,700)
- Mauritius: Pilot manufacturing plant hand tools \$ 900,000
- Morocco: -
- Mozambique: Assistance to the Ministry of Agriculture -
strengthening of national agricultural machinery
institutional applied R and D and commercialization
(\$ 1.5 million)
- Nigeria: (i) Nigerian Federal and States Network on rural
manufacture of low-cost agricultural equipment
suited to small and medium farms (\$ 3.425 million)
(ii) Establishment of zonal workshop facilities, for
repair and maintenance and production of simple
spare parts (\$ 1.481 million)
- Rwanda: -

- Sierra Leone: Assistance to National Workshop (includes basic facilities and production including agricultural tools and implements \$ 2.5 million)

- Sudan: Assistance to the Agricultural Machinery Agency: Promotion of applied R + D, manufacture and rural entrepreneurship development \$ 1.5 million

- Swaziland: Improvement of agricultural machinery manufacturing: Tinkabi Tractors (\$ 586 , 000)

- Tanzania:
 - (i) Manufacturing promotion of intermediate type low-cost agricultural machinery and implements with applied R + D and training (\$ 1.8 million)

 - (ii) Establishment of zonal workshop facilities, spare parts production and technical service (\$ 1.48 million)

 - (iii) Local manufacture of automotive components for motor vehicles, engines, motor cycles, tractors and trucks (\$ 862,000)

- Togo: Assistance to CNPPME: agricultural machinery production expansion and product diversification (\$ 800,000)

- Tunisia:
 - (i) Establishment of zonal workshop facilities, spare parts production and technical service (\$ 1.481 million)

 - (ii) Assistance to SONAM: strengthening of regional workshops at Jenbouba, Kef, and Silina in agricultural machinery field (\$ 1.068 million)

 - (Note: the above two projects may be combined into a single project).

- Uganda:
 - (i) Integrated manufacture of low cost agricultural tools, implements and machinery (\$ 3.1 million including \$ 396,500 preparatory assistance)
 - (ii) Assistance to the Ministry of Agriculture and Forestry: strengthening of repair and maintenance network of tractors, motors, engines and other agricultural machinery in rural areas (\$ 1.481 million)

- Upper Volta: Assistance for development and promotion of agricultural machinery industry sector (\$ 1.2 million)

- Zaire: Follow up on project DP/ZAI/80/007: (project formulation mission) of 1981. Possible project on agricultural machinery manufacturing development (\$ 1.0 million)

- Zambia: Integrated development of agricultural machinery industry: engineering design and development, manufacture of low cost tractor and intermediate machinery (\$ 1.2 million)

- Zimbabwe:
 - (i) Establishment of zonal workshop facilities - repair and maintenance, spare parts production and training (\$ 1.6 million)
 - (ii) Centre for Development and Manufacture of agricultural tools, implements and machinery for small farmers and promotion of rural manufacture (\$ 1.8 million)

LIST B

PROJECTS PROPOSED FOR 1982-86 UNDER NON-IPF FINANCES

(COUNTRY LEVEL)

At the request of the selected Governments concerned, UNIDO has prepared the following projects in 6 countries. The project proposals in 6 countries are discussed by UNIDO with appropriate donor countries for their interest to finances under their special contribution to the "United Nations Development Fund - UNIDF". It is to be noted that overall UNIDF finances are modest in magnitude and UNIDC will make every effort to promote interest of donor countries to participate in these projects through financial contribution.

- Algeria: (i) Algerian Agricultural Machinery Team visit to India (1982 \$ 29,000) (recommended financial allocation from national resources)

 (ii) Techno-economic workshop on tractor manufacture for selected countries (1982/83: \$ 132,000)

 (iii) Middle level agricultural machinery repair and maintenance training programme for selected African countries (1983/84 \$ 97,000)

- Gambia: Expansion of metal working industry in Gambia \$ 161,200 (note: UNIDO approaching possible donors; however, Government has not taken up a decision on this project since early 1980)

- Lesotho: Assistance to LNDC: Agricultural machinery pilot plant (\$ 133,300). UNIDO approaching possible donors

- Sudan: Assistance to foundry and mechanical workshop: water pump technology and development (\$ 500,000)

- Tanzania: Consolidation of the village production of agricultural implements by local blacksmiths, phase II (\$ 622,450)
- Togo: Establishment of an agricultural tractor repair and maintenance centre (\$ 250,000)

II. AFRICA SUB-REGION AND REGIONAL

- (i) List C gives the details on the potential and recommended projects at sub-regional and regional level as submitted to UNDP for consideration under regional 1982-86 IPF programme.
- (ii) Most of the projects recommended are based on UNIDO-ECA past activities in the sub-region/region.
- (iii) It is UNIDO-ECA anticipation that the Governments and sub-regional organizations will support these activities and request UNDP to allocate necessary finances.

LIST C

North Africa Region

Sudan, Libya, Algeria,
Tunisia, Morocco, Egypt,
Mauritius, etc

No subregional project proposed yet. There are possibilities for subregional complementarity in production, co-operation in engineering design and development

West Africa and

OCAM region

CAR, Mauritius, Rwanda,
Gabon, Togo, Benin, Niger,
Senegal, Upper Volta,
Ivory Coast, etc., including
OCAM countries

A Sub-regional project entitled "Appropriate technology and promotion of simple agricultural tools, animal drawn implements and manually operated equipment in selected developing countries of West Africa" was developed by UNIDO (\$ 1-2 million) for 1982-86. However, no IPF finances appears to be available.

Central and Sahel Region:

Upper Volta, Mali, Benin,
Mauritania, Niger, Senegal,
Chad, Gambia, Cape Verde, CAR,
Congo, Cameroon, Zaire, etc,
CILSS, CEAO, Sahel Institute,
UNSO, etc.

UNIDO has proposed following 3 projects for sub-regional IPF finances (i) Sahel: Development and local pilot manufacture of simple irrigation pumps in Sahelian countries (\$ 3.0 million); (ii) Sahel: Promotion of manufacture of agricultural tools, simple implements and manually operated equipment and regional training (\$ 2.0 million)

- (iii) Assistance to Sahel Institute in the training of technical personnel in the utilization and maintenance of irrigation equipment (\$ 1.07 million)

Eastern/Southern/
Central Africa
subregion

Lesotho, Botswana,
Tanzania, Uganda, Kenya,
Zambia, Zimbabwe, Zaire,
Congo, Malawi, etc.

The following project was proposed to UNDP NY for consideration and financing under 1982-86 regional IPF

A sub-area programme network on "Development and rural manufacture of low cost agricultural equipment suited to the needs of small and medium farmers in Central/Eastern and Southern Africa" (\$ 2.7 million).

It should be noted that this project was formulated by UNIDO based on its experience in the Africa region in general and East/Southern/Central region in particular. However, this has not been considered by UNDP NY for 1982-86 regional programme.

Africa Regional
including LDCs

It is difficult to design a practical regional project which will contribute and assist each of the countries in Africa in the most effective way. The following 3 projects are recommended

- (i) Establishment of an integrated repair, maintenance and training system in agricultural machinery and implements in a selected LDC of Africa with emphasis on regional training (\$ 2.0 - 3.0 million). This project is under discussion by UNIDO with a donor country for possible implementation during 1982-86 through UNIDF special purpose contribution finances
- (ii) UNDP-OAU-UNIDO co-operative programme on grain storage and post harvest technology equipment development (around \$ 2.0 million). Note: this project supported by ECOWAS and ECA was not considered in April 1981 by UNDP NY for 1982-86 IPF.

- (iii) Promotion of the development and manufacture of improved agricultural implements machinery and equipment (\$ 1.2 million)

This project has been proposed by ECA as a co-operative project with UNIDO and FAO to UNDP for 1982-86 IPF. This project consists primarily of studies and analysis through experts visiting various countries and promotion of exchange of information.

SUMMARY AFRICA - COUNTRYWISE UNIDO ACTIVITIES IN THE FIELD OF
AGRICULTURAL MACHINERY 1969 - 81/82 AND POTENTIAL 1982-86

Table 1

- Note: (i) no mark: completed projects and ongoing
(ii) * : official request received, but could not be implemented due to no allocation of appropriate finances (primarily IPF)
(iii) H : project documents/proposals submitted to the Government/Resident Representative Recommended for 1982-86 country programme cycle under IPF finances
(iv) ø : Project document / Proposal submitted to the Government/Resident Representative recommended for 1982-86 under non IPF resources

1	ALGERIA	1971 Project Formulation Mission, 1971/72 tractor and engines assistance, 1971/73 mobile workshop, *72/76 integrated repair and maintenance, 72/76 national design and development/adaptation, 1980-81: project formulation, H 1981: preparatory assistance, H 1981-86: project agricultural machinery techno-economic and engineering programme network ø 1982: Algeria Team visit to India ø 1982/83: Regional workshop on tractor manufacture ø 1983/84: Regional repair and maintenance training programme.
2	ANGOLA	1980: Project Formulation H 1982-86: engineering centre on agricultural machinery industries
3	BENIN	* 1971: Agricultural Machinery Feasibility Study * 1974: Agricultural Machinery Feasibility Study 1975: Feasibility Study: silos, * 1977: Manufacturing plant for silos, 1980: preparatory mission silos, H 1982-86: silo manufacturing plant, H 1982-86: Assistance to COBEMAG Agricultural implements
4	BOTSWANA	* 1977-81: Assistance to B.D.C: Agricultural machinery pilot plant, Recommended for inclusion under 1981-86 agricultural implements
5	BURUNDI	1971: Manufacturing feasibility study, * 1972-76 pilot plant

6	CAMEROON	1978: exploratory mission, * 1979: popularization of agricultural implements H 1980: Assistance to CENEEMA, H 1982-86: Assistance to Ministry of Agriculture (CENEEMA-CAPME-SAR integrated agricultural machinery development and manufacture
7	CAPE VERDE	none
8	CENTRAL AFRICAN REPUBLIC	1971: exploratory mission, * 1971 pre-investment study, H 1977-81: expansion of workshop, R + M facilities
9	CHAD	1971: exploratory mission, * 1971-75: Manufacture of agricultural implements, 1977-81: assistance to SOMAT: pumps and allied item production
10	COMOROS	H 1982-86: Exploratory mission: pilot manufacture of hand tools and promotion of training (\$ 21,000). The follow up pilot plant may require \$ 300,000.
11	CONGO	1974: Feasibility mission, 1974-77: integrated development 1980: R + M advise and programme development, H 1982-86: integrated agricultural machinery development and manufacture

12	DJIBOUTI	-
13	EGYPT	1970: Repair and maintenance; 1972-76: integrated repair and maintenance; 1981-82: agricultural machinery (design and entrepreneurship promotion)
14	EQUATORIAL GUINEA	1982-86: Establishment of R + M Centre (Agricultural machinery)
15	ETHIOPIA	1972: Production and marketing; 1977-81: water pumping equipment and technology development; 1980: agricultural machinery mission; / 1982-86: water pumping technology (production), / 1982-86: development and manufacture of improved farm implements
16	GABON	/ 1982-86: Technical Advisory Unit for equipment purchase and engineering service for repair, maintenance and spare parts production (including agricultural machinery)
17	GAMBIA	1972: Manufacturing feasibility study, 1972-74: repair and maintenance, 1973 - 74: manufacture, *1972-76: assembly plant for ox-drawn implements, / 1981-86: assistance to Ministry of Agriculture and CHAM/SECKA workshops, / 1980-86: expansion of metal working industry
18	GHANA	* 1975-81: Design and development, / 1981-86: engineering centre for agricultural machinery, / 1981-86: zonal workshop for repair and maintenance of agricultural machinery etc.
19	GUINEA	1972-81: Mechanical workshop for repair and maintenance of industrial equipment (including agricultural machinery), / 1981-86: mechanical engineering workshop for repair and maintenance of industrial equipment (incl. agricultural mach. Phase II)
20	GUINEE-BISSAU	1981: repair and maintenance

21	IVORY COAST	* 1972: Agricultural machinery feasibility study, 1975: fellowship (training), * 1974-78: pilot manufacturing plant
22	KENYA	* 1974: assembly of tractors, 1975: feasibility study (wind mill/pump), 1976: prototype production (wind mill/pump), 1981: technical evaluation of low Hp tractor, / 1982-86: design and development and manufacturing promotion on agricultural machinery
23	LESOTHO	* 1977-81: assistance to LNDC: Agricultural machinery, 1979: feasibility study, \emptyset 1981-86: assistance to LNDC: agricultural machinery
24	LIBERIA	-
25	LIBYA	* 1972: feasibility study tractor, 1976: feasibility study (engines and pumps, / 1982-86: agricultural machinery applied R + D and manufacture
26	MADAGASCAR	1972: feasibility study, * 1974-76: agricultural machinery and implements development, / 1982-86: assistance pour le developpement et la promotion du secteur des machines agricoles
27	MALAWI	1972: feasibility study, * 1976: pilot plant, * 1977: assistance to MDC: pilot plant, / 1981-86: assistance to the Ministry of Agriculture: pilot manufacture, repair and maintenance
28	MALI	* 1977: rehabilitation of Government workshop, 1981: assistance to l'EMAMA, / 1982-86: assistance to l'EMAMA: SIKASSO
29	MAURITANIA	-

30	MAURITIUS	1972: feasibility study, * 1972-76: hand tools factory, / 1982-86: pilot plant hand tools
31	MOROCCO	1972: feasibility study mission, * 1974-77: agricultural machinery repair and maintenance, / 1982-86: NIL at present
32	MOZAMBIQUE	/ 1982-86: agricultural machinery applied R + D and commercialization
33	NAMIBIA	-
34	NIGER	* 1974: SONIFAME: pilot manufacture and R + M, * 1977-80: SONIFAME: product diversification and applied development, / 1981-86: NIL at present
35	NIGERIA	* 1974: pilot manufacture and repair and maintenance, / 1981-86: Nigerian federal and states network on rural manufacture, / 1981-86: zonal workshop facilities for repair and maintenance
36	RWANDA	* 1974: pilot manufacture, * 1977: rural manufacture of hoes and other simple implements, / 1981-86: NIL at present
37	SENEGAL	1976: development of small tractor (analysis), 1978: small tractor manufacture (analysis) 1979: repair and maintenance - pumps, 1980: small tractor development (project implementation suspended for present), / 1982-86: NIL at present

38	SEYCHELLES	-
39	SIERRA LEONE	/ 1982-86: assistance to national workshop
40	SOMALIA	* 1977: pilot manufacture, / 1981-86: assistance to agricultural machinery agency, ø 1982-86: wind mill/irrigation pump development
41	SUDAN	1972: Feasibility study mission (UNIDO-FAO), 1973: manufacturing feasibility study mission (UNIDO-FAO), 1974: sesame harvesting, * 1974: Agricultural machinery integrated design and development and manufacture, 1976: tractor manufacture analysis, * 1977-81: pilot manufacture of animal drawn implements and tools, * 1977-81: assistance to directorate of agricultural engineering: agricultural machinery development and adaptation, engineering unit, * 1977: technical advisory team for tractor assembly plant, / 1981-86: assistance to agricultural machinery agency: manufacturing of low cost agricultural implements
42	SWAZILAND	1975: small tractor production advisory services, 1977: project formulation, 1978: small tractor development study, / 1982-86: improvement of agricultural machinery manufacturing: Tinkabi Tractors

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43	TANZANIA	<p>1972: Market survey, 1972: Repair and maintenance (mobile units), * 1973-76: Production and marketing, 1975: repair and maintenance (fellowships). *1975: design and development, 1975: repair and maintenance Phase II, 1975: agricultural machinery survey, * 1976-80: Repair and maintenance, * 1976: prototype workshops, * 1977-81: village workshops network, 1980-81: consolidation of village blacksmiths, / 1981-86: manufacturing promotion of low cost agricultural machinery, 1981-86: zonal workshops, / 1982-86: consolidation of village blacksmiths phase II, / 1982-86: ancillary industry development (automotive, tractors, engines etc).</p>
44	TOGO	<p>*1973: manufacturing feasibility study, 1979: repair and maintenance, 1980-81: CNPPME: Agricultural implements, / 1982-86: R + M centre, / 1982-86: CNPPME: agricultural implements (Phase II)</p>
45	TUNISIA	<p>/ 1982-86: zonal workshops, / 1982-86: assistance to SONAM: agricultural machinery</p>
46	UGANDA	<p>* 1974: repair and maintenance and tractor hiring, * 1977: mechanical harvesting of agricultural crops, *1976-80: manufacture of low cost farm implements, / 1982-86: integrated development of low cost farm implements, / 1982-86: repair and maintenance network</p>
47	UPPER VOLTA	<p>* 1972: manufacturing feasibility study, *1974: small scale manufacture and repair and maintenance, * 1977: integrated development and manufacture of agricultural implements (OPEV), 1981: R + M study (tractors and equipment)</p>
48	ZAIRE	<p>* 1970: Manufacturing feasibility study 1973: re-organization of Yangambi agro-industrial complex, 1980: project formulation (programming), / 1982-86: NIL at present</p>

49	ZAMBIA	1972: Manufacturing rationalization study, / 1982-86: agricultural machinery design and development and manufacture (small tractors)
50	ZIMBABWE	/ 1982-86: Establishment of zonal workshop facilities: repair and maintenance, spare parts production and training, / 1982-86: Centre for development and manufacture of agricultural tools, implements and machinery for small farmers and promotion of rural manufacture

TABLE 2

SUMMARY AFRICA
AFRICA REGIONAL AND SUBREGIONAL UNIDO ACTIVITIES IN THE FIELD OF
AGRICULTURAL MACHINERY 1969 - 81/82
AND POTENTIAL 1982-86

<u>Sub-Region</u>	<u>Countries</u>	<u>Activities</u>
1. North Africa Region	Sudan, Egypt, Algeria, Morocco, Tunisia, Libya, and AFSAD/IDGAS (IDOAS) and IOAD member countries of North Africa	1971: subregional study on tractors, engines, etc., (project formulation); 1974-76: study on tractors, engines, etc.; 1976: project analysis; 1976: advisory mission on tractor industry development; / 1982-86: NIL at present
2. West Africa and OCAM region	CAR, Mauritius, Rwanda, Gabon, Togo, Benin, Senegal, Niger, Upper Volta, Ivory Coast	1976: UNIDO-OCAM-ECA mission; 1978: UNIDO-OCAM-ECA seminar on agricultural machinery; * 1978: promotion of agricultural machinery in OCAM countries; 1978: Tinkabi tractor regional workshop; * 1981-86: appropriate technology and pilot manufacturing network in the region.
3. Central and Sahel Region	Upper Volta, Benin, Mali, Mauritania, Congo, Cameroon, Niger, Zaire, Senegal, Chad, Gambia, Cape Verde (CILSS, CEAO, Sahel Institute, UNSO)	1975: Exploratory mission: Sahel, * 1975: Local manufacture of irrigation pumps etc.-Sahel, * 1975: local manufacture of simple agricultural implements-Sahel, 1981: pilot manufacturing of sprinkler irrigation (exploratory mission)-Sahel, 1981: agricultural machinery initial programming: Sahel, / 1982-86: pumps and irrigation equipment manufacture: Sahel (not approved by UNDP), / 1982-86: promotion of manufacture of tools, simple implements and manually operated equipment: Sahel (not approved by UNDP); / 1982-86: training in utilization and maintenance of irrigation equipment (not yet favourably considered by UNDP)

Note: For explanation: no mark, *, / and \emptyset please see table 1.

4 East Southern and Central
Africa Region

Lesotho, Botswana, Tanzania,
Uganda, Kenya, Zambia, Zaire,
Congo, Zimbabwe, Swaziland,
Malawi, etc., including
OCAM countries

5 Africa-regional
including LDCs

1970: UNIDO-ECA regional study, 1973: market survey: small tractors, 1972: manufacturing clinic for animal drawn implements, tools, (India: for LDCs) * 1975-79: pilot demonstration and regional training, 1975: promotion of low cost power tiller, 1976: manufacturing feasibility study in 3 LDCs, *1977-81: co-operative pilot manufacture and regional training, 1978: regional workshop on Tinkabi Tractor, ~~/~~ 1982-86: A sub-area programme network on development and rural manufacture of low cost agricultural implements suited to small and medium farmers of the region (not considered by UNDP NY for 1982-85 regional IPF)

*1973: low cost agricultural equipment, manufacture workshop, *1973: repair and maintenance (workshop), 1973: small tractor demand and specification analysis, *1975-76: manufacturing promotion of simple agricultural tools, implements and equipment in selected 10 LDCs, 1976: booklet on manufacture, * 1977-81: Centre for agricultural machinery design, adaptation and transfer of industrial technology, ~~o~~ 1981-86: establishment of an integrated repair and maintenance system in LDC, ~~/~~ 1981-86: UNDP-OAU-UNIDO co-operative programme on grain storage and post harvest technology equipment development (not considered by UNDP NY for 1982-86 regional programme), ~~/~~ 1982-86: promotion of the development and manufacture of improved agricultural implements and machinery (studies and analysis) - an ECA project in co-operation with UNIDO and FAO. UNDP NY reaction being awaited).

TABLE 3

Africa countrywise 1969-81/1982-86

Number of projects completed, could not be started (lack of finance) and proposed (pipeline) and financial magnitude - agricultural machinery and implements

Country	total proposed ^{1/}	completed and ongoing	no finances ^{2/}	pipeline 1982-86 ^{3/}
1 Algeria	11	4 US \$ 175,000	2 US \$ 2.6 million	5 US \$ 8.3 million IPF + cost sharing
2 Angola	2	1 US \$ 5,000	-	1 US \$ 1.8 million
3 Benin	6	2 US \$ 24,000	2 US \$ 276,000	2 US \$ 1.3 million
4 Botswana	2	-	1 US \$ 405,000	1 US \$ 405,000
5 Burundi	2	1 US \$ 6,000	1 US \$ 250,000	-

Note: ^{1/} These include projects during 1970-80 and these proposed under UNDP 1982/86 IPF country programme.

^{2/} During 1970-80 these were prepared and forwarded primarily at the request of the Governments. However, could not start implementation as no finances - primarily IPF finances under 1st country programme cycle 1972-76 and 2nd country programme cycle 1976-81 were allocated by Government and UNDP.

^{3/} During 1980/81 these are proposed and recommended to the Governments, based on UNIDO analysis and Government's preliminary interest and it is UNIDO's hope that Governments concerned and UNIDO will give priority and include under 3rd country programme 1982-86 IPF finances.

6	Cameroon	3	-	2 US \$ 40,000	1 US \$ 800,000
7	CAR	3	1 US \$ 2,000	1 US \$ 13,680	1 US \$ 200,000 (1977-81)
8	Chad	3	1 US \$ 2,000	1 US \$ 600,000	1 US \$ 300,000 (1977-81)
* 9	Congo	4	3 US \$ 607,000	-	1 US \$ 950,000
10	Egypt	3	2 US \$ 337,000	-	1 US \$ 300,000
11	Eq. Guinea	1	-	-	1 US \$ 806,400
12	Ethiopia	5	1 US \$ 160,000	2 US \$ 51,000	2 US \$ 3.52 million
* 44	Comoros	1	-	-	1 US \$ 21,000 (exploratory) around US \$ 300,000 (follow up)

13	Gabon	1	-	-	1 US \$ 2.968 million
14	Gambia	9	6 US \$ 231,000	2 US \$ 550,000	1 US \$ 161,000
15	Ghana	3	-	1 US \$ 515,000	2 US \$ 3.2 million
16	Guinea	2	1 (ongoing) US \$ 537,400	-	1 US \$ 1.5 million
17	Guinea Bissau	1	1 (ongoing) US \$ 33,200	-	-
18	Ivory Coast	3	1 US \$ 2,350	2 US \$ 316,000	-
19	Kenya	5	3 US \$ 176,000	1 US \$ 37,800	1 US \$ 1.38 million

20	Lesotho	3	US \$ 1 13,500	US \$ 1 350,000	US \$ 1 133,300
21	Libya	3	US \$ 1 16,350	US \$ 1 15,000	US \$ 1 1.8 million
22	Madagascar	3	US \$ 1 18,200	US \$ 1 450,000	US \$ 1 1.2 million
23	Malawi	4	US \$ 1 9,100	US \$ 2 670,000	US \$ 1 991,000
24	Mali	3	US \$ 1 57,000	US \$ 1 442,000	US \$ 1 398,700
25	Mauritius	3	US \$ 1 3,300	US \$ 1 250,000	US \$ 1 900,000
26	Morocco	2	US \$ 1 16,000	US \$ 1 39,150	-
27	Mozambique	1	-	-	US \$ 1 1.5 million

28	Niger	2	-	US \$ 600,000 ²	-
29	Nigeria	3	-	US \$ 500,000 ¹	US \$ 4.9 million ²
30	Rwanda	2	-	US \$ 1.1 million ²	-
31	Senegal	4	US \$ 190,000 ⁴	-	-
32	Sierra Leone	1	-	-	US \$ 2.5 million ¹
33	Somalia	3	-	US \$ 950,000 ¹	US \$ 1.312 million ²
34	Sudan	9	US \$ 66,000 ⁴	US \$ 1.44 million ⁴	US \$ 1.5 million ¹
35	Swaziland	4	US \$ 24,000 ³	-	US \$ 586,000 ¹

36	Tanzania	14	US \$ 565,000 ⁶	US \$ 1.15 million ⁴	US \$ 4.6 million ⁴
37	Togo	5	US \$ 232,000 ²	US \$ 15,000 ¹	US \$ 1.05 million ²
38	Tunisia	2	-	-	US \$ 2.48 million ²
39	Uganda	5	US \$ 274,000 ¹	US \$ 259,000 ²	US \$ 4.5 million ²
40	Upper Volta	5	US \$ 23,000 ¹	US \$ 566,000 ³	US \$ 1.0 million ¹
41	Zaire	3	US \$ 97,500 ²	US \$ 16,000 ¹	-
42	Zambia	2	US \$ 18,000 ¹	-	US \$ 1.2 million ¹
43	Zimbabwe	2	-	-	US \$ 3.4 million ²

TABLE 4

AFRICA SUBREGIONALWISE AND REGIONAL 1969-81/1982-86
 Number of projects completed , could not be started (lack of finance) and proposed (pipeline)
 and financial magnitude - agricultural machinery and implements

Country	total proposed ^{1/}	completed and ongoing	no finances ^{2/}	pipeline 1982-86 ^{3/}
Africa North Region	5	5 US \$ 85,000	-	-
Africa West and OCAM region	5	3 US \$ 138,000	1 US \$ 340,000	1 US \$ 1-2 million
Central/West and Sahel Region	8	3 US \$ 103,000	2 US \$ 4.5 million	3 US \$ 6.0 million

Note: ^{1/} These include projects during 1970-80 and these proposed under UNDP 1982/86 IPF country programme.

^{2/} During 1970-80 these were prepared and forwarded primarily at the request of the regional intergovernmental organizations. However, could not start implementation as no IPF finances - primarily IPF finances under 1st country programme cycle 1972-76 and 2nd country programme cycle 76-81 were allocated by regional intergovernmental organizations and UNDP.

^{3/} During 80/81 these are proposed and recommended to the regional intergovernmental organizations, based on UNIDO analysis and regional intergovernmental organizations' preliminary interest and it is UNIDO's hope that the regional intergovernmental organizations concerned and UNIDO will give priority and include under 3rd country programme 1982-86 IPF finances.

East/Southern/Central African Region	9
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Africa Regional including LDCs	8
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US \$ 172,300⁵

US \$ 1.46 million³

US \$ 2.7 million¹

US \$ 30,000²

US \$ 910,000³

US \$ 5.2 million³

ANNEX A

COUNTRYWISE UNIDO ACTIVITIES IN AGRICULTURAL

MACHINERY IN AFRICA (1968 - 1981) AND

PROPOSED (1982-86) ACTIVITIES

- Algeria	page A - 1
- Angola	A - 12
- Benin	A - 14
- Botswana	A - 20
- Burundi	A - 21
- Cameroon	A - 23
- C.A.R.	A - 26
- Chad	A - 29
- Comoros	A - 31(A)
- Congo	A - 32
- Egypt	A - 36
- Equatorial Guinea	A - 39
- Ethiopia	A - 40
- Gabon	A - 45
- Gambia	A - 46
- Ghana	A - 55
- Guinea	A - 58
- Guinea Bissau	A - 60
- Ivory Coast	A - 61
- Kenya	A - 64
- Lesotho	A - 69
- Libya	A - 72
- Madagascar	A - 75
- Malawi	A - 78
- Mali	A - 82
- Mauritius	A - 85
- Morocco	A - 88
- Mozambique	A - 90
- Niger	A - 91
- Nigeria	A - 93

- Rwanda	page A - 98
- Senegal	A - 100
- Sierra Leone	A - 104
- Somalia	A - 105
- Sudan	A - 108
- Swaziland	A - 117
- Tanzania	A - 121
- Togo	A - 135
- Tunisia	A - 140
- Uganda	A - 142
- Upper Volta	A - 148
- Zaire	A - 153
- Zambia	A - 156
- Zimbabwe	A - 158

The project list is not necessarily exhaustive. It gives an indication of the magnitude of activities initiated

ANNEX B

Africa sub-regional and regional activities in
agricultural machinery (1968-81) and proposed
(1982-86) activities

1. North African Region A 160
2. West Africa and OCAM A 165
 region
3. Central and Sahel A 170
 region
4. Eastern/Southern/
 Central Region A 178
5. Africa Regional A 189
 including LDCs

The project list is not exhaustive; it gives an indication of the magnitude of the activities initiated.

- 1) Country: ALGERIA
- 2) Project No.: File OA 220 ALG (II) SIS
- 3) Project Title: Agricultural machinery project formulation mission
- 4) Amount: US \$ 1,800
- 5) The year it started 1970
- 6) a) completed or ongoing completed in 1970
b) pipeline
- 7) Objectives:
H.Q. staff mission on development of agricultural machinery (design, manufacture, repair and maintenance)
- 8) Remarks: Follow up project proposal on design and development (6 m/m), repair and maintenance (16 m/m), manufacture (18 m/m) and commercialization (12 m/m). Total US \$ 180,000 could not be implemented due to non allocation of UNDP-IPF finances during 1972-76.

- 1) Country: ALGERIA
- 2) Project No.: ALG-18 file OA 420 ALG (2)
- 3) Project Title: Production programming - tractors and engine factory (SONACOME)
- 4) Amount: US \$ 12,000
- 5) The year it started 1971
- 6) a) completed or ongoing completed in 1972
b) pipeline
- 7) Objectives:
To assist in rationalization of production plans
- 8) Remarks: Programmes for engineering design and development and repair and maintenance were recommended and appropriate projects submitted to the Government.

- 1) Country: ALGERIA
- 2) Project No.: VC/ALG/69/006 and IS/ALG/72/810
- 3) Project Title: Agricultural machinery repair shop and mobile units
- 4) Amount: US \$ 146,000
- 5) The year it started: 1972
- 6) a) ~~completed~~ or ongoing
b) pipeline completed
- 7) Objectives:
To develop a pilot demonstration programme on mobile repair and maintenance system.
- 8) Remarks: a national programme on repair and maintenance proposed to the Government

- 1) Country: ALGERIA
- 2) Project No.: IS/72/1669 - ALG (4), UNDP ALG/72/810
- 3) Project Title: Assistance to SONACOME for formulate agricultural machinery design, development and technical service facilities
- 4) Amount: US \$ 15,500 for preparatory work and around US \$ 1.0 million for project
- 5) The year it started: proposed for 1972
- 6) a) completed or ongoing - not completed
b) pipeline
- 7) Objectives:

To analyse and work out details on an integrated project on agricultural machinery design and development
- 8) Remarks: The SIS finance was not approved by UNDP and therefore the project and programme could not be implemented.

- 1) Country: ALGERIA
- 2) Project No.: SIS
- 3) Project Title: Assistance to ONAMA: Development and implementation of integrated national repair and maintenance programme
- 4) Amount: US \$ 15,000 (preparatory) around US \$ 1.2 million for the project
- 5) The year it started proposed to be 1972/73
- 6) a) completed or ongoing
b) pipeline not completed
- 7) Objectives:

To develop a programme including network of workshops, training, inventory of spares and organizational aspects.
- 8) Remarks: As no appropriate finances were allocated, this project could not be implemented.

- 1) Country: ALGERIA
- 2) Project No.: RB
- 3) Project Title: Project formulation missions (UNIDO HQ)
2 missions
- 4) Amount US \$ 15,000
- 5) The year it started: 1980
- 6) a) completed or ong
b) pipeline completed
- 7) Objectives:

Two missions during April 1980 and February 1981 at the request of the Government to analyse and formulate an integrated project for implementation under 1982-86 IPF cycle.
- 8) Remarks: An integrated project entitled "Agricultural machinery techno-economic and engineering programme network" (US \$ 177,400 preparatory assistance and US \$ 7.956 million for project) has been submitted and is under negotiations with UNDP and the Government for inclusion under IPF 1982-86 cycle.

- 1) Country: ALGERIA
- 2) Project No.: DP/ALG/80/XXX
- 3) Project Title: Preparatory Assistance in establishing of agricultural machinery techno-economic and engineering programme network
- 4) Amount: US \$ 177,400
- 5) The year it started proposed to start in 1981
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:
- Development Objective: Achievement of self-sufficiency in food production and harmonization of national agricultural machinery industry sector with national needs for mechanization, utilization and organization and management of agricultural sector and allied other industrial sectors by means of introduction of integrated problem solving approaches with emphasis on intermediate solutions giving sufficient time for formulating long term guidelines and permanent mechanisms.
- Immediate Objectives: Preparation of establishment of institutional framework for developing and implementing four interlinked programmes of network programme on a pilot basis with utilizing most of the existing institutional facilities;
- Evaluation of existing experience and preparing guidelines on intermediate policy decisions on various aspects of agricultural machinery at national level;
- Formulation of basic structure for a permanent institutional mechanism for promotion of agricultural machinery sector in Algeria;
- Preparation of the draft terms of reference for four interlinked programmes for sub-contractors;
- Initiating necessary actions for the start-up of the large-scale project;
- 8) Remarks: Project supported by Government/ResRep and under consideration for financial approval under 1982/86 IPF cycle. A - 7

- 1) Country: ALGERIA
- 2) Project No.: DP/ALG/80/XXX (provisional ALG/79/012)
- 3) Project Title: Agricultural machinery techno-economic and engineering programme network
- 4) Amount: US \$ 7.956 million

5) The year it started proposed for 1981/82

- 6) a) completed or ongoing pipeline
b) pipeline

7) Objectives:

Development of a national integrated mechanism to analyse, develop, promote, monitor and co-ordinate agricultural machinery sector, through continuous interrelationship between the Ministry of Heavy Industry and the Ministry of Agriculture and SONACOME and ONAMA. In development of this programme of action incorporating the following elements are envisaged:

- policy, planning and co-ordination
- repair and maintenance, spare parts manufacture and training
- engineering design, development, adaptation and evaluation
- manufacturing rationalization
- documentation and information dissemination

8) Remarks: project supported by Government/ResRep and under consideration for financial approval under 1982/86 IPF cycle.

- 1) Country: ALGERIA REGIONAL
- 2) Project No.:
- 3) Project Title: Algerian Agricultural Machinery Team Visit to India:
Technical consultations and exchange of experience
(A Government of Algeria-UNIDO-Government of India
co-operative programme)
- 4) Amount: US \$ 29,000
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing pipeline yet
b) pipeline
- 7) Objectives:
Development Objectives: To promote exchange of experience and sharing
in the field of agricultural machinery between
these two developing countries and formulating guidelines on similar
future activities.
Immediate Objectives: To organize a visit of seven senior technical per-
sonnel of the Government of Algeria to India
for a period of two weeks to obtain first-hand information on various
aspects of agricultural machinery development in India; share experience;
and promote co-operative programmes.
- 8) project developed as a result of 1980 mission. The project under
consideration by the Government and allocation of necessary finances

- 1) Country: ALGERIA (REGIONAL/INTERREGIONAL)
- 2) Project No.:
- 3) Project Title: Tractor and Agricultural Machinery Manufacture:
Alternatives and problems - Algerian experience:
Techno-economic Workshop in Algeria for selected
developing countries (A Government of Algeria - UNIDO
co-operative programme)
- 4) Amount: US \$ 132,840
- 5) The year it started proposed for 1982/83
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:
Development Objectives: To provide an opportunity for the developing countries to know more about alternative strategies/planning/production technologies in local manufacture of tractors and agricultural machinery through significant investment and licensing programmes.
Immediate Objectives: To organize a techno-economic workshop in Algeria with the participation by about ten appropriate developing countries and discuss the problems and alternatives of tractor and agricultural machinery local manufacture with reference to the experience of other developing countries who have also achieved such a manufacturing programme in general and the experiences of Algeria in particular.
- 8) Remarks: Project developed as a result of 1980 mission. The project is under consideration by the Government of Algeria for approval and allocation of necessary finances.

- 1) Country: ALGERIA (REGIONAL)
- 2) Project No.:
- 3) Project Title: Middle level agricultural machinery repair and maintenance training programme in Algeria for selected french speaking developing countries of Africa
- 4) Amount: US \$ 97, 000
- 5) The year it started proposed for 1983/84
- 6) a) completed or ongoing pipeline
b) pipeline
- 7) Objectives:
Development Objectives: To provide an opportunity for developing countries to share their experience in the field of agricultural machinery and implement sector; and establish a permanent training activity in Algeria for other developing countries.
Immediate Objectives: To organize a modest integrated repair and maintenance training programme for 6 French speaking developing countries in Algeria on a pilot demonstration basis.
- 8) Project developed as a result of 1980 mission. The project is under consideration by the Government of Algeria for approval and allocation of necessary finances.

- 1) Country: ANGOLA
- 2) Project No.: DP/ANG/80/004
- 3) Project Title: Engineering Centre on Development of Technology and Rationalization of Manufacturing Capacities of Agricultural Machinery Industries
- 4) Amount: US \$ 1,813,120
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:
- Development Objectives: To increase agricultural production and labour productivity by means of the manufacturing and introduction in agriculture of high quality and relatively low cost agricultural machinery and implements.
To develop national technology capabilities in design and engineering and the manufacture of prototypes for more sophisticated machinery and equipment.
Achieve efficient industrialization, improved agricultural production and a saving in foreign exchange.
- Immediate Objectives: To assist local enterprises in manufacturing high quality and relatively low cost agricultural machinery and implements by means of providing them with:
- drawings of agricultural machinery, implements, prototypes and non-standard technological equipment;
 - technology of production;
 - specifications of materials, components and standard technological equipment.
- To develop national engineering capability in manufacturing high quality and relatively low cost agricultural machinery and implements by means of training local engineers, technicians and workers.
To establish quality control system.
- 8) Remarks: The project is under consideration for inclusion under 1982-86 IPP cycle.

- 1) Country: BENIN
- 2) Project No.: SIS/DAH/71/513
- 3) Project Title: Agricultural machinery manufacturing feasibility study
- 4) Amount: US \$ 16,000
- 5) The year it started - was to start in 1972
- 6) a) completed or ongoing
b) pipeline The Government request of 1972 could not be implemented due to lack of SIS finances.
- 7) Objectives:
To conduct indepth analysis
- 8) Remarks: Project was also not implemented due to non inclusion under country programme and allocation of SIS finances.

- 1) Country: BENIN
- 2) Project No.: File 321 DAH-10
- 3) Project Title: Agricultural implements and tools - manufacturing feasibility study
- 4) Amount: US \$ 10,000
- 5) The year it started was to start in 1974
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:
To conduct techno-economic analysis
- 8) Remarks: This SIS request of the Government was not approved by UNDP in May 1973 and could not be implemented

- 1) Country: BENIN
- 2) Project No.: DP/BEN/71/513/11-05/B/12
- 3) Project Title: Assistance to local manufacture of silos for grain storage
- 4) Amount: around US \$ 20,000
- 5) The year it started 1975
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To assist SONAGRI and SONIAH through a techno-economic feasibility study on local manufacture
- 8) Remarks: The expert's report which detailed an investment project of around 190 MCFA (25,000 tons initial storage capacity to be ultimately extended by 10,000 tons/year over 7 years and initial production of 5,000 units of 1 and 5 tons silos) was presented to the Government and a US \$ 226,000 UNDP IPF project for assisting the project start up (assuming international project capital finances may be secured) was recommended. The Government requested a silo industry adviser, but no IPF finances were available. However, in 1978/79 Government requested short term assistance to re-study the whole project (TS/BEN/79/001)

- 1) Country: BENIN
- 2) Project No.: -
- 3) Project Title: Assistance to CPB - Establishment of a manufacturing plant for grain storage silos and other items
- 4) Amount: US \$ 250,000 (phase I)
- 5) The year it started was proposed to start in 1977
- 6) a) completed or ongoing - not started
b) pipeline
- 7) Objectives:

To assist in start up of a pilot project
- 8) Remarks: This project as a follow up of DP/DAH/71/513 and Government's priority interest (March 1976) and was submitted to the Government in mid 1976. However, this project was not included under 1977-81 IPF cycle.

- 1) Country: BENIN
- 2) Project No.: TS/BEN/79/001
- 3) Project Title: Preparatory mission: study on manufacture of silos for grain storage
- 4) Amount: US \$ 4,000
- 5) The year it started 1980
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To study relevance of various types of silos in Benin and recommend an integrated system of grain storage and detail a programme for local development/manufacture
- 8) Remarks: The report is under study by the Government. It is very essential that the Government/UNDP allocate around US \$ 800,000 million for the project implementation during 1981-86 IPF programme cycle.

- 1) Country: BENIN
- 2) Project No.: DP/DAH/80/XXX
- 3) Project Title: Assistance to COBEMAG - Agricultural machinery and implements manufacture
- 4) Amount: US \$ 600,000
- 5) The year it started recommended to start in 1982
- 6) a) completed or ongoing pipeline
b) pipeline
- 7) Objectives:

To assist COBEMAG to strengthen its production capabilities through engineering development, production technology and training
- 8) Remarks: The SIDFA's report of July 1981 has identified this project based on Government's interest. The Resident Representative's cable of August 1981 states allocation of US \$ 177,000 under UNDP IPF 1983-86 as a IInd priority reserve list. UNIDO has recommended priority I and allocation of US \$ 600,000 under 1982-86 IPF.

- 1) Country: BOTSWANA
- 2) Project No.: File OA 321 RAF 36
- 3) Project Title: Assistance to Botswana Development Corporation - establishment of a pilot manufacturing plant for local production of agricultural implements and simple engineering products
- 4) Amount: US \$ 405,000
- 5) The year it started proposed for 1977-81 IPF cycle
- 6) a) completed or on going - not initiated
b) pipeline
- 7) Objectives:

As a follow up of TF/RAF/74/009 Project this project was recommended. The objective is to develop entrepreneurship and promote local technical capabilities.
- 8) Remarks: Project submitted to the Government through UNDP on 3 May 1976 for inclusion under IPF. However, this project was not included for IPF financing.

- 1) Country: BURUNDI
- 2) Project No.: SIS-70/795 BDI (9)
- 3) Project Title: Agricultural machinery manufacturing feasibility study mission
- 4) Amount: US \$ 6,000
- 5) The year it started 1971
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To analyse demand and local manufacturing potential and recommend appropriate action
- 8) Remarks: The expert recommended a programme to manufacture 600,000 hoes/year by the Government in co-operation with a local manufacturer (Chanic). The follow up project could not be implemented due to non allocation of UNDP-IPF finances.

- 1) Country: BURUNDI
- 2) Project No.: -
- 3) Project Title: Assistance for expansion of agricultural implements
pilot plant - product diversification, quality
control and waining
- 4) Amount: US \$ 250,000
- 5) The year it started proposed to be from 1977
- 6) a) completed or ongoing - not started
b) pipeline
- 7) Objectives:

To assist the existing plant in product diversification
- 8) Remarks: This was a follow up of project STS/BUR/70/795 BUR-9 and
project concept submitted to Resident Representative and
Government in March 1976. But this project was not included
under 1977-81 IPF cycle.

- 1) Country: CAMEROON
- 2) Project No.: -
- 3) Project Title: Popularization of prototype of agricultural machinery developed by CENEEMA
- 4) Amount: US \$ 12,000
- 5) The year it started was to start in September 1979
- 6) a) completed or ongoing
b) pipeline not started yet
- 7) Objectives:

To assist CENEEMA in popularizing the agricultural machinery such as prototype of ox-carts, peanut hullers, palm presses, cocoa huskers planters etc., and promote commercial production
- 8) Remarks: Submitted to the Government for consideration in 1979, but not included for implementation under IPF finances or any other appropriate finances.

- 1) Country: CAMEROON
- 2) Project No.: -
- 3) Project Title: Assistance to CENEEMA in co-operation with CAPME and SAR: agricultural machinery and implements - local development and manufacture in rural areas.
- 4) Amount: US \$ 40,000
- 5) The year it started was to start in 1980
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:

To assist integrated development of engineering capabilities, entrepreneurship promotion, rural manufacture and training of appropriate agricultural machinery and implements
- 8) Remarks: This project was prepared based on UNIDO HQ staff mission in July 1979 and was submitted to the Government. The project was not included under IPF or requested under any other appropriate finances.

- 1) Country: CAMEROON
- 2) Project No.: -
- 3) Project Title: Assistance to the Ministry of Agriculture:
Integrated engineering development and pilot manu-
facture of simple agricultural tools and implements
(CEENAMA-CAPME-SAR co-operation)
- 4) Amount: US \$ 800,000
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:

To establish an interrelation between the Ministry of Agriculture
and Industry and promote engineering design, pilot manufacture,
rural entrepreneurship and training.
- 8) Rema ks: Recommended by UNIDO in September 1981 to SIDFA to discuss
with the Government and explore possibilities inclusion
under 1982-86 IPF CYCLE

- 1) Country: CENTRAL AFRICAN REPUBLIC
- 2) Project No.: SIS/70/930 CEAR-11
- 3) Project Title: Exploratory mission on repair and maintenance of agricultural machinery
- 4) Amount: US \$ 2,000
- 5) The year it started 1971
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To recommend ways and means of local production of simple tools and implements
- 8) Remarks: A follow up project was recommended by the expert. The project was requested by the Government and was submitted to UNDP.

- 1) Country: CENTRAL AFRICAN REPUBLIC
- 2) Project No.: SIS-70/1058 CEAF (13)
- 3) Project Title: Pre-investment study and formulation of a manufacturing project report
- 4) Amount: US \$ 13.680
- 5) The year it started - was to start in 1971
- 6) a) completed or ongoing
b) pipeline not initiated
- 7) Objectives:

To analyse demand, product specification, detail production volume and outline a manufacturing programme
- 8) Remarks: This project request of 1971 on strengthening an existing workshop and transformation into a pilot manufacturing and training project was not implemented due to non allocation of UNDP finances in 1972.

- 1) Country: CENTRAL AFRICAN REPUBLIC
- 2) Project No.: -
- 3) Project Title: Expansion of workshop facilities for agricultural machinery prototype production and repair and maintenance
- 4) Amount: US \$ 200,000
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing - not started
b) pipeline
- 7) Objectives:

This was a follow up of project CAF/74/004 and Government interest to expand workshop VCF-22.
- 8) Remarks: Following UNIDO-OCAM mission to CAF, this project concept was submitted to the Government in March 1976. However, this was not included under 1977-81 IPF finances.

- 1) Country: CHAD
- 2) Project No.: SIS-71/1187 CHAD (8)
- 3) Project Title: Agricultural machinery survey mission
- 4) Amount: US \$ 2,000
- 5) The year it started 1971
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To conduct an analysis on manufacturing potential
- 8) Remarks: The expert recommended establishment of 2-3 small manufacturing plants with common basic facilities and services. This follow up project could not be implemented due to non allocation of UNDP IPF finances.

- 1) Country: CHAD
- 2) Project No.: -
- 3) Project Title: Establishment of workshops for production and repair of agricultural tools and implements
- 4) Amount: US \$ around 600,000 large scale project
- 5) The year it started - was to start in 1972
- 6) a) completed or ongoing:
b) pipeline The project included in first draft country programme of 1971, but deleted in the final country programme of 1971-75.
- 7) Objectives:

To establish pilot demonstration workshops.

- 1) Country: CHAD
- 2) Project No.: -
- 3) Project Title: Assistance to SOMAT: Production of simple pumps and allied items
- 4) Amount: US \$ 350,000
- 5) The year it started proposed to start in 1977
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:

This project was a follow up of SIS/CHAD/71/1187 and RP/RAF/75/011 as per Government interest (Letter Feb. 1976) to diversify production
- 8) Remarks: This project concept was submitted to the Government in March 1976. However, this project was not included under UNDP 1977-81 IPF cycle.

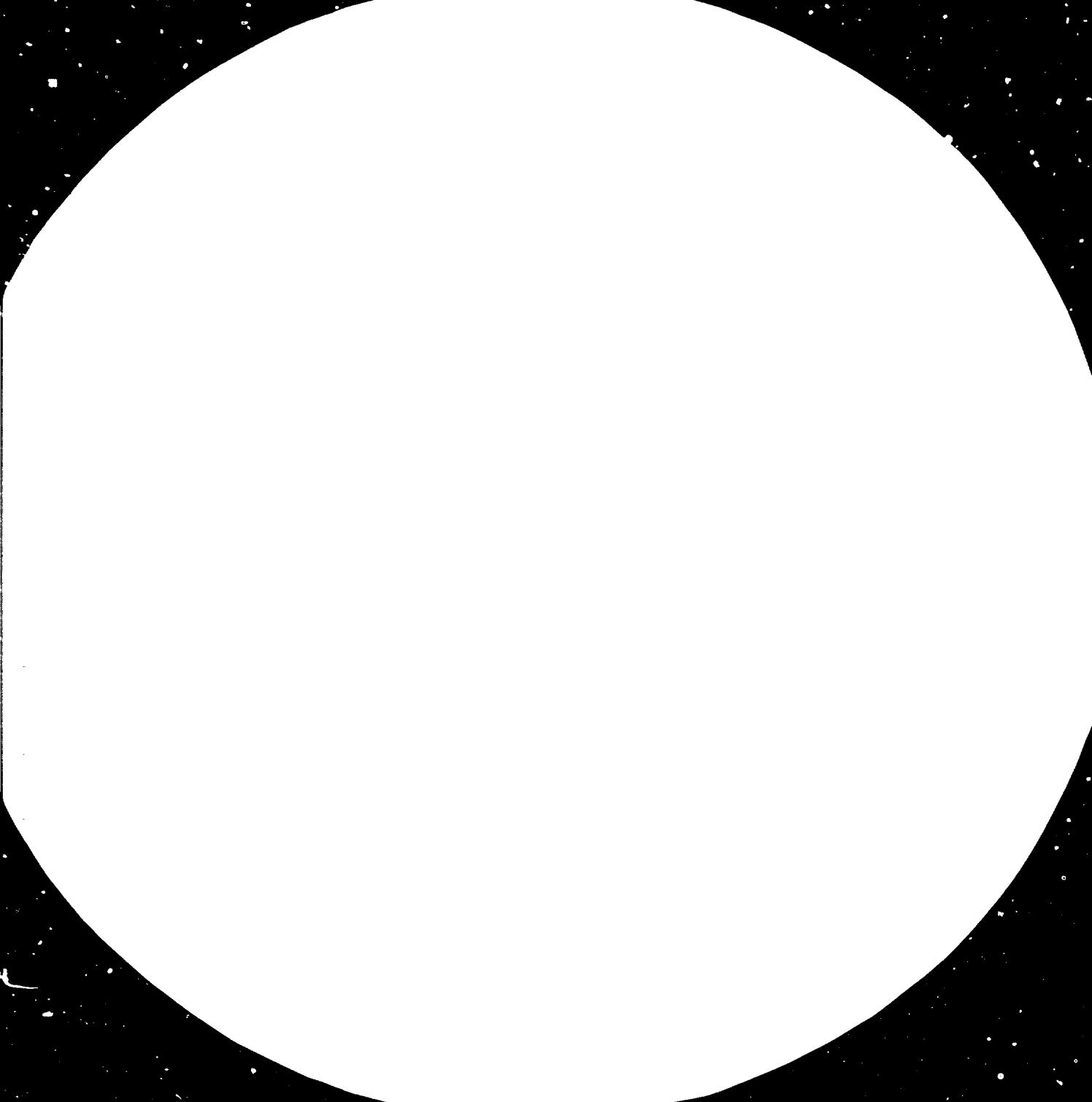
- 1) Country: COMOROS
- 2) Project No.: -
- 3) Project Title: Preparatory mission: pilot plant for hand tools and training
- 4) Amount: US \$ 21,000
- 5) The year it started proposed 1982
- 6) a) completed or ongoing
b) pipeline pipeline: 1982-86 country programme

7) Objectives:

To analyse the need for establishing a pilot plant for fabrication of hand tools and promote training

- 8) Remarks: This project was identified by UNIDO programming mission to Comoros in Mid 1979. The project document for this preparatory mission has been sent to UNDP and the Government in July 1979. UNIDO awaiting inclusion of preparatory assistance project and follow up pilot plant project under 1982-86 IPF.

- 1) Country: CONGO, PEOPLES REPUBLIC OF
- 2) Project No.: TS/PRC/73/002/A
- 3) Project Title: Elaboration of project concerning agricultural machinery
- 4) Amount: US \$ 2,500
- 5) The year it started 1974
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
Experts' study and recommendations on local development, manufacture and promotion of agricultural machinery.
- 8) Remarks: A large scale project document was prepared as requested by the Government





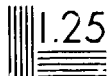
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W. S. KOPPEL, JR., Director, National Bureau of Standards, Washington, D. C. 20540

U. S. GOVERNMENT PRINTING OFFICE: 1965 O - 348-000

- 1) Country: CONGO (PR)
- 2) Project No.: TS/PRC/73/002 file 321 PRC-7
- 3) Project Title:
- 4) Amount: US \$ 588,700
- 5) The year it started 1974
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To promote integrated development of agricultural machinery industry

- 1) Country: CONGO PR
- 2) Project No.: DP/PRC/81/007/11-02
- 3) Project Title: Agricultural machinery repair and maintenance
- 4) Amount: US \$ 7,000
- 5) The year it started 1981
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To assist in formulation of a programme
- 8) Remarks: An integrated programme submitted to the Government

- 1) Country: CONGO PR
- 2) Project No.: -
- 3) Project Title: Assistance pour le developpement et la promotion
du secteur des machines agricoles
- 4) Amount: US \$ 950,000
- 5) The year it started proposed to start in 1982
- 6) a) completed or ongoing
b) pipeline pipeline proposed 1982-86 IPF
- 7) Objectives:
To assist in establishment of an integrated manufacture and R + M
training
- 8) Remarks: Under consideration by UNDP/Government

- 1) Country: EGYPT
- 2) Project No.: DP/EGY/70/002
- 3) Project Title: Maintenance and Repair
(Agricultural Research Station)
(preparatory assistance)
- 4) Amount: US \$ 3,326
- 5) The year it started 1970
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To develop an integrated R + M programme
- 8) Remarks: A large scale project implemented in 1972-76 IPF cycle.

- 1) Country: EGYPT
- 2) Project No.: DP/EGY/71/002
- 3) Project Title: Maintenance and repair (Agricultural Research Station)
- 4) Amount: US \$ 332,600
- 5) The year it started 1971
- 6) a) completed or ongoing
b) pipelins completed in 1972-76 cycle
- 7) Objectives:
Strengthening of physical facilities and training

- 1) Country: EGYPT
- 2) Project No.: -
- 3) Project Title: Local production of agricultural tools, implements and machinery (engineering development and entrepreneurship promotion)
- 4) Amount: US \$ 300,000
- 5) The year it started 1982
- 6) a) completed or ongoing included in 1982-86 cycle
b) pipeline
- 7) Objectives:

Development Objectives: To provide appropriate industrial inputs for effective and successful agricultural development. In this connection to provide locally produced appropriate simple agricultural tools and implements at an economic price level which the small farmers could afford.

Immediate Objectives: (i) To strengthen the engineering and industrial design development centre and existing small and medium engineering industries and embark upon an accelerated programme of production of appropriate agricultural tools, implements and machines.

(ii) To develop a rural demonstration, marketing and service system.

(iii) To train the local personnel in all aspects of production and marketing.

(iv) To assist in import substitution, and development of local engineering capabilities and technical competence.

1) Country Equatorial Guinea

2) Project No.

3) Project Title Establishment of a Repair and Maintenance Centre

4) Amount \$ 806.400

5) The year it started proposed for 1982

6) a) completed or ongoing
b) pipeline X pipeline

7) Objectives

To improve the productivity of the overall manufacturing sector by keeping capital equipment in service a greater portion of the time than at present.
To improve the output and productivity of the agricultural sector by preventing the breakdown of agricultural machinery, keeping it in production a greater percentage of the time.
To improve the effectivity of existing transportation and construction equipment.
To increase the level of national employment and especially to avoid unemployment due to equipment that is due to, breakdown.
To improve the country's foreign exchange position by reducing the need for excess imported capital equipment, spare parts and service labour.

- 1) Country: ETHIOPIA
- 2) Project No.: File OS 320 ETH
- 3) Project Title: Techno economic advice on production and marketing of agricultural machinery and tools
- 4) Amount: US \$ 36,000
- 5) The year it started - (was to be started in 1972)
- 6) a) completed or ongoing
b) pipeline The official request of 12. 1. 1972 could not be implemented due to lack of SIS finances
- 7) Objectives:
To develop a programme on rationalized production of appropriate hand tools and animal drawn implements
- 8) Remarks: This project was not included under First Country Programme Cycle and therefore could not be implemented by UNIDO.

- 1) Country: ETHIOPIA
- 2) Project No.: DP/ETH/77/013
- 3) Project Title: Research and development in water pumping technology for rural areas
- 4) Amount: - US \$ 160,000
- 5) The year it started 1977
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:

To develop a low cost hand operated water pump and promote local manufacture
- 8) Remarks: In co-operation with International Development Research Centre (IDRC) Canada, the Ethiopian Water Resources Authority (EWRA) and Technical University of Addis Ababa, an appropriate pump has been developed and locally manufactured. Manufacturing extension follow up project 1982-86 under consideration.

- 1) Country: ETHIOPIA
- 2) Project No.: DP/ETH/80/008
- 3) Project Title: Agricultural machinery UNIDO-FAO joint project development mission
- 4) Amount: US \$ 15,000
- 5) The year it started: 1980
- 6) a) completed or ongoing: completed
b) pipeline
- 7) Objectives:
To develop an integrated project
- 8) Remarks: An integrated project on "Development and manufacture of improved farm implements" prepared jointly by UNIDO and FAO is under consideration for 1982-86 IPF cycle.

- 1) Country: ETHIOPIA
- 2) Project No.: DP/ETH/80/~~XXX~~
- 3) Project Title: Water pumping technology for rural areas (manufacturing extension and training)
- 4) Amount: US \$ 408,154
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline pipeline
- 7) Objectives:
To promote local manufacture, training and entrepreneurship promotion
- 8) Remarks: Project under consideration for inclusion 1982-86 cycle.

- 1) Country: ETHIOPIA
- 2) Project No.: DP/ETH/80/XXX
- 3) Project Title: Development and Manufacture of Improved Farm implements. (UNIDO-FAO project)
- 4) Amount: US\$ 3,120,000
- 5) The year it started proposed for 1982-86 cycle
- 6) a) completed or ongoing
b) pipeline pipeline 1982-86 cycle
- 7) Objectives:
 1. To increase peasant productivity and agricultural production on small farms and agricultural co-operatives in Ethiopia, thus improving the living standards of the broad masses of the rural sector, as well as providing increased food supplies and raw materials for industries in the country.
 2. To develop a level of small-scale appropriate mechanization technology that is agronomically and socially suitable to the size of farms, farming systems, the knowledge and experience of the farmers in Socialist Ethiopia.
 3. To establish a viable investigational and research organization for developing and introducing low cost and more efficient farm implements and agricultural machinery for local manufacture.
 4. To manufacture locally improved prototypes field tested and acceptable agricultural machinery and implements to farmers requirements.
 5. To develop domestic engineering and technological capabilities, in the field of manufacturing design at product and workshop level within existing engineering establishments and units.
 6. In identifying the gaps of existing manufacturing facilities for the local manufacture in rural/small-scale co-operative sector and medium/large-scale public sector units for agricultural machinery and implements.
 7. On saving foreign exchange through greater import substitution.
 8. On creation of interlinkage and interlink development of farm implements for R&D activities and actual shop floor manufacture at industry level.
- 8) Remarks: Project under Government/UNIDO consideration for 1982-86 cycle

- 1) Country: GABON
- 2) Project No.:
- 3) Project Title: Technical Advisory Unit for Equipment Purchase and Engineering Services for Repair, Maintenance and Spare Parts Production including agricultural machinery
- 4) Amount: US \$ 2.968 million
- 5) The year it started July/August 1981
- 6) a) completed or ongoing Preparatory Assistance: 1981
b) pipeline Project Implementation: 1982-86
- 7) Objectives:
- Development Objectives: To enhance the techno-economic self-reliance potential of Gabon through appropriate measures, and to conserve foreign exchange, rationalize balance of payments and promote better utilization of imported equipment.
- Immediate Objectives: (i) To assist the Government of the Republic of Gabon to establish a technical advisory unit within the Ministry of Industry to (a) collect technical information; (b) analyse, and establish standardization and norms on various equipment and machinery that are to be imported; (c) render technical advice on product specifications, spare parts, inventory and import policies and to (d) monitor equipment import and utilization within the country with a view to provide guidance and technical services to achieve maximization of equipment utilization.
- (ii) And also to assist in establishing a repair, maintenance and spare parts production workshop and services to provide the necessary technical support to effective utilization of imported equipment.
- 8) Remarks: Under consideration for inclusion in the 1982-86 IPF CYCLE.

- 1) Country: GAMBIA
- 2) Project No.: SIS/71/1389 CAM (4)
- 3) Project Title: **Manufacturing/assembly of small agricultural machinery: study mission**
- 4) Amount: US \$ 6,840
- 5) The year it started 1972
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:

To analyse the need, elaborate product specification, estimate need and promote local manufacture
- 8) Remarks: The recommended followup projects on establishment of manufacturing units and expansion of existing workshops was not included in the UNDP programme cycle (IPF) and could not be implemented. Projects on pilot manufacture and R + M were prepared.

- 1) Country: GAMBIA
- 2) Project No.: File OA 321 GAM (2) (SIS + GTP)
- 3) Project Title: Organization and operation of repair and maintenance of agricultural machinery
- 4) Amount: US \$ 30,000
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Provision of mobile units and training on a pilot demonstration basis
- 8) Remarks: The follow up large scale recommended national project was not included in the UNDP Country Programme and could not be implemented

- 1) Country: GAMBIA
- 2) Project No.: VC/GAM/049/30.1.02
- 3) Project Title: Supplementary assistance for the establishment of pilot demonstration plant: agricultural implements
- 4) Amount: US \$ 9,600
- 5) The year it started 1973
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
Consultancy techno economic study on local manufacture of agricultural implements and tools.

- 1) Country: GAMBIA
- 2) Project No.: VC/GAM/73/006
- 3) Project Title: Demonstration Pilot Engineering Workshop
for Assembly and Manufacture of Agricultural
Tools
- 4) Amount: US \$ 129,000
- 5) The year it started 1974
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To provide initial assistance in strengthening of an existing
workshop and transform into a pilot plant
- 8) Remarks: Follow up basic finances were not included under IPF.

- 1) Country: GAMBIA
- 2) Project No.: VC/GAM/81/003 , IS/GAM/73/002
- 3) Project Title: Agricultural machinery and implements repair and maintenance mobile units
- 4) Amount: US \$ 49,700
- 5) The year it started 1974
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:

To provide mobile units, train local personnel and develop a pilot demonstration programme
- 8) Remarks: Follow up basic finances were not included under IPF.

- 1) Country: GAMBIA
- 2) Project No.: RP/GAM/74/001/A
- 3) Project Title: Agricultural machinery and implements - fellowships
- 4) Amount: US \$ 4,700
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
Training in agricultural machinery manufacture

- 1) Country: GAMBIA
- 2) Project No.: -
- 3) Project Title: Establishment of assembly plant for ox-drawn agricultural implements
- 4) Amount: large scale project US \$ 300,000
- 5) The year it started -
- 6) a) completed or ongoing
b) pipeline: The Government requested assistance in 1972. The project document submitted by UNIDO in late 1972. However, the project was not implemented due to non allocation of IPF finances during 1972-76.
- 7) Objectives:

To establish a pilot demonstration manufacturing plant with emphasis on training.
- 8) Remarks: The project was not implemented as 2nd country programme • 1976-81 also did not include this project.

- 1) Country: GAMBIA
- 2) Project No.: -
- 3) Project Title: Assistance to CHAM and SECKA metalworks:
production expansion and product diversification -
agricultural tools and simple engineering products
- 4) Amount: US \$ 250,000
- 5) The year it started proposed to start in 1977
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:

To establish a product adaptation unit and introduce appropriate
production technology and train local personnel
- 8) Remarks: This project was a follow up of projects IS/GAM/73/006, GAM/73/002,
VC/GAM/73/043 and RP/RAF/75/011. This project concept was
forwarded by UNIDO to the Government in March 1976.
However, this was not included under 1977-81 country programme
IPF cycle.

- 1) Country Gambia

- 2) Project No. JF/GAM/79/004

- 3) Project Title Expansion of the metal-working industry in
 the Gambia

- 4) Amount \$ 161,200

- 5) The year it started

- 6) a) completed or ongoing
- b) pipeline X

- 7) Objectives

To give the company a production capacity to contribute substantially to import substitution, particularly in the agricultural field, and also the trained management to utilize it effectively.

The expansion programme is designed to increase the range and output of the company's products, to provide training for Gambian managers, and to ensure that the application of the Government development loan is monitored, that the correct machines and equipment are bought, correctly installed and phased into the production programme in the correct manner.

- 1) Country: GHANA
- 2) Project No.:
- 3) Project Title: Assistance in Design and Development of Agricultural Implements and Machinery
- 4) Amount: US \$ 515,000
- 5) The year it started proposed to start in 1975
- 6) a) completed or ongoing
b) pipeline not initiated 1977-81 period
- 7) Objectives:
To assist the Ministry of Agriculture in co-operation with the Ministry of Industry to strengthen engineering design capabilities and assistance to Industry
- 8) Remarks: This project could not be initiated as this was not included under 1975-80 IPF country programme.

- 1) Country: GHANA
- 2) Project No.:
- 3) Project Title: Engineering Centre on Development of Technology and Rationalization of Manufacturing Capacities of Agricultural Machinery Industries
(Production of simple agricultural tools)
- 4) Amount: US \$ 1.813 million
- 5) The year it started March 1982 proposed
- 6) a) completed or ongoing recommended for 1982 - 86 cycle
b) pipeline
- 7) Objectives:
- Development Objectives: To increase agricultural production and labour productivity by means of the manufacturing and introduction in agriculture of high quality and relatively low cost agricultural machinery and implements.
To develop national technology capabilities in design and engineering and the manufacture of prototypes for more sophisticated machinery and equipment.
Achieve efficient industrialization, improved agricultural production and a saving in foreign exchange.
- Immediate Objectives: To assist local enterprises in manufacturing high quality and relatively low cost agricultural machinery and implements by means of providing them with:
- drawings of agricultural machinery, implements, prototypes and non-standard technological equipment;
 - technology of production;
 - specifications of materials, components and standard technological equipment.
- 8) Remarks: This project is under consideration by the Government for 1982-86 IPF cycle.

- 1) Country: GHANA
- 2) Project No.:
- 3) Project Title: Establishment of Zonal Workshop Facilities,
Spare Parts Production and Technical Service
(Repair and Maintenance of agricultural and road
equipment)
- 4) Amount: US \$ 1.481 million
- 5) The year it started March 1982
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:
Development Objectives: To assist in accelerated promotion of self-reliance in the less developed non-urban areas of the country and to provide a basic engineering infrastructure and technical facilities with a view to develop technical human resources, training, rural employment, utilization of local material, with emphasis on reducing the foreign exchange requirements for imports, and to bridge the industrial and technological gap between the regions within the country.
Immediate Objectives: Production of appropriate consumer and critical spare parts and components which are required for the community and to other industries;
Repair and maintenance activities to assist the various major infrastructure development sectors and existing/future industries;
Training of local technical personnel.
- 8) This project is under consideration by the Government for the 1982-86 IPF cycle.

- 1) Country: GUINEA
- 2) Project No.: RP/GUI/78/001/A and DP/GUI/78/006/B
- 3) Project Title: Mechanical workshop for repair and maintenance of industrial equipment (includes agricultural machinery and implements)
- 4) Amount: US \$ 537,400
- 5) The year it started 1978
- 6) a) completed or ongoing ongoing up to 1981
b) pipeline
- 7) Objectives:
To establish integrated repair and maintenance programme in mechanical engineering including agricultural machinery
- 8) Remarks: For 1981-86 programme a phase II is proposed.

- 1) Country: GUINEA
- 2) Project No.: DP/GUY/81/XXX (phase II)
- 3) Project Title: Mechanical workshop for repair and maintenance of industrial equipment (includes agricultural machinery and implements)
- 4) Amount: US \$ 1.5 million
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline for 1982-86 IPF cycle
- 7) Objectives:
To organize and implement repair and maintenance programme
- 8) Remarks: Project proposal under consideration for 1982-86 IPF cycle.

- 1) Country Guinée-Bissau
- 2) Project No. DP/GBS/81/008
- 3) Project Title L'organisation d'un système de maintenance pour le
 parc des machines et d'équipements industriels
 (Assistance préparatoire) - includes agricultural
 machinery and equipment
- 4) Amount US \$ 33,200

5) The year it started 1981

- 6) a) completed or ongoing X ongoing
- b) pipeline

7) Objectives

Le projet prendra les mesures nécessaires pour aider le Gouvernement de la Guinée-Bissau à établir une stratégie et un plan d'action pour l'organisation d'un système de maintenance du parc des machines et d'équipements industriels et agricoles.

Formuler et élaborer un module d'atelier comme petite unité appropriée pour les réparations et les entretiens simples. Formuler les termes de référence d'un projet global permettant de résoudre les problèmes prédominants.

- 1) Country: IVJRY COAST
- 2) Project No.: SIS
- 3) Project Title: Agricultural machinery manufacturing feasibility study
- 4) Amount: US \$ 16,000
- 5) The year it started - proposed for 1972
- 6) a) completed or ongoing
b) pipeline: The Government request of 1972 could not be implemented due to lack of SIS finances.
- 7) Objectives:
To conduct indepth analysis
- 8) Remarks: Project was also not implemented due to non inclusion under country programme and allocation of IPP finances.

- 1) Country: IVORY COAST
- 2) Project No.: RP/IVC/74/001/A
- 3) Project Title: Agricultural machinery and implements -
training: fellowship
- 4) Amount: US \$ 2.350
- 5) The year it started 1975
- 6) a) ~~completed~~ or ongoing completed
b) pipeline
- 7) Objectives:
Training in agricultural machinery: repair and maintenance

- 1) Country: IVORY COAST
- 2) Project No.: File OA 321 IVC and OA 110 IVC
- 3) Project Title: Agricultural machinery and implements: pilot demonstration manufacture and repair and maintenance
- 4) Amount: around US \$ 300,000
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing - proposed for 1974-78 IPF
b) pipeline
- 7) Objectives:

Through Industrial Development Bureau and Ministry of Agriculture, to promote rural entrepreneurship through pilot activities
- 8) Based on Government SIS request, this project forwarded to UNDP in July 1973. However, this could not be implemented as it was not included in UNDP IPF country programs.

- 1) Country: **KENYA**
- 2) Project No.: **File OS 322 ~~KE~~**
- 3) Project Title: **Assistance to "Hombay" in repair and maintenance and assembly of tractors**
- 4) Amount: **US \$ 37,800**
- 5) The year it started - **proposed for 1974**
- 6) a) completed or ongoing
b) pipelina: **The Government's request of 32. 7. 1974 could not be implemented due to non inclusion of the project in UNDP IPF country programme.**
- 7) Objectives:
To establish a repair and maintenance programme and conduct detailed study on assembly of tractors

- 1) Country: KENYA
- 2) Project No.: IS/KEN/75/002
- 3) Project Title: Feasibility of manufacture of wind operated water pumping equipment in South Nyanza
- 4) Amount: US \$ 51,700
- 5) The year it started 1975
- 6) a) completed or ongoing
c) pipeline
- 7) Objectives:

Design, pilot fabrication of a wind mill - pumping system and analysis of its potential.

- 1) Country: KENYA
- 2) Project No.: IS/KEN/75/010
- 3) Project Title: Prototype production and evaluation of low cost water development equipment
- 4) Amount: US \$ 49,000
- 5) The year it started 1976
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
Development of simple irrigation pump and low cost wind mill
- 8) Remarks: The Government will take up appropriate follow up action on local manufacture

- 1) Country Kenya
- 2) Project No. US/KEN/78/268
- 3) Project Title Technical Evaluation of Low-Powered Tractors
- 4) Amount \$ 76,000
- 5) The year it started 1981
- 6) a) completed or ongoing X (1981)
b) pipeline ongoing

7) Objectives

To promote a technical evaluation of two low powered tractors on basis of the most well-known test codes adopted by the national and international official test centres for the conventional highpowered tractors;

To evaluate, from the engineering point of view, the following features of the tractors: engine, mechanical gear box, belt driven transmission, hydraulic three-point linkage;

To draw up a special technical test code for simple low-powered tractors suitable for African countries on which future tests and evaluation might be based;
to analyze the possibilities to manufacture locally a simple low-powered tractor.

- 8) Remarks: Project being implemented through subcontract/co-operation with CEEMAT, France

- 1) Country: KENYA
- 2) Project No.: DP/KEN/80
- 3) Project Title: Design and Technology Development Centre on Agricultural Machinery and Implements (manufacturing promotion)
- 4) Amount: US \$ 1,384,300

5) The year it started July 1982 proposed

- 6) a) completed or ongoing
b) pipeline proposed for 1982-86 IPF cycle

7) Objectives:

Development Objectives: To increase agricultural production and labour productivity by means of the manufacturing and introduction in agriculture of high quality and relatively low cost agricultural machinery and implements.

Immediate Objectives: To assist local enterprises in manufacturing high quality and relatively low cost agricultural machinery and implements by means of providing them:

- drawings of agricultural machinery, implements and non-standard technological equipment;
- technology of production;
- specifications of materials, components and standard technological equipment.

To develop national engineering capability in manufacturing high quality and relatively low cost agricultural machinery and implements by means of training local engineers and technicians.

To establish quality control system.

- 8) Remarks: Project proposal under consideration by the Government/UNDP for 1982-86 IPF CYCLE

- 1) Country: LESOTHO
- 2) Project No.: File OA 321 RAF 36
- 3) Project Title: Assistance to Lesotho National Development Corporation:
Establishment of a simple agricultural tools/engineering
products pilot manufacturing plant
- 4) Amount: US \$ 350,000 at Thaba - Bósiu rural development project
or Leribe pilot scheme
- 5) The year it started proposed for 1977-81 IPF cycle was to start 1977
- 6) a) completed or ongoing proposed for 1977-81 IPF cycle
b) pipeline
- 7) Objectives:

As a follow up of TF/RAF/74/009 project this project was
recommended. The objective is to develop entrepreneurship and
promote local technical capabilities.
- 8) Remarks: Project submitted to the Government through UNDP on
3 May 1976 for inclusion under IPF. However, this project
was not included for IPF financing.

- 1) Country: LESOTHO
- 2) Project No.: SI/LES/79/801/A
- 3) Project Title: Establishment of a Pilot Plant for
Agricultural Tools and Machinery
(Preparatory Phase)
- 4) Amount: US\$ 13,500
- 5) The year it started 1979
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:
 1. To intensify the utilization of land under cultivation.
 2. To increase the agricultural production, thus improving the population standard of living.
 3. To reduce the agricultural tools and implement imports level.
 4. To promote national engineering industries which provide high-value local jobs to skilled workers as an alternative to contract jobs across the border.

- 1) Country: LESOTHO
- 2) Project No.: UF/LES/80/029
- 3) Project Title: Assistance to the Lesotho National Development Corporation in Manufacturing of Agricultural Tools and Implements
- 4) Amount: US\$ 133,300
- 5) The year it started 1982
- 6) a) completed or ongoing Government request received for 1982-86
b) pipeline implementation (non IPF resources)
- 7) Objectives:
 - a) Assistance to the Lesotho National Development Corporation (LNDC) in the establishment of Agricultural Machinery Industry and creation of domestic employment;
 - b) Utilization of existing capacities by local manufacture of cold steel parts for assembly of agricultural implements.
- 8) Remarks: UNIDO is exploring possibility for finances with selected donors

- 1) Country: LIBYA
- 2) Project No.: SIS/IPF
- 3) Project Title: Manufacturing feasibility study: tractors
- 4) Amount: US \$ 15,000
- 5) The year it started - proposed 1972
- 6) a) completed or ongoing
b) pipeline: In 1972 Government requested UNIDO SIS assistance for 3 months. UNIDO proposed 2 phased integrated action, the first a study under SIS and a follow up phase under IPF finances. The project was not implemented due to non allocation of IPF finances.
- 7) Objectives:

To assist in local assembly/manufacture of tractors.
- 8) Remarks: Government did not indicate its further interest in this report; so not implemented.

- 1) Country: LIBYA
- 2) Project No.: VC/LIB/75/003/30.1.02
- 3) Project Title: Technology Transfer from Pakistan to Libya:
Engineering pilot demonstration manufacturing
plant - pumps and engines
- 4) Amount: US \$ 16,350
- 5) The year it started 1976
- 6) a) completed or ongoing: completed
b) pipeline
- 7) Objectives:
Conducting feasibility study, elaboration of product specification,
detailing alternative production possibilities and recommend ways
and means of realization
- 8) Remarks: No follow up was indicated as no official Government request
received on UNIDO proposal

- 1) Country: LIBYA
- 2) Project No.:
- 3) Project Title: Assistance to the Ministry of Agriculture:
Strengthening of National Agricultural Machinery
Institution in applied R and D and manufacturing
promotion.
- 4) Amount: US \$ 1.8 million
- 5) The year it started 1980: Preparatory Mission
1981: Technical Adviser
1982-85: Project Implementation
- 6) a) completed or ongoing proposed for 1982-86 IPF cycle
b) pipeline
- 7) Objectives: To assist the small/medium farmers of Libya to secure
appropriate quality simple/intermediate agricultural
implements and machinery and to promote industrialization through
small/medium scale manufacturing entrepreneurship development through
industrial liaison to assist in establishing appropriate agricultural
mechanization and local production systems.
- 8) Remarks: Proposed for 1982-86 IPF cycle/ cost sharing. Awaiting
Government's reaction and decision.

- 1) Country: MADAGASCAR
- 2) Project No.: SIS/70/1039/MAG 15
- 3) Project Title: Agricultural machinery manufacturing feasibility study (UNIDO-FAO co-operative project)
- 4) Amount: US \$ 18,200
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To analyse mechanization system, the agricultural machinery needs, product specification, design and development and manufacturing potential.
- 8) Remarks: The experts' recommended follow up large scale project could not be implemented as it was not included in the Country Programme IPF.

- 1) Country: MADAGASCAR
- 2) Project No.: File OA 220 MAG-11 and OA 110 MAG
- 3) Project Title: Agricultural machinery and implements development
- 4) Amount: around US \$ 450,000
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing - not implemented
b) pipeline
- 7) Objectives:

To develop integrated design, manufacture and repair and maintenance of agricultural machinery
- 8) Remarks: This project based on expert's recommendation (SIS/70/1039 MAG-15) was submitted to UNDP in June/July 1973. This project could not be implemented as it was not included in UNDP Country Programme.

- 1) Country: MADAGASCAR
- 2) Project No.: DP/MAG/81/XXX
- 3) Project Title: Assistance pour le développement et la promotion du secteur des machines agricoles.
- 4) Amount: US\$ 900,000
- 5) The year it started proposed 1982
- 6) a) completed or ongoing pipeline 1982 - 86
b) pipeline
- 7) Objectives:
- Objectif immédiat:
- (a) Améliorer les outils agricoles utilisés actuellement ou mettre au point de nouveaux outils pour surmonter les obstacles rencontrés dans ce domaine. Si besoin est, on adoptera, expérimentera et modifiera des outils agricoles utilisés ailleurs;
- (b) Fournir une assistance pour la planification des achats et l'installation des machines et des équipements nécessaires pour la fabrication de prototypes;
- (c) Aider l'Institut et les unités actuelles de production d'outils à main, d'outillage et de machines agricoles à renforcer leurs services d'études techniques (production et pièces détachées) en vue de fabriquer des prototypes pour la recherche et la production; etc.
- (d) Aider l'Institut et les unités actuelles de production d'outils à main, d'outillage et de machines agricoles à planifier la production en général et à programmer la fabrication en moyenne et grande série.
- 8) Remarks: Project under consideration by UNDP/Government for 1982-86 1PF cycle.

- 1) Country: MALAWI
- 2) Project No.: SIS/70/796/MLW (7)
- 3) Project Title: Agricultural machinery manufacturing feasibility mission
- 4) Amount: US \$ 9,100
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To analyse the local design and development and manufacturing capabilities
- 8) Remarks: The follow up project as recommended by the expert could not be implemented as it was not included in the country programme IPF finances.

- 1) Country: MALAWI
- 2) Project No.: File OS 320 MLW
- 3) Project Title: Demonstration pilot engineering workshop and foundry for manufacture of simple agricultural tools, castings and metal products
- 4) Amount: US \$ 150,000
- 5) The year it started - proposed for 1976
- 6) a) completed or ongoing
- b) pipeline The SIDFA's recommendations (report of mission 29 January - 5 February 1975) could not be implemented as this project was not included in UNDP IPF country programme.
- 7) Objectives: Promotion of engineering production techniques, training and development of appropriate agricultural implements
- 8) Remarks: Project not included under 1976-80 IPF finances. So could not be implemented.

- 1) Country: MALAWI
- 2) Project No.: -
- 3) Project Title: Assistance to MDC: Establishment of an integrated pilot demonstration plant at Liwone and/or Lilongwe industrial estate for production of agricultural tools and simple engineering products
- 4) Amount: US \$ 520,000
- 5) The year it started proposed to start in 1977
- 6) a) completed or ongoing - proposed 1977-81 IPF
b) pipeline
- 7) Objectives:

To promote training, rural entrepreneurship development and integrated industrial development to serve agriculture.
- 8) Remarks: As a follow up of IS/MLW/71/802 and Government request of September 1975 this project was submitted to the Government in March 1976. However, this project was not included for implementation under 1977-81 IPF cycle.

- 1) Country: MALAWI
- 2) Project No.:
- 3) Project Title: Assistance to the Ministry of Agriculture:
Agricultural Machinery Repair and Maintenance,
Spare Parts Production and Simple Implements
Fabrication
- 4) Amount: US\$ 991,000
- 5) The year it started: proposed 1982

- 6) a) completed or ongoing proposed for 1982-86 IPF
b) pipeline

7) Objectives:

Development Objectives:

- (a) To assist the Ministry of Agriculture to maximize and rationalize all the available repair and maintenance facilities, which are currently managed at various places;
- (b) To assist the Ministry of Agriculture to develop their technological capabilities and promote savings in foreign exchange through organized programmes of repair and maintenance and spare parts management techniques.

Immediate Objectives:

- (a) To strengthen the existing repair and maintenance workshop of the ministry through supplementary equipment, technical experts and training programmes;
- (b) To assist in achieving better repair and maintenance programmes through spare parts control, cost control and management;
- (c) To assist in production of appropriate spare parts and simple implements and to train local personnel.

- 8) Remarks: Project submitted to Government. Awaiting Government reaction.

- 1) Country: MALI
- 2) Project No.: -
- 3) Project Title: Rehabilitation of Government workshop at Bamako:
Development and production of simple agricultural
tools and implements
- 4) Amount: US \$ 442,000

5) The year it started proposed for 1977

- 6) a) completed or ongoing - not initiated
b) pipeline

7) Objectives:

To assist in the realization of Government plans to produce 6,500 plows,
3,500 multi cultivators and 3,000 carts annually

- 8) Remarks: Following analysis of FAC aid in promotion of agriculture
and agricultural machinery this project was submitted to
the Government in March 1976. However, this project was not
included for 1977-81 IPF implementation

- 1) Country Mali
- 2) Project No. DP/MLI/80/011
- 3) Project Title Assistance technique et financiere à l'EMAMA
- 4) Amount \$ 57.000
- 5) The year it started 1981
- 6) a) completed or ongoing X (1981) ongoing
b) pipeline

7) Objectives

Promouvoir au niveau national, la réparation du matériel agricole et de transport routier ainsi que l'approvisionnement en pièces de rechange des entreprises étatiques para-étatiques ou privées contribuant ainsi au bon redressement de leur production.

Promouvoir au niveau de la région de Sikasso la capacité de réparation, de reconditionnement et de production de pièces de rechange d'équipements de transport routier, agricoles ou industriels.

Créer au niveau de l'EMAMA un centre de perfectionnement régional à l'usage des mécaniciens autos, poids lourds et mécaniciens d'entretien des entreprises industrielles étatiques ou privées.

- 8) Remarks: Follow up 1982 - 86. Project proposed.

- 1) Country MALI
- 2) Project No.
- 3) Project Title Assistance Technique (Phase Operationelle Sikasso)
- 4) Amount \$ 398.700
- 5) The year it started proposed 1982 - 86
- 6) a) completed or ongoing pipeline
b) pipeline X
- 7) Objectives Transformer l'EMAMA en une unité commercialement, techniquement et économiquement viable, capable de mener par elle-même sa mission d'entretien et de réparation de matériel agricole, de transport routier et d'approvisionnement de l'industrie malienne en pièces de rechange.
- 8) Remarks: Project under consideration. Recommended for IPF finances.

- 1) Country: MAURITIUS
- 2) Project No.: SIS/70/924 MAR (13)
- 3) Project Title: Agricultural machinery manufacturing feasibility study mission
- 4) Amount: US \$ 3,300
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To analyse local manufacturing potential for production of hand tools
- 8) Remarks: The follow up project could not be implemented as it was not included in the country programme 1972-76.

- 1) Country: MAURITIUS
- 2) Project No.: File OA 220 MAR (13)
- 3) Project Title: Expert services in industrial negotiations on settling up of agricultural hand tools factory
- 4) Amount: US \$ 25,000 initially and US \$ 250,000 for pilot plant
- 5) The year it started (was to be started in 1972)
- 6) a) completed or ongoing proposed for 1972 - 76 IPF cycle
b) pipeline
- 7) Objectives:
To assist in negotiation and start up of a manufacturing programme on hand tools
- 8) Remarks: This project as recommended by the expert in 1971, although official request received could not be implemented as it was not included under UNDP IPF country programme

- 1) Country: MAURITIUS
- 2) Project No.: -
- 3) Project Title: Pilot manufacturing plant - Hand tools
- 4) Amount: US \$ 900,000 (approx.)
- 5) The year it started proposed 1982
- 6) a) completed or ongoing pipeline 1982 - 86
b) pipeline
- 7) Objectives: To establish a pilot manufacturing plant with emphasis on training and rural entrepreneurship promotion.
- 8) Remarks: A UNIDO HQ staff project formulations mission prepared. Recommended eventual project implementation under 1982-86 IPF financing.

- 1) Country: MOROCCO
- 2) Project No.: SIS/70/1137 MOR 18
- 3) Project Title: Agricultural machinery manufacturing feasibility study mission (UNIDO-FAO Joint project)
- 4) Amount: US \$ 16,000
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To conduct analysis of mechanization and local manufacturing potential and recommend ways and means of strengthening local capabilities
- 8) Remarks: The follow up project recommended by the experts could not be implemented due to non-allocation of UNDP IPF finances 1972-76.

- 1) Country: MOROCCO
- 2) Project No.: -
- 3) Project Title: Organization and operation of agricultural machinery repair and maintenance facilities (phase I)
- 4) Amount: US \$ 39,150
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing - Not started
b) pipeline
- 7) Objectives:
To develop a pilot demonstration mobile unit system
- 8) Remarks: The project document submitted to UNDP in July 1973 could not be implemented as it was not included in the country programme

- 1) Country: MOZAMBIQUE .
- 2) Project No.:
- 3) Project Title: Assistance to the Ministry of Agriculture:
Strengthening of National Agricultural Machinery
Institution in applied R and D and commercialization
- 4) Amount: US \$ 1.5 million Project Implementation 1982-85
US \$ 20,000 Preparatory Mission 1980
US \$ 40,000 Technical Adviser 1981
- 5) The year it started proposed for 1982 .
- 6) a) completed or ongoing recommended for 1982-86 IPF cycle
b) pipeline
- 7) Objectives:
To assist the small/medium farmers of Mozambique to secure appropriate
quality simple/intermediate agricultural implements and machinery and to
promote rural industrialization through small/medium scale manufacturing
entrepreneurship development through industrial liaison.
- 8) Awaiting Government's reaction for inclusion 1982-86 IPF CYCLE

- 1) Country: NIGER
- 2) Project No.: File OA 321 NER-4, OA 110 NER
- 3) Project Title: SONIFAME: Agricultural machinery and implements:
pilot manufacture and repair and maintenance
- 4) Amount: US \$ around 300,000
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:

To strengthen local manufacture and promote repair and maintenance activities of SONIFAME
- 8) Remarks: Based Government request of early 1973, the project documents/
concepts sent to UNDP in July 1973. The project could not be
implemented as it was not included in the country programme.

- 1) Country: NIGER
- 2) Project No.: -
- 3) Project Title: Assistance to SONIFAME factory: Product diversification and production expansion of simple agricultural tools and implements
- 4) Amount: US \$ 350,000
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing
b) pipeline -
- 7) Objectives:
Higher utilization of existing facilities, product diversification and improvement of production facilities and training.
- 8) Remarks: This project concept based on SIDFA analysis and recommendations were submitted to Government in March 1976. However, this was not included under 1977-81 IPF cycle.

- 1) Country: NIGERIA
- 2) Project No.: File OA 220 NIR-24
- 3) Project Title: (a) pilot demonstration plant for manufacture of agricultural tools and implements
(b) pilot tractor hiring station with repair and maintenance programme
- 4) Amount: around US \$ 500,000
- 5) The year it started was to start in 1974
- 6) a) completed or ongoing - did not start
b) pipeline
- 7) Objectives:
To establish a pilot scheme in a state
- 8) Remarks: These two project documents which were prepared by UNIDO at the request of the Government and sent to UNDP in July 1973 could not be implemented as it was not included in UNDP IPF country programme

- 1) Country: NIGERIA
- 2) Project No.: File OS 120 NIR
- 3) Project Title: Assistance to North-central state in agricultural machinery and implements (advisory services)
- 4) Amount: US \$ 60,000
- 5) The year it started: -
- 6) a) completed or ongoing
- b) pipeline: The project included in UNDP country programme document 1975-79 dated 7 February 1975. UNIDO proposal to UNDP/Government was to implement through UNIDO-FAO co-operative programme. However, project not referred to UNIDO.
- 7) Objectives:

To advise and promote agricultural machinery sector

- 8) Remarks: UNIDO is not involved in this project.

- 1) Country: NIGERIA
- 2) Project No.: File GA 120 NIR
- 3) Project Title: Assistance to ~~Benue~~ Plateau State - Agricultural Engineering (workshop, repair and maintenance)
- 4) Amount: US \$ 90,000
- 5) The year it started -
- 6) a) completed or ongoing
- b) pipeline: The project included in UNDP Country Programme document 1975-79 dated 7 February 1975. UNIDO proposal to UNDP/Government was to implement through UNIDO-FAO co-operative programme. However, project not referred to UNIDO.
- 7) Objectives:

To advise and promote agricultural machinery sector
- 8) UNIDO is not involved in this project

- 1) Country: NIGERIA
- 2) Project No.:
- 3) Project Title: Nigerian Federal and States' Network of rural manufacture of low-cost agricultural equipment suited for small and medium farms
- 4) Amount: US \$ 3,425 million
- 5) The year it started January 1981 proposed
- 6) a) completed or ongoing pipeline recommended for 1982-86 IPF cycle
b) pipeline
- 7) Objectives:
- Development Objectives: To enable small farmers of various states in Nigeria to achieve a higher level of agricultural productivity/standard of living by using improved low-cost simple agricultural tools, animal drawn implements and hand operated machinery;
To promote rural development and rural industrialization through upgrading of rural small-scale and medium industries for production of simple agricultural machinery and application of appropriate production technology;
To promote co-operation among the countries of this region production programme through establishment of agricultural machinery.
- Immediate Objectives: Strengthen capabilities of national institutions of various states in testing, evaluation, design and development and fabrication of prototype equipment to meet local manufacturing conditions, and establish appropriate testing and evaluation methods through regional co-operation.
This objectives is to be realized by individual efforts by appropriate institutions in various states through a coordinated national activity.
This calls for establishment of a network, consisting of existing institutional and manufacturing facilities and promoting an interlink.
- 8) Remarks: Awaiting Government's reaction on inclusion under 1982-86 IPF cycle.

- 1) Country: NIGERIA
- 2) Project No.:
- 3) Project Title: Establishment of Zonal Workshop facilities, for repair and maintenance and production of simple spare parts
- 4) Amount: US \$ 1.481 million
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing pipeline; recommended for 1982-86 IPF cycle
b) pipeline
- 7) Objectives:
Development Objectives: To assist in accelerated promotion of self-reliance in the less developed non-urban areas of the country and to provide a basic engineering infrastructure and technical facilities with a view to develop technical human resources, training, rural employment, utilization of local material, with emphasis on reducing the foreign exchange requirements for imports, and to bridge the industrial and technological gap between the regions within the country.
Immediate Objectives: Production of appropriate consumer and critical spare parts and components which are required for the community and to other industries;
Repair and maintenance activities to assist the various major infrastructure development sectors and existing/future industries;
Training of local technical personnel.
- 8) Remarks: Awaiting Government's reaction on inclusion under 1982-86 IPF cycle.

- 1) Country: RWANDA
- 2) Project No.: File OA 110 RWA
- 3) Project Title: Pilot manufacture of agricultural tools and implements
- 4) Amount: around US \$ 250,000
- 5) The year it started was to start in 1974
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:
To promote rural fabrication and small scale production
- 8) Remarks: This project concept sent to the Government by UNIDO in July 1973 at their request could not be implemented as it was not included in UNDP IPF country programme

- 1) Country: RWANDA
- 2) Project No.: -
- 3) Project Title: Establishment of a rural pilot demonstration plant for manufacture of hoes and other agricultural tools
- 4) Amount: US \$ 850,000
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing - not initiated
b) pipeline

7) Objectives:

To meet the local requirement of hoes (currently all imported) to establish a pilot plant to produce 550,000 hoes/year on two shift basis, introducing appropriate production technology and train local personnel.

- 8) Remarks: This project was based on SIDFA analysis and Government's request of July 1973. UNIDO expert prepared a technical report "Projet pour la fabrication du houes" and the project was submitted in March 1977 to the Government. However, this was not included for implementation under 1977-81 IPF country programme.

- 1) Country: SENEGAL
- 2) Project No.: IS/SEN/75/020
- 3) Project Title: Manufacturing of a small agricultural tractor
- 4) Amount: US \$ 47,500
- 5) The year it started 1976
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To establish comparative performance analysis of various tractors and define design specifications
- 8) Remarks: Further intermediate work undertaken by FAO in 1978. However, 1981-86 programmes are not yet formulated.

- 1) Country: SENEGAL
- 2) Project No.: SI/SEN/75/820-24
- 3) Project Title: Small tractor manufacture
- 4) Amount: US \$ 30,000
- 5) The year it started 1978
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To assist SISCOME in conducting comparative analysis of some small tractors and define most optimum product specification
- 8) Remarks: Next phase of project SEN/78/016 "Promotion et construction d'un petit tracteur agricole" as a preparatory phase under IPF was included and submitted to UNDP/UNIDO in May 1979.

- 1) Country: SENEGAL
- 2) Project No.: DP/SEN/78/016
- 3) Project Title: Promotion et construction d'un petit tracteur agricole
- 4) Amount: US \$ 35,584
- 5) The year it started 1980
- 6) a) completed or ongoing ongoing
b) pipeline
- 7) Objectives:
To assist SISCOME in development of a small tractor and work out the techno-economic details on local production
- 8) Remarks: The project has been postponed in June 1981 until re-organization of SISCOME is completed.

- 1) Country Senegal
- 2) Project No. DP/SEN/78/014
- 3) Project Title Assistance à la SAED pour Etablissement d'u Systeme de Maintenance de Pompes d'Irrigation
- 4) Amount \$ 76.900
- 5) The year it started 1981
- 6) a) completed or ongoing ongoing
b) pipeline
- 7) Objectives
Examen technico-économique de toutes les possibilités d'entretien des pompes d'irrigation du Fleuve Sénégal;
Choix du système choisi;
Création de trois ateliers régionaux (Aéré-Lao, Matam Bakel) pour l'entretien et la réparation du matériel exploité dans les petits périmètres villageois;
Définir un programme de formation du personnel local;
Etablir la liste des pièces nécessaires à l'entretien;
Définir un système de gestion des stocks.

- 1) Country: SIERRA LEONE
- 2) Project No.: DP/SIL/80/XXX
- 3) Project Title: Assistance to the National Workshop:(includes basic facilities, and production including agricultural tools and implements
- 4) Amount: around US \$ 2.5 million
- 5) The year it started 1982
- 6) a) completed or ongoing pipeline proposed for 1982-86
b) pipeline
- 7) Objectives:

To assist the National Workshop in transformation of its present ad hoc activities and under utilized assets into a well organized appropriate production, technical service and training unit through a modest modernization programme. This includes modest upgrading of existing foundry, forge shop, tool room, design office and training facilities with a view to achieve upgraded skills, batch production of agricultural tools, trademens tools, simple construction equipment, fabricated items, domestic simple items and appropriate castings. The programme to meet the requirement of local demand, critical spare parts manufacture and high level industrial repair and maintenance activity.

- 8) Remarks: This project has been revised and may be implemented with emphasis on basic facilities such as foundry, forging, etc., with significant emphasis on agricultural tools. Based on proposed analysis through UNIDO sub-contract, an appropriate project to be included under 1982-86 IPF cycle.

- 1) Country: SOMALIA
- 2) Project No.: -
- 3) Project Title: Pilot manufacturing plant: agricultural tools and simple post harvest technology equipment
- 4) Amount: US \$ 950,000
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:
To strengthen activities of industrial estates proposed at Berbera, Hargeisa, Mogadiscio, Jowhar and Kismayo and promote rural entrepreneurship through training.
- 8) Remarks: This project concept was based on experts analysis in June '971, Government's interest during 1972/73 and request in 1975. The project concept was submitted to the Government in March 1976. But this was not included for 1977-81 IPF country programme implementation.

- 1) Country: SOMALIA
- 2) Project No.: Pipeline
- 3) Project Title: Assistance to the Agricultural Machinery Agency: promotion of applied R + D, manufacture and rural entrepreneurship development
- 4) Amount: US\$ 812,700
- 5) The year it started proposed 1982
- 6) a) completed or ongoing
b) pipeline recommended for 1982-86
- 7) Objectives:
1) To increase agricultural production, labour productivity, improve the living standard of rural population.
2) To develop national engineering capabilities.
3) To reduce unemployment
- 8) Remarks: Awaiting UNDP and Government's reaction and decision on inclusion under 1982-86 IPF

- 1) Country: SOMALIA
- 2) Project No.: UF/SOM/81/XXX
- 3) Project Title: Assistance to foundry and mechanical workshop:
water pump technology and development
- 4) Amount: US \$ 500,000
- 5) The year it started proposed 1982
- 6) a) completed or ongoing
b) pipeline pipeline 1982-86
- 7) Objectives:

To develop and prototype manufacture irrigation pumps with windmill
system
- 8) Remarks: UNIDO negotiating with appropriate donor countries for finances.

- 1) Country: SUDAN
- 2) Project No.: SIS/SUD/70/1128
- 3) Project Title: Agricultural machinery manufacturing feasibility study mission (UNIDO-FAO Joint project)
- 4) Amount: US \$ 12, 555
- 5) The year it started 1972
- 6) a) completed or ongoing: completed
b) pipeline

7) Objectives:

To analyse agricultural mechanization and manufacturing possibilities and recommend appropriate actions

- 8) Remarks: The follow up project proposals
- (a) agricultural tools and implements factory - upgrading of existing manufacturing facilities at steamers workshop (US \$ 300,000);
 - (b) tractor assembly and manufacture: advisory services (US \$ 150,000) and
 - (c) repair and maintenance: technical advisory services (US \$ 100,000)
- could not be implemented due to non -allocation of UNDP IPF finances 1972-76.

- 1) Country: SUDAN
- 2) Project No.: SM/SUD/73/804
- 3) Project Title: Agricultural machinery manufacturing mission
(UNIDO-FAO co-operative project)
- 4) Amount: US \$ 18,000
- 5) The year it started 1973
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
- Analysis of agricultural machinery sector and promotion of design and adaptation, manufacture and repair and maintenance.
- 8) Remarks: Follow up on 1972 SIS/SUD/70/1128 project and elaboration of recommended projects for action

- 1) Country: SUDAN
- 2) Project No.: AR/SUD/72/001
- 3) Project Title: Exploratory mission - Sesame Harvesting
- 4) Amount: US \$ 780
- 5) The year it started 1974
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To analyse harvesting technology
- 8) Remarks: A programme for local development proposed

- 1) Country: SUDAN
- 2) Project No.: File OA 220 SUD-19
- 3) Project Title: Agricultural Machinery and implements - integrated design, manufacture and repair and maintenance
- 4) Amount: US \$ around 400,000
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing -
b) pipeline not initiated
- 7) Objectives:
To assist the Ministry of Agriculture and Agricultural Engineering Department in development of an integrated project
- 8) Remarks: The project concept sent to UNDP and the Government in July 1973 could not be implemented as it was not included in the country programme.

- 1) Country: SUDAN
- 2) Project No.: RP/INT/XXX
- 3) Project Title: World Bank (IMF) - UNIDO mission on analysis of international manufacturing proposals on establishment of a tractor factory (UNIDO HQ mission)
- 4) Amount: around US \$ 35,000
- 5) The year it started 1976
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
Mission undertaken for World Bank (IMF) to assist the Government on analysis of international manufacturing tenders received by the Government
- 8) Remarks: The mission's analysis and recommendations were taken up by the Government for further action.

- 1) Country: SUDAN
- 2) Project No.: -
- 3) Project Title: Integrated rural development: pilot demonstration plants on agricultural tools and animal drawn implements
- 4) Amount: US \$ 50,000 (exploratory) and US \$ 500,000 (project)
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:
 - (a) To promote integrated rural industrial development programme in Wadi-Madni, Gazira area in co-operation with Sudanese Savings Bank, Directorate of Rural Development and Sudan Gezire Board;
 - (b) To promote rural entrepreneurship and training through practical pilot demonstration production technology;
- 8) Remarks: This project was based on UNIDO discussions with Senior concerned officials of the Government in November 1975 and industrial sector programming mission of January 1976. The project concept was forwarded in March 1976. However, this was not included for implementation under 1977-81 IPF programme.

- 1) Country: SUDAN
- 2) Project No.: -
- 3) Project Title: Assistance to the Directorate of Agricultural Engineering: Agricultural machinery development and Adaptation Engineering Unit
- 4) Amount: US \$ 300,000 (Phase I)
- 5) The year it started proposed for 1977
- 6) a) completed or ongoing; - not started
b) pipeline
- 7) Objectives:
To develop engineering capabilities for design and adaptation of intermediate agricultural machinery and implements
- 8) Remarks: This project was based on recommendations of UNIDO-FAO project IS/70/1128 and further detailed discussions with the Government experts in 1974 and initial activities in 1975. The project concept was forwarded to the Government in March 1976. However, this project was not included for 1977-81 IPF country programme implementation.

- 1) Country: SUDAN
- 2) Project No.: -
- 3) Project Title: Technical Advisory Team to establish a tractor assembly and implement manufacturing plant
- 4) Amount: US \$ 288,000
- 5) The year it started proposed to start in 1977
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:

To assist in start up of a tractor plant (1500 units/year to be expanded to 2500 units/year) and matching implements as well as to promote ancillary industry development
- 8) Remarks: This project was based on recommendations of UNIDO project IS/70/1128 and selected activities of IBRD in this field and UNIDO short term missions. This project concept was submitted in March 1976. However, this was not included for 1977-81 IPF cycle.

- 1) Country: SUDAN
- 2) Project No.:
- 3) Project Title: Assistance to the Agricultural Machinery Agency:
Integrated manufacture of low cost agricultural
tools, implements and machinery
- 4) Amount: US \$ 1.5 million
- 5) The year it started - proposed for 1982-86
- 6) a) completed or ongoing
b) pipeline pipeline
Based on Government's letter of 3 June 1981,
UNIDO has proposed this project on 22 July 1981.
- 7) Objectives:
To develop manufacturing programme with integrated design and
adaptation, extension and repair and maintenance activities.
- 8) Remarks: Awaiting Government's reaction and allocation of UNDP-IPF
and IPF finances.

- 1) Country: SWAZILAND
- 2) Project No.: RP/INT/XXX
- 3) Project Title: Technical assistance mission on low cost tractor manufacture (HQ staff mission)
- 4) Amount: around US \$ 3,000
- 5) The year it started 1977
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Advice and assistance to National Industrial Development Corporation of Swaziland on promotion of regional co-operation with reference to small tractor development
- 8) Remarks: A project proposal to organize a regional workshop on Tinkabi Tractor finalized

- 1) Country: SWAZILAND
- 2) Project No.: SWA/72/007
- 3) Project Title: Assistance to S.I.D.O: Tinkabi Tractor - Production advisory services
- 4) Amount: US \$ 15,000
- 5) The year it started 1975
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:
To advise and assist on rationalized production techniques

- 1) Country: SWAZILAND
- 2) Project No.: File SWA-8/CTR 78/61 - VC/SWA/76/076
- 3) Project Title: Study of Tinkabi small tractor development project in Swaziland
- 4) Amount: US \$ 6,000
- 5) The year it started 1978
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Through a consultant and field visit, preparation of a techno-economic manual including socio-economic aspects, on farm experience, history of project and possible sub-regional co-operation.

- c) Remarks: The report UNIDO/IOD/253 of 17 April 1979 was distributed to various developing countries of Africa for analysis of experience and appropriate action at national levels.

- 1) Country: SWAZILAND
- 2) Project No.: DP/SWA/80/XXX
- 3) Project Title: Improvement in agricultural machinery manufacturing
Tinkabi Tractors
- 4) Amount: US \$ 586,000
- 5) The year it started proposed to start in 1982
- 6) a) completed or ongoing pipeline proposed for 1982-86 IPF cycle
 b) pipeline
- 7) Objectives:

 To provide technical experts in sheel metal, tool and die, and
 production technology and to assist in improving production techniques,
 quality and lower the cost
- 8) Remarks: The original request received by UNIDO early 1980 for UNIDF
 finances (US/SWA/80/089) due to lack of such finances and
 other consideration, UNIDO has prepared the appropriate project
 document and submitted to the Government and UNDP in early 1981
 with a request to include the project under 1982-86 IPF.

- 1) Country: TANZANIA
- 2) Project No.: TAN/121/SHC/SF/ID
- 3) Project Title: Market survey of agricultural machinery and implements
- 4) Amount: US \$ 36,000
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To conduct market survey and recommend ways and means of meeting the demand
- 8) Remarks: The analysis recommended applied R + D, manufacture and repair and maintenance programmes for the consideration of the Government.

- 1) Country: TANZANIA
- 2) Project No.: TAN VC/1/16, VC/URT/70/001, IS/URT/7/804 and TF/URT/72/002
- 3) Project Title: Agricultural machinery and implements - organization and operation of repair and maintenance (mobile unit and workshop)
- 4) Amount: US \$ 131,500
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To initiate mobile repair and maintenance programme and strengthen one workshop
- 8) Remarks: This project was the initial phase primarily under UNIDO finances. Follow up large scale integrated project under IPF recommended.

- 1) Country: TANZANIA
- 2) Project No.: DP/URT/73/XXX File OA 220 URT
- 3) Project Title: Integrated production and marketing of agricultural tools and implements
- 4) Amount: US \$ 125,000
- 5) The year it started (was to start in 1973)
- 6) a) completed or ongoing - not started
b) pipeline
- 7) Objectives:
To assist in engineering design and manufacture of agricultural implements
- 8) Remarks: The project document prepared and submitted in June 1973 at the request of the Ministry of Commerce and Industry could not be implemented as it was not included in UNDP Country Programme 1972-76

- 1) Country: TANZANIA
- 2) Project No.: RP/URT/74/002
- 3) Project Title: Agricultural machinery repair and maintenance - fellowships
- 4) Amount: US \$ 9,000
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
Training abroad in repair and maintenance

- 1) Country: TANZANIA
- 2) Project No.: DP/URT/74/006/A
- 3) Project Title: Agricultural machinery survey
- 4) Amount: US \$ 3,750
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

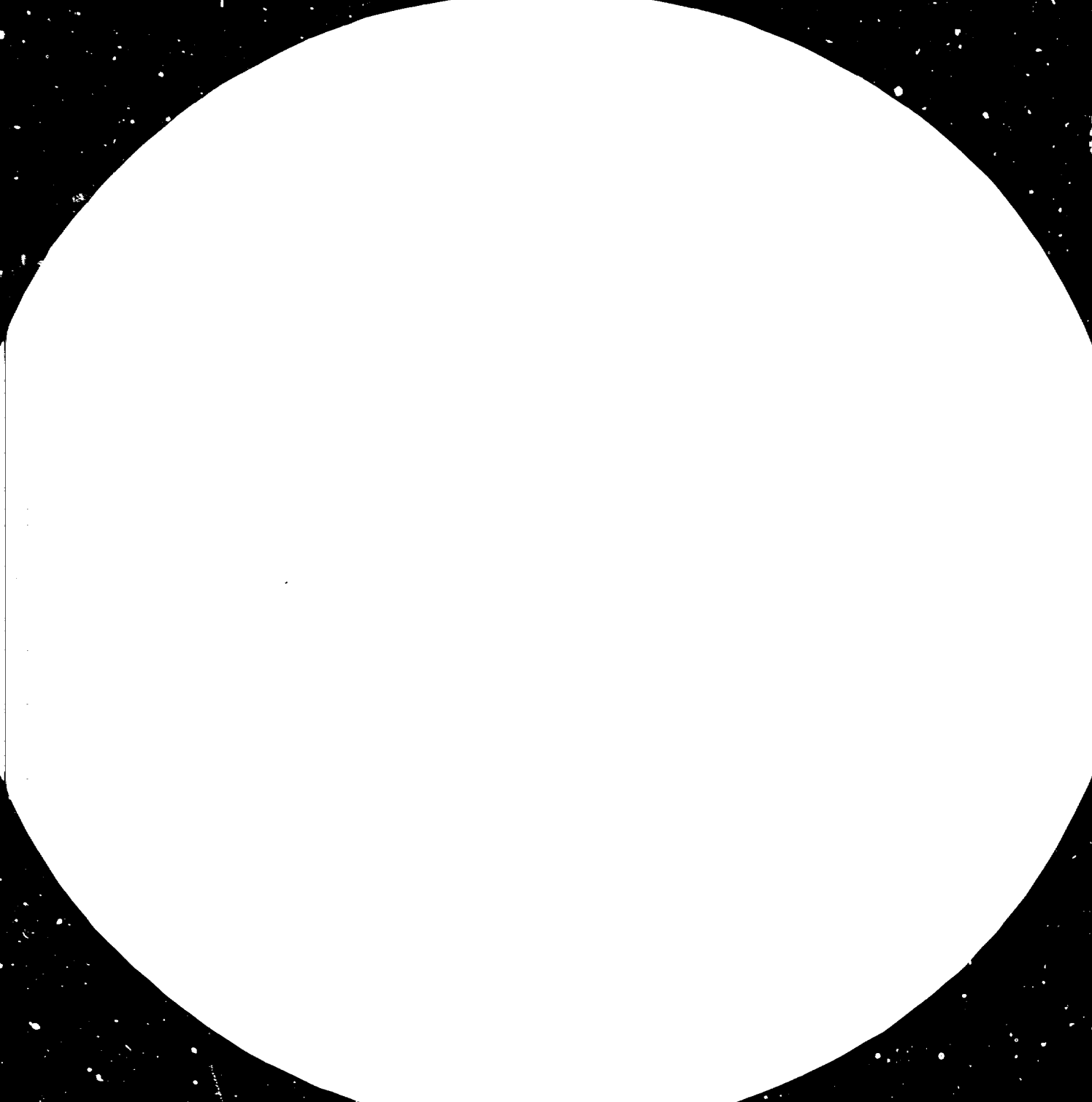
To survey agricultural mechanization and appropriate agricultural machinery development and recommended various measures

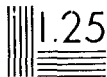
- 1) Country: TANZANIA
- 2) Project No.: File OA 220 URT (15)
- 3) Project Title: Assistance to National Development Corporation:
development of engineering and agricultural
machinery sector
- 4) Amount: US \$ 27,000 to be followed by US \$ 500,000
- 5) The year it started not started
- 6) a) completed or ongoing
b) pipeline The Government request of 7 February 1975
was not included by them in UNDP-IPF country
programme
- 7) Objectives:

To advise on rationalization of manufacture and supporting institutional
facilities
- 8) Remarks: This was to initiate a comprehensive engineering design
and development. But was not included under IPF.

- 1) Country: TANZANIA
- 2) Project No.: DP/URT/74/008
- 3) Project Title: Organization and operation of agricultural machinery repair and maintenance phase II
- 4) Amount: US \$ 240,000
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To strengthen repair and maintenance programme in agricultural machinery
- 8) Remarks: It was found that there is a need to establish foundry and prototype workshops. This was recommended as Phase III activity. However, this was not included under 1977-81 IPF finances.





- 1) Country: TANZANIA
- 2) Project No.: DP/URT/008 phase III
- 3) Project Title: Establishment of prototype workshop and foundry for agricultural equipment at Iringa
- 4) Amount: US \$ 500,000
- 5) The year it started - was to start in 1976
- 6) a) completed or ongoing
b) pipeline The Government request of 7 February 1975 was not included by the Government for UNDP-IPF country programme finances
- 7) Objectives:

To develop basic facilities and promote pilot manufacture
- 8) Remarks: Project not implemented due to lack of allocation of IPF finances.

- 1) Country: TANZANIA
- 2) Project No.: File OS 321 RAF - 36
- 3) Project Title: Establishment of a network of technical village workshops as model scheme at Arusha and Dodoma regions
Agricultural implements, tools and simple metal products
- 4) Amount: US \$ 500,000
- 5) The year it started proposed for 1977-81 IPF cycle.
- 6) a) completed or ongoing: - not initiated
b) pipeline
- 7) Objectives:

As a follow up of TF/RAF/74/109 the project was formulated to promote rural entrepreneurship, appropriate technology and training

- 8) Remarks: This project was submitted to the Government through UNDP on 3 May 1976 for inclusion under 1977-81 IPF cycle. However, this project was not included under country programme. It should be noted that the Government requested UNIDO for UNIDF finances for a project on consolidation of village blacksmiths which was financed and implemented on a modest basis in 1979/80.

- 1) Country: TANZANIA
- 2) Project No.: US/URT/77/003 File OA 321 URT 49
- 3) Project Title: Assistance towards consolidation of village production of agricultural implements by local blacksmiths
- 4) Amount: US \$ 145,500 (UNIDF)
- 5) The year it started 1979
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
 - (a) To survey blacksmiths;
 - (b) Select blacksmiths;
 - (c) upgrade physical and technical capabilities;
 - (d) assist in production of improve agricultural tools etc.
- 8) Remarks: As a result of the anticipated impact of this project and as due to lack of present finances and other reasons did not permit continuation of this initial programme, an extensive phase II is under consideration by the Government.

- 1) Country: TANZANIA
- 2) Project No.: -
- 3) Project Title: **Manufacturing Promotion of Intermediate Type
Low Cost Agricultural Machinery and Implements
with Applied R and D and Training**
- 4) Amount: US\$ 1.8 million
- 5) The year it started proposed 1982
- 6) a) completed or ongoing recommended for 1982-86 IPF cycle.
b) pipeline
- 7) Objectives:

To establish an integrated national programme through strengthening of existing institutional facility and orienting them to applied engineering.
- 8) Remarks: Recommended for 1982-86 IPF; under consideration.

- 1) Country: TANZANIA
- 2) Project No.: DP/URT/80/XXX
- 3) Project Title: Establishment of Zonal Workshop Facilities,
Spare Parts Production and Technical Service
- 4) Amount: US \$ 1.483
- 5) The year it started October 1981
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:
Development Objectives: To assist in accelerated promotion of self-reliance in the under developed non-urban areas of the country and to provide a basic engineering infrastructure and technical facilities with a view to develop technical human resources, training, rural employment, utilization of local material, with emphasis on reducing the foreign exchange requirements for imports, and to bridge the industrial and technological gap between the regions with the country.
Immediate Objectives: Production of appropriate consumer and critical spare parts and components which are required for the community and to other industries;
Repair and maintenance activities to assist the various major infrastructure development sectors and existing/future industries;
Training of local technical personnel.
- 8) Remarks: Under consideration by the Government and UNDP for inclusion under 1982-86 IPF.

- 1) Country: TANZANIA
- 2) Project No.: URT/81/XXX
- 3) Project Title: The consolidation of the village production of agricultural implements by local blacksmiths (Phase II)
- 4) Amount: US \$ 622,450
- 5) The year it started proposed to start 1982
- 6) a) completed or ongoing pipeline 1982-86 IPF cycle
b) pipeline
- 7) Objectives:

To provide direct technical services to the blacksmiths to upgrade production facilities, training and technology and promote co-operative marketing in 3 major regions.

- 8) Remarks: The Government of Tanzania (SIDO) submitted to UNDP/UNIDO in mid 1980 the above project and UNDP requested UNIDO to finance through UNIDF. In July 1981 UNIDO has approached a potential donor country. Official receipt of reply is being awaited.

- 1) Country: TANZANIA
- 2) Project No.: DP/TAN/80/XXX
- 3) Project Title: Local Manufacture of Automotive Components for Motor Vehicles, Engines, Motor Cycles, Tractors and Trucks
- 4) Amount: US \$ 862,000
- 5) The year it started October 1982 proposed
- 6) a) completed or ongoing pipeline 1982-86 IPF cycle
b) pipeline
- 7) Objectives:
- Development Objectives: To assist in formulation of a long-term programme for rationalized industrial development with due consideration to planned local ancillary industry promotion, thus significantly reducing Tanzania's foreign exchange requirements and develop local technological capabilities with emphasis on a judicious horizontal integration in engineering industrial sector; initiate local production of automotive components.
- Immediate Objectives: To assist the Government of Tanzania to rationalize their proposed production programmes of motor vehicles, motor cycles, diesel engines, tractors and mobile loaders, trucks and land rovers, and auto engines within the framework of Tanzania's proposed ten year plan for metal working and metal processing industries (1979/80 - 1989/90) with special emphasis on horizontal integration and local manufacture of ancillary automotive components.
- 8) Remarks: Under consideration by the Government and UNDP for inclusion under 1982-86 IPF.

- 1) Country: TOGO
- 2) Project No.: IS/TOG/72/018 File OA 321 TOG-7
- 3) Project Title: Manufacturing study on agricultural tools and implements
- 4) Amount: US \$ 15,000
- 5) The year it started was to start in 1973
- 6) a) completed or ongoing - did not start
b) pipeline
- 7) Objectives:
To conduct techno-economic analysis and develop local manufacture
- 8) Remarks: This SIS request by the Government and the relevant project document of UNIDO was not approved by UNDP in May 1973 and therefore, could not be implemented

- 1) Country: TOGO
- 2) Project No.: SI/TOG/78/803
- 3) Project Title: Reconditioning and overhauling of agricultural tractors (project assessment mission)
- 4) Amount: US \$ 2,000
- 5) The year it started 1979
- 6) a) completed or ongoing completed
b) pipeline
- 7) Obj. content:
To assess the problems and recommend a programme of action
- 8) Remarks: A first phase integrated project was developed
(US/TOG/79/10)

- 1) Country: TOGO
- 2) Project No.: DP/TOG/79/004
- 3) Project Title: Assistance to CNPPME (agricultural implements)
- 4) Amount: Around US \$ 230,000 for agricultural machinery project
out of US \$ 586,000 allocated to total projects
- 5) The year it started 1980
- 6) a) completed or ongoing ongoing
b) pipeline
- 7) Objectives:

To promote local manufacture of multi culture agricultural implements
(animal drawn) and establish a pilot production plant
- 8) Remarks: During 1982-86 there is a need to strengthen CNPPME in
agricultural machinery production expansion and product
diversification with emphasis on applied R + D and training.

- 1) Country: Togo
- 2) Project No.: US/TOG/79/110
- 3) Project title: Establishment of an agricultural tractor repair and maintenance centre
- 4) Amount: US \$ 250,000

5) The year it started: proposed for 1981

- 6) a) completed or ongoing pipeline 1982-86 IPF
b) pipeline

7) Objectives:

To develop integrated repair and maintenance system and promote training

- 8) Remarks: Based on SI/TOG/87/803, a project entitled "Reconditioning and overhauling of agricultural tractors" (US/TOG/79/10) US \$ 285,000) prepared in April 1979 for UNIDF financing. Based on recommendations of UNIDO Programming Committee, further analysis, the subject project prepared in December 1979. UNIDO is negotiating as of April 1981 with potential donor countries.

- 1) Country: TOGO
- 2) Project No.: DP/81/TOG/XXX
- 3) Project Title: Assistance to CNFPME: Production and expansion and product diversification (agricultural implements)
- 4) Amount: US \$ 800,000
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing pipeline 1982-86 IPF
b) pipeline
- 7) Objectives.
To increase production, quality and train in applied R + D.
- 8) Remarks: It is proposed that this project be considered for 1982-86 IPF finances.

- 1) Country: TUNISIA
- 2) Project No.:
- 3) Project Title: Establishment of Zonal Workshop Facilities,
Spare Parts Production and Technical Service
- 4) Amount: US \$ 1.481 million
- 5) The year it started proposed 1982
- 6) a) completed or ongoing pipeline 1982-86 IPF
b) pipeline
- 7) Objectives:
Development Objectives: To assist in accelerated promotion of self-reliance in the less developed non-urban areas of the country and to provide a basic engineering infrastructure and technical facilities with a view to develop technical human resources, training, rural employment, utilization of local material, with emphasis on reducing the foreign exchange requirements for imports and to bridge the industrial and technological gap between the regions within the country.
Immediate Objectives: Production of appropriate consumer and critical spare parts and components which are required for the community and to other industries;
Repair and maintenance activities to assist the various major infrastructure development sectors and existing/future industries;
Training of local technical personnel.
- 8) Remarks: Under consideration by the Government and UNDP for 1982-86 IPF
Note: This project may be combined with next project.

- 1) Country: TUNISIA
- 2) Project No.: -
- 3) Project Title: Assistance to SONAM: Strengthening of regional workshops at Jenbouba, Kef and Siliana in agricultural machinery field
- 4) Amount: Prep. Assistance: US \$ 68,000; Project US \$ 1.0 million
- 5) The year it started 1982
- 6) a) completed or ongoing
b) pipeline proposed for 1982-86 IPF
- 7) Objectives:

The project aims at integrated development of agricultural machinery in the country
- 8) Remarks: The project has been submitted in April 1981 to UNDP and the Government for their consideration and inclusion in the 1982-86 UNDP IPF country programme.

- 1) Country: UGANDA
- 2) Project No.: File OA 110 UGA
- 3) Project Title: Agricultural machinery and implements: repair and maintenance programme and tractor hiring scheme
- 4) Amount: around US \$ 250,000
- 5) The year it started was to start in 1974
- 6) a) completed or ongoing - not started
b) pipeline
- 7) Objectives:

To promote a national programme of repair and maintenance through pilot activities
- 8) Remarks: The project document sent to UNDP in July 1973 could not be implemented as it was not included in UNDP IPF country programme.

- 1) Country: UGANDA
- 2) Project No.: SIS 69/451 - UGA - 7
- 3) Project Title: Mechanical harvesting of agricultural crops:
preliminary technical analysis
- 4) Amount: US \$ 9,150
- 5) The year it started (was to be started in 1971)
- 6) a) completed or ongoing cancelled
b) pipeline
- 7) Objectives:

To analyse and guide on development of appropriate harvesting
mechanisms.
- 8) Remarks: The Government official request was on 11. 11. 1968, UNDP
approved on 1. 7. 1969 and project cancelled - UNDP
in July 1971

- 1) Country: UGANDA
- 2) Project No.: SM/UGA/73/015
- 3) Project Title: Manufacture of low cost farm implements
- 4) Amount: US \$ 274,100
- 5) The year it started 1976
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To strengthen Soroti workshop in manufacture of agricultural implements through provision of assistance in engineering design, production technology and training.
- 8) Remarks: The project was terminated in 1980 and was received in 1981. A UNDP/UNIDO project formulation mission has proposed integrated programme of assistance to Soroti (1982-86) with emphasis on interlink with other allied industries in the engineering sector which could provide the ancillary facilities.

- 1) Country: UGANDA
- 2) Project No.: DP/UGA/81/XXX
- 3) Project Title: Preparatory Assistance: Integrated manufacture of low cost agricultural tools, implements and machinery
- 4) Amount: US \$ 396,500

5) The year it started proposed late 1981

- 6) a) completed or ongoing recommended for 1982-8 (pipeline) IPF
b) pipeline

7) Objectives:

To start up the 1982-86 large scale project. During 1981/82, the project aims at (a) establishing interlinks among Soroti agricultural workshop and Uganda hoes/Ugma engineering Corporation/East African Steel mills (b) provide immediate rehabilitation assistance (c) organize institutional framework.

- 8)) Remarks: The project is based on UNDP/UNIDO mission of June 1981. Project document submitted to the Government and UNDP; awaiting approval under UNDP IPF finances.

- 1) Country: UGANDA
- 2) Project No.: DP/UGA/81/XXX
- 3) Project Title: Integrated manufacture of low cost agricultural tools, implements and machinery in Uganda
- 4) Amount: US \$ 2.7 million
- 5) When is it started: proposed 1982
- 6) a) completed or ongoing: proposed 1982-86 IPF pipeline
b) pipeline
- 7) Objectives:

To strengthen Soroti agricultural workshop in applied engineering R + D, manufacture and promotion, with an interlinked programme of ancillary parts manufacture and supply by Uganda hoes/Ugma Engineering Corporation and raw material supply by East African Steel mills.
- 8) Remarks: Project is based on UNDP/UNIDO mission of June 1981. Project document submitted to the Government and UNDP; awaiting approval under UNDP IPF finances.

- 1) Country: UGANDA
- 2) Project No.:
- 3) Project Title: Assistance to the Ministry of Agriculture and Forestry: Strengthening of Repair and Maintenance Network on Tractors, Motors, Engines and other Agricultural Machinery in Rural Areas
- 4) Amount: US \$ 1.481 million
- 5) The year it started July 1982
- 6) a) completed or ongoing pipeline for 1982-86 IPF cycle.
b) pipeline
- 7) Objectives:
Development Objectives: To assist in accelerated promotion of self-reliance in the less developed non-urban areas of the country and to provide a basic engineering infrastructure and technical facilities with a view to develop technical human resources, training, rural employment, utilization of local material, with emphasis on reducing the foreign exchange requirements for imports, and to bridge the industrial and technological gap between the regions within the country.
Immediate Objectives: To establish a zonal workshop with appropriate facilities and work programme to achieve the following specific objectives:
Production of appropriate consumer and critical spare parts and components which are required for the community and to other industries;
Repair and maintenance activities to assist the various major infrastructure development sectors and existing/future industries;
Training of local technical personnel.
- 8) Remarks: Under consideration by the Government.

- 1) Country: UPPER VOLTA
- 2) Project No.: SIS
- 3) Project Title: Agricultural machinery manufacturing feasibility study
- 4) Amount: US \$ 16,000
- 5) The year it started - proposed 1972
- 6) a) completed or ongoing
b) pipeline The Government request of 1972 could not be implemented due to lack of SIS finances.
- 7) Objectives:
To conduct indepth analysis
- 8) Remarks: Project was also not implemented due to non inclusion under country programme and allocation of IPF finances.

- 1) Country: UPPER VOLTA
- 2) Project No.: File OA 220 UPV - 29 and OA 110 UPV
- 3) Project Title: Small scale manufacture of agricultural machinery - pilot production and repair and maintenance
- 4) Amount: US \$ around 300,000
- 5) The year it started (was to start in 1974)
- 6) a) completed or ongoing - did not start
b) pipeline
- 7) Objectives:
To promote rural manufacture
- 8) Remarks: The project concept sent to UNDP in July 1973 - based on Government request of December 1971 and further elaboration - could not be implemented as it was not included in UNDP IPF Country Programme

- 1) Country: UPPER VOLTA
- 2) Project No.: -
- 3) Project Title: Integrated development and manufacture of appropriate agricultural implements, simple metal products and engineering items - supplementary assistance to OPEP
- 4) Amount: US \$ 250,000
- 5) The year it started proposed to start in 1977
- 6) a) completed or copying - did not start
b) pipeline
- 7) Objectives:
 - (a) to initiate preliminary activities in development/manufacture of hand pumps, seeders, shellers, threshers, assembly of bicycles, refrigerators, dusters etc-;
 - (b) to establish a product development engineering unit
 - (c) to train local personnel.
- 8) Remarks: This project was based on projects UPV/71/514, UPV/72/004/B, SM/UPV/75/006, RP/RAF/75/011 and SIDFA recommendations. The project concept was submitted to Government in March 1976. However, this was not included for 1977-81 IPF cycle for UNIDO implementation.

- 1) Country Uppe Volta
- 2) Project No. SI/UPV/81/001
- 3) Project Title Study on the Maintenance of Agricultural Tractors and the Mobile Heavy Equipment
- 4) Amount \$ 23.000
- 5) The year it started 1981
- 6) a) completed or ongoing X (1981) ongoing
b) pipeline
- 7) Objectives
l'estimation du parc des tracteurs et machines agricoles lourdes existants dans le pays;
leur répartition, utilisation et condition de l'état;
l'identification des marques et modèles plus diffusés;
la disponibilité des pièces de rechange et du service après-vente;
l'existence des ateliers ruraux de réparation de machinisme agricole et leur emplacement;
l'estimation du parc des machines actuellement en panne;
proposition d'un programme de maintenance pour les équipements en question;
propositio d'une assistance préventive et des réparations les plus urgentes des tracteurs sur place.

- 1) Country: UPPER VOLTA
- 2) PROJECT NO.:
- 3) PROJECT TITLE: Assistance pour le développement et la promotion du secteur des machines agricoles (Ministry of Industry and Ministry of Agriculture)
- 4) AMOUNT: US \$ 1.2 million
- 5) The year it started: proposed for 1982
- 6) a) completed or ongoing
b) pipeline pipeline IPF 1982-86

7) Objectives:

Objectif immédiat:

- a) Améliorer les outils agricoles utilisés actuellement ou mettre au point de nouveaux outils pour surmonter les obstacles rencontrés dans ce domaine. Si besoin est, on adoptera, expérimentera et modifiera des outils agricoles utilisés ailleurs;
- b) Fournir une assistance pour la planification des achats et l'installation des machines et des équipements nécessaires pour la fabrication de prototypes;
- c) Aider l'Institut et unités actuelles de production d'outils à main, d'outillage et de machines agricoles à renforcer leurs services d'études techniques (production et pièces détachées) en vue de fabriquer des prototypes pour la recherche et la production;
- d) Aider l'Institut et les unités actuelles de production d'outils à main, d'outillage et de machines agricoles à améliorer leurs compétences techniques afin d'accélérer la construction de prototypes;
- e) Aider l'Institut et les unités actuelles de production d'outils à main, d'outillage et de machines agricoles à faire des études de marché et des études technico-économiques sur celles de leurs fabrications qui ont déjà été expérimentées par le centre;
- f) Aider l'Institut et les unités actuelles de production d'outils à main, d'outillage et de machines agricoles à planifier la production en général et à programmer la fabrication en moyenne et grande série.
- 8) Remarks: Proposed to the Government for consideration and inclusion 1982-86 IPF.

- 1) Country: ZAIRE
- 2) Project No.: SIS/70/1133/COB-14
- 3) Project Title: Agricultural machinery and allied equipment manufacture
- 4) Amount: US \$ 16,000
- 5) The year it started - was to start 1971
- 6) a) completed or ongoing - did not start
b) pipeline
- 7) Objectives:
To investigate local production possibilities
- 8) Remarks: This official request of 2. 9. 1970 could not be implemented due to lack of SIS finances.

- 1) Country: ZAIRE
- 2) Project No.: ZAI/73/002/A/01/37
- 3) Project Title: Re-organization of agro-industrial complex at Yangambi
- 4) Amount: US \$ 87,500
- 5) The year it started 1973
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To assist in production and repair and maintenance on industrial input for agriculture and agricultural machinery
- 8) Remarks: A follow up integrated programme was submitted to the Government

- 1) Country: ZAIRE
- 2) Project No.: DP/ZAI/80/007
- 3) Project Title: Programming mission on UNDP/UNIDO assistance to priority industries (includes expert in agricultural machinery and implements).
- 4) Amount: US \$ 10,000
- 5) The year it started 1980
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To analyse the needs of manufacturing and repair and maintenance sector of agricultural machinery
- 8) Remarks: The mission report and recommendations are under review by the Government. An integrated project on development of agricultural machinery industry (design, manufacture and repair and maintenance) is anticipated (\$ 1.0 million IPF recommended).

- 1) Country: ZAMBIA
- 2) Project No.: IS/ZAM/11/803
- 3) Project Title: Rationalization programme of agricultural machinery and implements manufacture
- 4) Amount: US \$ 18,000
- 5) The year it started 1972
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To strengthen manufacturing potential and establish rural production units
- 8) Remarks: Integrated programme of action on design, manufacture and repair and maintenance was submitted to the Government.

- 1) Country: ZAMBIA
- 2) Project No.: -
- 3) Project Title: Integrated development of agricultural machinery industry:
engineering design and development, manufacture
of low cost tractors and intermediate machinery
- 4) Amount: proposed around US \$ 1.2 million
- 5) The year it started proposed 1982
- 6) a) completed or ongoing
b) pipeline recommended 1982-86 UNDP IPF
- 7) Objectives:

To assist the Ministry of Industry and Ministry of Agriculture to develop engineering capabilities and through utilization of existing manufacturing facilities, promote product development and production diversification.
- 8) Remarks: Proposed to the Government and UNDP; awaiting reaction for inclusion under UNL' 1982-86 IPF.

- 1) Country: ZIMBABWE
- 2) Project No.: -
- 3) Project Title: Establishment of zonal workshop facilities: repair and maintenance, spare parts production and training
- 4) Amount: US \$ around 1.6 million
- 5) The year it started proposed 1982
- 6) a) completed or ongoing recommended 1982-86 IPF
b) pipeline
- 7) Objectives:

To promote interlinked repair and maintenance system with emphasis on spare parts fabrication, training and economic utilization of equipment
- 8) Remarks: Proposal submitted to UNDP and Government; awaiting their reaction for inclusion under 1982-86 IPF .

- 1) Country: ZIMBABWE
- 2) Project No.: -
- 3) Project Title: Centre for development and manufacture of agricultural tools, implements and machinery for small farmers and promotion of rural manufacture
- 4) Amount: US \$ 1.8 million
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline pipeline proposed for 1982-86 IPF
- 7) Objectives:

To promote integrated rural agricultural machinery industry development - engineering design, small/medium manufacture, rural entrepreneurship promotion and training;
- 8) Remarks: Proposal submitted to UNDP and Government; awaiting their reaction for inclusion under 1982-86 UNDP IPF.

NORTH AFRICA SUB-REGION

- 1) Country: AFRICA - NORTH REGIONAL (SUDAN, LIBYA, ALGERIA;
TUNISIA, EGYPT)
- 2) Project No.: 1.01.03
- 3) Project Title: UNIDO-IDCAS fact finding mission on agricultural
machinery and implements in the selected African
Arab countries
- 4) Amount: US \$ 15,000
- 5) The year it started 1971
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
To analyse and identify programmes in design and development, manu-
facture, repair and maintenance and training
- 8) Remarks: Appropriate projects were formulated and submitted to the
respective Governments for consideration.

ANNEX B

Africa sub-regional and regional activities in
agricultural machinery (1969-71) and prepared
(1982-86) activities

1. North African Region A 160
2. West Africa and CCAM A 165
 region
3. Central and Sahel A 170
 region
4. Eastern/Southern/
 Central Region A 178
5. Africa Regional A 189
 including LDCs

The project list is not exhaustive; it gives an indication of the magnitude of the activities initiated.

NORTH AFRICA SUB-REGION

- 1) Country: AFRICA-SUBREGIONAL (NORTH AFRICA and ARAB COUNTRIES)
- 2) Project No.: RP/INT/XXX
- 3) Project Title: UNIDO-IDCAS; Elaboration of a regional study on tractors, engines and automotive industry (UNDIO HQ mission)
- 4) Amount: around US \$ 3,000
- 5) The year it started 1971
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To advise IDCAS on a regional feasibility study and draw up terms of reference
- 8) Remarks: A joint UNIDO-IDCAS programme was developed for implementation.

NORTH AFRICA SUB-REGION

- 1) Country: NORTH AFRICAN ARAB REGION (ALGERIA, EGYPT, LIBYA, MOROCCO AND TUNISIA)
- 2) Project No.: VC/IDC/73/070/A
- 3) Project Title: Integrated techno-economic analysis on the manufacture of tractors, engines and automotive/ancillary industry
- 4) Amount: US \$ 20,000 + 40,000 = 60,000
- 5) The year it started 1974 + 1976
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:
UNIDO-IDCAS study in Arab region including North Africa on rationalization of this industrial sector
- 8) Follow up action undertaken directly by IDCAS.

NORTH AFRICA SUB-REGION

- 1) Country: AFRICA (SUBREGIONAL) NORTH AFRICA AND ARAB COUNTRIES
- 2) Project No.: RP/INT/76/XXX
- 3) Project Title: Subregional study on agricultural machinery
(UNIDO HQ mission to Cairo)
- 4) Amount: around SU \$ 3,000
- 5) The year it started 1976
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To advise IDCAS on elaboration of a study on agricultural machinery
- 8) Remarks: Follow up study directly undertaken by IDCAS through subcontract work

- 1) Country: AFRICA (SUBREGION) NORTH AFRICA AND ARAB COUNTRIES
- 2) Project No.: RP/INT/XXX
- 3) Project Title: Advisory mission to AFSED on tractor industry development (UNIDO HQ mission to Sudan)
- 4) Amount: around US \$ 4,000
- 5) The year it started 1976
- 6) a) ~~completed~~ or ongoing completed
b) pipeline
- 7) Objectives:

To advise and assist the Arab Fund for Social and Economic Development (AFSED) on the development of tractor industry in the region in co-operation with the Arab organization for Agricultural Development (AOAD) and IDCAS worked out a methodology by AOAD on regional demand analysis.
- 8) Remarks: The follow up work undertaken directly by AFSED/AOAD/IDCAS

WEST AFRICA AND OCAM SUB-REGION

- AFRICA REGIONAL OCAM (10 MEMBER COUNTRIES):
CAR, MAURITIUS, RWANDA, TOGO, BENIN, SENEGAL and
NIGER (18 January - 17 March 1981) and UPPER VOLTA,
IVORY COAST AND GABON (12 July - 9 August 1981)
- 1) Country:
 - 2) Project No.: VC/RAF/73/043/30.1.02 and VC/RAF/76/042, TS/RAF/76/014
US/RAF/78/164
 - 3) Project Title: UNIDO-OCAM-ECA mission to 10 member countries of
OCAM to initiate pilot projects in agricultural
machinery and implements
 - 4) Amount: US \$ 30,790
 - 5) The year it started 1976
 - 6) a) completed or ongoing
b) pipeline completed
 - 7) Objectives:

To analyse each of the 10 countries with respect to agricultural
machinery and implements and promote national and regional activities
 - 8) Remarks: This programme is within the framework of UNIDO-OCAM agreement
of 19 February 1976. The report was discussed at the Heads
of the Governments (9-10 Feb. 1977) (TS/RAF/014) and action
plan developed.

WEST AFRICA AND OCAM SUB-REGION

- 1) Country: AFRICA REGIONAL: OCAM
- 2) Project No.: US/RAF/78/164 and UF/RAF/78/164 A
- 3) Project Title: Assistance to OCAM in the organization of the "Seminar sur le projet OCAM/UNIDO de machinisme et outillage agricole"
- 4) Amount: US \$ 46,838
- 5) The year it started 1978
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To organize expert group meeting and develop appropriate national/
regional project.
- 8) Remarks: As a result, three techno-economic profiles on pilot manufacture of agricultural implements and general engineering spare parts, production of simple tractor and solar technologies were prepared. Further regional co-operative projects and network of agricultural machinery centres have been envisaged. The official request and regional IPF finances are being awaited.

- 1) Country: AFRICA SUBREGION: OCAM COUNTRIES
(CAR, MAURITIUS, RWANDA, GABON, TOGO, BENIN,
SENEGAL, NIGER, UPPER VOLTA, IVORY COAST)
- 2) Project No.: -
- 3) Project Title: Promotion of agricultural machinery in OCAM countries
- 4) Amount: US \$ 340,000
- 5) The year it started was to start in 1978
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:
To promote integrated development of agricultural machinery
- 8) Remarks: This request was based on UNIDO-OCAM-ECA Joint mission to OCAM countries and OCAM Minister's Council Meeting of February 1977. However, no regional finances were available.

- 1) Country: AFRICA REGIONAL: Ivory Coast, Zambia, Mozambique, Uganda, Senegal, Nigeria, Malawi, Swaziland, Sudan, Tanzania, Upper Volta, Botswana, Lesotho, Kenya
- 2) Project No.: VC/SWA/76/076
- 3) Project Title: Techno-economic workshop on Swazi Tinkabi small low cost tractor (October 1978)
- 4) Amount: around US \$ 60,000
- 5) The year it started: October 1978
- 6) a) completed or on order completed
b) pipeline
- 7) Objectives:

To promote exchange of experience and further co-operation among developing countries in development and manufacture of small low cost tractor suited to the needs of Africa
- 8) Remarks: A number of co-operative concepts were developed and follow up action through national activities

- 1) Country: WEST AFRICA
- 2) Project No.: -
- 3) Project Title: Appropriate technology and promotion of simple agricultural tools, animal drawn implements and manually operated equipment through pilot manufacture in selected developing countries of West Africa
- 4) Amount: around US \$ 1-2 million
- 5) The year it started 1980/81
- 6) a) completed or ongoing
b) pipeline not initiated
- 7) Objectives:
 - (i) To initiate and establish pilot demonstration units as a nucleus for further establishment of such plants, with emphasis on appropriate technology transfer, co-operation among member countries, import substitution, strengthening of engineering design capabilities, production of appropriate hand tools, implements and simple equipment as well as grain storage bins and training of local personnel.
 - (ii) To promote in selected countries out of 16 West African countries, of which six belong to the Least Developed group, establishment of integrated plants for agricultural equipment and related engineering industries, particularly in respect to the LDCs. To promote effective co-operation between developing countries, in particular as regards the LDCs in the selected sub-region, through a proposed action oriented programme aimed at an exchange of experiences and the creation of a mechanism for obtaining the required technology and expertise.
 - (iii) To accelerate and/or promote the establishment of the manufacture and maintenance of agricultural tools, implements and simple machinery in the LDCs, thus upgrading them to the minimum level of that attained by the "intermediate" level countries.
 - (iv) To promote under phase B the creation among interested countries, of a Regional Network on Agricultural Machinery in a sub-region of Africa.
- 8) Remarks: No appropriate finances allocated.

CENTRAL AND SAHEL REGION

- 1) Country: SAHEL REGION
- 2) Project No.: RP/RAF/75/011
- 3) Project Title: Exploratory mission to Sahel: manufacture of simple agricultural tools and implements
- 4) Amount: US \$ 7,700
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Analysis of present status need and potential and a programme formulation on development, manufacture and training
- 8) Remarks: As a result 2 sub-regional projects
(a) simple agricultural tools
(b) irrigation equipment submitted to UNSO/CILSS
However, these sub-regional projects not implemented due to lack of regional IPF finances.

- 1) Country: SAHEL COUNTRIES
- 2) Project No.: VC/RAF/75/024
- 3) Project Title: Local manufacture of irrigation pumps, wind mills, water drilling equipment, pipes and allied irrigation machinery in three selected countries of Sahel
- 4) Amount: US \$ 2.34 million
- 5) The year it started proposed for 1975
- 6) a) completed or ongoing
b) pipeline did not start (recommended for 1975-80)
- 7) Objectives:
To expand existing three production units in each country into a model pilot demonstration manufacturing plant, with emphasis on import substitution, manufacture of appropriate equipment and regional training.
- 8) Remarks: This project was based on UNIDO activities and ECA reports. This project was submitted to CILSS/UNSO in 1975. However, no UN finances or special donor finances were allocated. UNIDO also approached donor countries in 1975; one country expressed interest to consider in 1976. However, in 1976 no finances were allocated.

1) Country Africa Regional Sahel

2) Project No.

3) Project Title Appropriate Technology and Promotion of Simple Agricultural Tools Animal Drawn Implements and Manually Operated Equipment - Sahel and Central/West Africa.

4) Amount \$ 2,215 million

5) The year it started proposed for 1975

6) a) completed or ongoing did not start (recommended for 1976-80)

b) pipeline X

7) Objectives

To initiate and establish pilot demonstration units as a nucleus for further establishment of such plants, with emphasis on appropriate technology transfer, co-operation among member countries, import substitution, strengthening of engineering design capabilities, production of appropriate hand tools, implements and simple equipment as well as grain storage bins and training of local personnel.

8) Remarks: This project was based on ECA reports and UNIDO activities. This project was submitted to CILSS/UNSO in 1975. However, no UN finances or special donor finances were made available so, the project did not start.

- 1) Country: AFRICA REGIONAL - SAHEL
- 2) Project No.: RP/RAF/80/015
- 3) Project Title: Pilot unit for the manufacture of sprinkler irrigation unit (preparatory mission)
- 4) Amount: US \$ 14,800
- 5) The year it started To start in 1981
- 6) a) completed or ongoing ongoing
1) pipeline
- 7) Objectives:
To analyse and establish parameters for local development and manufacture
- 8) Remarks: Expert will be fielded in 1981; this initial project is financed by UNIDO's own funds.

- 1) Country: AFRICA SUBREGION - SAHEL
- 2) Project No.: - RP/REF/80/004
- 3) Project Title: Assistance to Sahel Institute at Mali: Agricultural Machinery Development
- 4) Amount: around US \$ 84,000
- 5) The year it started 1981/82
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:

To assist Sahel Institute in evaluation of existing local manufacture of agricultural machinery and irrigation equipment, formulate a development programme and help establish a regional network for this industry, help set up a co-ordination unit at the institute.

- 8) Remarks: expert to be fielded in 1981/82; this initial project is financed by UNIDO's own funds.

- 1) Country: AFRICA REGIONAL: SAHEL, UPPER VOLTA, MALI, MAURITANIA, NIGER, SENEGAL, CHAD, GAMBIA, CAPE VERDE
- 2) Project No.: DP/RAF/XXX
- 3) Project Title: Development and local pilot manufacture of simple irrigation pumps in Sahelian countries
- 4) Amount: around US \$ 3.0 million
- 5) The year it started proposed for 1982-86 Regional Africa IPF
- 6) a) completed or ongoing not considered
b) pipeline
- 7) Objectives:

To establish/strengthen 2 Mechanical engineering plants in the sub-region and transform the same into a model pilot demonstration unit with emphasis on import substitution, manufacture and training of local personnel on production technology on a subregional basis.
- 8) Remarks: This project concept was submitted by UNIDO to UNDP NY on 1 April 1981. But not discussed at the UNDP Regional Inter-Agency Meeting at Addis Ababa 21-25 April 1981 as this was not pre-selected by UNDP NY. Thus this project was not included by UNDP NY for further consideration.

- 1) Country: SAHEL REGION (CHAD, MALI, NIGER)
- 2) Project No.: -
- 3) Project Title: Promotion of manufacture of agricultural tools, simple operated implements and manually operated equipment and regional training
- 4) Amount: around US \$ 2.0 million
- 5) The year it started proposed for 1982
- 6) a) completed or ongoing
b) pipeline proposed for subregion 1982-86 cycle.
- 7) Objectives:

To promote local manufacture through expansion of existing facilities and initiate regional training and rural entrepreneurship promotion
- 8) Remarks: This proposal submitted to UNDP within sub-regional projects 1982-86 with emphasis on LDCs, draught control and rural development. However, this project was not considered by UNDP in March 1981.

- 1) Country: AFRICA SUB-REGIONAL: SAHEL
- 2) Project No.: DP/RAF/XXX
- 3) Project Title: Assistance to Sahel Institute in the training of technical personnel in the utilization and maintenance of irrigation equipment
- 4) Amount: US \$ 1.07 million
- 5) The year it started proposed for 1982-86 regional IPF
- 6) a) completed or ongoing pipeline
b) pipeline
- 7) Objectives:

To strengthen the activities of Sahel Institute in development and implementation of an integrated sub-regional repair and maintenance programme and activities.
- 8) Remarks: Project endorsed by Sahel Institute and ECA based UNDP Regional Inter-Agency Meeting at Addis Ababa in April 1981 this project has been submitted to UNDP NY on 5 June 1981 by UNIDO for consideration.

EASTERN/SOUTHER/CENTRAL AFRICA

SUBREGION

- 1) Country: AFRICA: SUBREGIONAL - EAST AFRICA
TANZANIA, UGANDA, KENYA, ZAMBIA
- 2) Project No.: File TS/421/1 (II)
- 3) Project Title: UNIDO-ECA co-operative project: project formulation
mission in agricultural machinery in East Africa
- 4) Amount: US \$ 35,000
- 5) The year it started was to be organized in Dec. 1969-Feb. 1970)
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:
To identify appropriate projects in East African countries
- 8) Remarks: The project could not be implemented due to lack of
finances.

EASTERN/SOUTHERN/CENTRAL AFRICA

SUBREGION

- 1) Country: AFRICA REGION; WEST AFRICA (SWAZILAND, TANZANIA, KENYA, BOTSWANA, LESOTHO. ZAMBIA, ETC)
- 2) Project No.: SIS/SWA/72
- 3) Project Title: Market survey - agricultural tractors
- 4) Amount: US \$ 30,000
- 5) The year it started 1973
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To analyse the potential for small tractors (18 Hp riding) in East African countries and recommend ways and means of local manufacture and subregional co-operations
- 8) Remarks: A specific programme of action at national levels and regional levels were recommended.

EASTERN/SOUTHERN/CENTRAL AFRICA

SUBREGION

- 1) Country: AFRICA - primarily LDCs (ETHIOPIA, LESOTHO, SUDAN, UGANDA, TANZANIA and UPPER VOLTA)
Note: also KENYA and EGYPT participated
- 2) Project No.: VC.1.10.09
- 3) Project Title: Manufacturing development clinic for animal drawn implements and hand operated agricultural mechanics (India 21-30 October 1974)
- 4) Amount: US \$ 20,000 (for LDC Africa)
- 5) The year it started: October 1974
- 6) a) completed or ongoing: completed
b) pipeline
- 7) Objectives:

To provide a techno-economic and practical forum on exchange of experience through field performance, factory analysis and product specification discussions and develop a TCDC programme
- 8) Remarks: The follow up action which included provision of drawings, prototypes and experts of 6 LDC of Africa could not be realized due to lack of finances.

EASTERN/SOUTHERN/CENTRAL AFRICA
SUBREGION

- 1) Country: AFRICA REGIONAL: SOUTH AND EASTERN SUBREGION
(BOTSWANA, KENYA, LESOTHO, MALAWI, SOMALIA,
SWAZILAND AND ZAMBIA)
- 2) Project No.: File OA 110 Africa and OA 321 RAF-28
DP/RAF/74/060
- 3) Project Title: Pilot demonstration plant in selected countries:
Manufacture of agricultural tools, animal drawn
implements and simple hand operated equipment and
regional training
- 4) Amount: US \$ 425,000
- 5) The year it started was to be started in 1975
- 6) a) completed or ongoing - did not start
b) pipeline
- 7) Objectives:

To promote sub-regional programme in manufacture of agricultural
machinery through pilot production and training
- 8) Remarks: This project document prepared by UNIDO in May 1974 was
submitted to UNDP NY who expressed great interest. However,
in September 1974, and February 1975, UNDP NY did not allocate
IPF finances during 1974-77 and recommended UNIDO submitting
this proposal again in 1976 for 1977-81 IPF cycle.

- 1) Country: AFRICA - REGIONAL (TANZANIA, SUDAN AND EGYPT)
- 2) Project No.: VC/RAF/75/XXX
- 3) Project Title: Promotion of low cost power tiller evaluation and local manufacture
- 4) Amount: around US \$ 40,000
- 5) The year it started 1975
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

To assist through technology transfer from a developing country of Asia to above 3 developing countries of Africa.
- 8) Remarks: This UNIDO-China (PR) co-operative project included provision of prototypes and short term experts. Follow up reported through bilateral channels.

- 1) Country: AFRICA SUBREGION: EASTERN - TANZANIA, BOTSWANA, LESOTHO
- 2) Project No.: TF/RAF/74/009
- 3) Project Title: Feasibility study on establishment of demonstration manufacturing plants on hand tools and animal drawn implements
- 4) Amount: US \$ 47,320
- 5) The year it started 1976
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To analyse the requirements and develop manufacturing activities
- 8) Remarks: In Tanzania, a UNIDO project on blacksmith development initiated. In Lesotho 1981-86 project under consideration. by the Government under IPF. In Botswana follow up project not yet included under 1981-86 IPF.

SUBREGION

- 1) Country: AFRICA SUBREGION: EAST AND CENTRAL
- 2) Project No.: -
- 3) Project Title: Co-operative pilot integrated agricultural tools/
implements and rural technology development and
promotion suited to the needs of Africa
- 4) Amount: US \$ 1.0 million
- 5) The year it started was to start in 1977
- 6) a) completed or ongoing - recommended for 1977-81 programme
b) pipeline
- 7) Objectives:

To promote rural development and agricultural machinery production
- 8) Remarks: The project document submitted for inclusion under 1977-81
Africa Regional IPF was not considered and no IPF finances
were allocated

SUBREGION

- 1) Country: AFRICA SUBREGIONAL - CENTRAL/EAST AND SOUTHERN
- 2) Project No.: VC/SWA/76/076
- 3) Project Title: Techno economic workshop on Swazi Tinkabi small (18 Hp) low cost tractors: manufacturing promotion and regional co-operation
- 4) Amount: around US \$ 30,000
- 5) The year it started 1978
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Regional meeting of 15 developing countries of Africa at Swaziland for 10 days to discuss co-operation on small tractor development/manufacture
- 8) Remarks: Follow up projects were taken up at national level in a few countries

EASTERN/SOUTHERN/CENTRAL AFRICA

SUBREGION

- 1) Country: AFRICA REGIONAL - CENTRAL/EASTERN AND SOUTHERN AFRICA
- 2) Project No.: DP/RAF/XXX
- 3) Project Title: A sub-area programme network on "Development and Rural Manufacture of Low Cost Agricultural Equipment suited to the needs of small and medium farmers in Central/Eastern and Southern Africa".
- 4) Amount: US \$ 2.7 million
- 5) The year it started proposed for 1982-86 Africa Regional IPF
- 6) a) completed or ongoing pipeline recommended 1982-86 Africa
b) pipeline regional IPF
- 7) Objectives:

To promote and implement a programme network on applied R and D and local manufacture of hand tools, animal drawn implements and simple agricultural machinery.
- 8) Remarks: This project was submitted by UNIDO to UNDP NY on 1 April 1981. But was not discussed at the UNDP Regional Inter-Agency Meeting at Addis Ababa 21-25 April 1981 as this was not pre-selected by UNDP NY. Thus, this project was not included by UNDP NY for further consideration.

- 1) Country: AFRICA REGIONAL
- 2) Project No.: XXX
- 3) Project Title: Low cost agricultural equipment manufacture workshop
(Meeting)
- 4) Amount: proposed \$ 30,000
- 5) The year it started proposed for 1973
- 6) a) completed or ongoing not implemented
b) pipeline
- 7) Objectives:
To discuss and develop national level and subregional level
programmes on pilot production and extension
- 8) Remarks:
Although this project document was prepared based on the request of
selected Governments and experts, it could not be implemented due to
lack of appropriate finances.

- 1) Country: AFRICA REGIONAL
- 2) Project No.: XXX
- 3) Project Title: Repair and Maintenance Workshop (Meeting)
- 4) Amount: around \$ 25,000
- 5) The year it started was proposed for 1973
- 6) a) completed or ongoing
b) pipeline not implemented
- 7) Objectives:
To discuss various aspects of repair and maintenance of agricultural machinery, including spare parts manufacture and training and develop national and subregional programme of action.
- 8) Remarks:
Although this project document was prepared based on the request of selected Governments and experts, it could not be implemented due to lack of appropriate finances.

- 1) Country: AFRICA REGIONAL
- 2) Project No.: VC/1.01.11
- 3) Project Title: Manufacturing promotion meeting on small low cost agricultural tractors and power tillers for Africa
- 4) Amount: around US \$ 30,000
- 5) The year it started (was proposed to be held in March 1973 in Holland in co-operation with the International Commission on Agricultural Engineering)
- 6) a) completed or ongoing - was not initiated
b) pipeline
- 7) Objectives:

To promote co-operation between industrialized countries and selected countries of Africa.
- 8) Remarks: The project could not be implemented due to lack of finances. However, similar regional workshop held at Swaziland in 1976.

- 1) Country: AFRICA REGIONAL - LDCs
- 2) Project No.: VC 1.10.10
- 3) Project Title: Meeting on repair and maintenance of agricultural machinery and selection of workshop equipment and mobile units
- 4) Amount: around US \$ 80,000
- 5) The year it started was proposed to be held during May-June 1973 at Moscow, in co-operation with USSR
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:
To develop the repair and maintenance capabilities of selected African countries
- 8) Remarks: The project could not be implemented due to lack of finances.

- 1) Country: AFRICA REGIONAL (a global project includes Africa -
North: Algeria, Egypt, Morocco, Sudan and Tunisia;
West: Congo, Ghana, Nigeria and Senegal
East: Kenya, Mauritius, Somalia, Tanzania and Zambia)
- 2) Project Number:
- 3) Project Title: Analysis and "report on low cost tractors suited to
the needs of the developing countries"
- 4) Amount: around US \$ 20,000
- 5) The year it started July 1973
- 6) a) completed or ongoing completed
b) pipeline
- 7) Objectives:

Through direct contact with the countries and international experts,
analysis and preparation of a report UNIDO/ITD/203 dated 25 July 1973
entitled "Report on small low cost tractors suited to the needs of
the developing countries".
- 8) Remarks: This report was circulated to all Governments including
those of Africa and further follow up on promotion for
local development and manufacture was initiated.

AFRICA REGIONAL INCLUDING LDGS

- 1) Country: AFRICA REGIONAL (6 LDGS)
- 2) Project No.: VC/1.10.09
- 3) Project Title: Manufacturing development clinic for agricultural tools, animal-drawn implements and simple manually-operated equipment
- 4) Amount: around US\$ 20,000

- 5) The year it started 1974

- 6) a) completed or ongoing completed during 12-30 Oct. 74. The clinic was held in India and was attended by Ethiopia, Lesotho, Sudan, Uganda, Tanzania, Upper Volta (and ARE).
- b) pipeline

- 7) Objectives:
To see field demonstration of selected tools, implements and equipment, visit manufacturers and discuss the manufacturing technology and programme promotion for local manufacture of most suitable products.
- 8) Remarks:
The participants identified a number of tools, implements and equipment and requested UNIDO/UNDP assistance in local pilot production.

- 1) Country: INTERREGIONAL PROJECT
- 2) Project No.: OA /320/INT
- 3) Project Title: Manufacturing promotion of agricultural tools, animal drawn implements and simple manually operated equipment in 10 least developed countries
- 4) Amount: US \$ 200,000
- 5) The year it started 1975 proposed
- 6) a) completed or ongoing
b) pipeline did not start
- 7) Objectives:
To provide fellowship on product identification, to supply as prototypes so identified simple agricultural machinery, to promote interrelationship among engineering design, testing and manufacture and promote local manufacture in each of 10 LDCs utilizing existing facilities.
- 8) Remarks: This project was based on the project "manufacturing development clinic for agricultural tools, animal drawn implements and simple manually operated equipment" (project VC.1.10.09) held at New Delhi, India, in October 1974 which was attended by LDCs and from Africa - Ethiopia, Lesotho, Sudan, Uganda, Tanzania and Upper Volta.

This follow up project could not be implemented due to lack of finances.

- 1) Country: AFRICA LDCs
- 2) Project No.: VC/INT/74/152/30.1.02
- 3) Project Title: Preparation of a booklet on simple agricultural implements manufacture
- 4) Amount: US \$ 10,000
- 5) The year it started 1977
- 6) a) completed or ongoing
b) pipeline completed
- 7) Objectives:
To provide general specification and production requirements on agricultural implements to selected LDCs
- 8) Remarks: Report distributed to LDCs for their information

- 1) Country: AFRICA REGIONAL 1977-81
- 2) Project No.: -
- 3) Project Title: Centre for agricultural machinery design, adaptation and transfer of industrial technology
- 4) Amount: US \$ 800,000
- 5) The year it started was to start in 1977
- 6) a) completed or ongoing - not initiated
b) pipeline
- 7) Objectives:

To promote regional co-operation with selected African countries and their institutions on design and development
- 8) Remarks: This project proposed for 1977-81 Africa Regional Country Programme was not included in the same.

- 1) Country: AFRICA: LDC
- 2) Project No.: -
- 3) Project Title: Establishment of integrated repair, maintenance and training system in agricultural machinery and implements in a selected LDC of Africa
- 4) Amount: around US \$ 2.0 to 3.0 million
- 5) The year it started under discussions
- 6) a) completed or ongoing
b) pipeline
- 7) Objectives:

To establish integrated central, zonal and rural R and M in workshops and interlinked repair and maintenance systems as a pilot demonstration project which may serve as a regional model at a later date. Training at regional level is incorporated in the project.
- 8) Remarks: UNIDO is discussing this project with an interested donor country.

- 1) Country: AFRICA REGIONAL - UNDP/OAU/UNIDO
co-operative programme
- 2) Project No.: DP/RAF/XXX
- 3) Project Title: UNDP-OAU-UNIDO co-operative programme on grain
storage and post harvest technology equipment deve-
lopment
- 4) Amount: around US \$ 2.0 million
- 5) The year it started proposed for 1982-86 Regional Africa IPF
- 6) a) completed or ongoing not considered
b) pipeline
- 7) Objectives:

To promote sub-regional harmonization of grain storage and post
harvest technology equipment development and possible local
fabrication/manufacture and strengthen selected institutions/
engineering production units in organizing co-operative training
programme and information exchanges on products and technology.
- 8) This project concept was developed based on UNIDO-OAU discussions
and submitted by UNIDO at the UNDP Inter-Agency Meeting at Addis Ababa
in April 1981. This project was endorsed by ECOWAS and ECA. However,
this project was not selected by UNDP for further consideration.

- 1) Country: AFRICA REGIONAL
- 2) Project No.: DP/RAF/XXX
- 3) Project Title: Promotion of the development and manufacture of improved agricultural implements machinery and equipment
- 4) Amount: around US \$ 1.2 million
- 5) The year it started submitted as an ECA-UNIDO/FAO co-operative project for 1982-86 Regional IPF
- 6) a) completed or ongoing -
b) pipeline
- 7) Objectives:

To promote regional co-operation in engineering design, adaptation and manufacture of simple and intermediate agricultural machinery. (primarily studies and analysis through experts visiting various countries)
- 8) Remarks: (i) Project proposal jointly presented by ECA and UNIDO at UNDP Regional Inter-Agency Meeting at Addis Ababa 21-25 April 1981.
(ii) It is reported that this project has been submitted to UNDP NY by ECA for consideration
(iii) No reaction yet received from UNDP NY
(iv) If project approved this project will be executed by ECA in co-operation with UNIDO and FAO





