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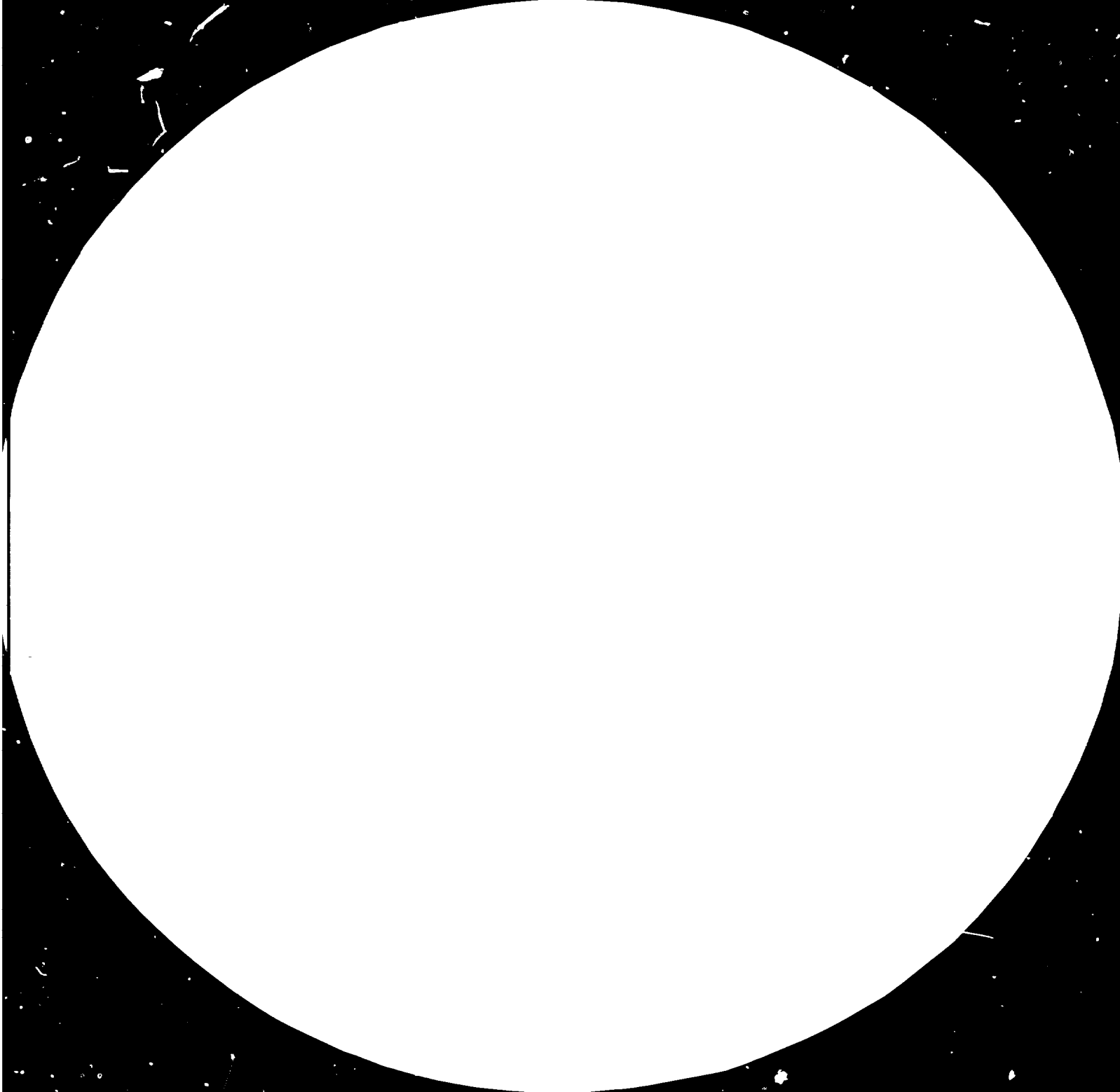
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A PROJECT CONCEPT  
FOR UNIDO TECHNICAL ASSISTANCE  
TO THE  
AGRICULTURAL MACHINERY SECTION

STRENGTHENING AND EXPANSION OF THE  
EXISTING AGRICULTURAL MACHINERY AND  
IMPLEMENTS DESIGN, ADAPTATION AND TESTING SECTION  
AND TRANSFORMATION INTO AN  
INDUSTRY ORIENTED ENGINEERING ACTIVITY .

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UNIDO  
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PREFACE: Factors for Consideration by the Government

1. This proposal for a project "Strengthening and Expansion of Agricultural Machinery Section" is with a view to transform the same into an industry oriented national institution, with capabilities to contribute to the regional requirements at an appropriate later date.
2. The purpose of design, development and adaptation activities is to suit a manufacturing programme to local conditions and to assist industry to become self-reliant in matters of engineering design and development and in adaptation of technology acquired from abroad. Even if a basic design of a machine is available, it cannot always be used without alteration; to adapt the design and manufacture the machine requires engineering capabilities. The modification of designs may be a major task, especially in terms of selection of materials, since it may involve further design and development. Thus, activities in this field consist in establishing not only the physical facilities but also programmes for training local personnel in engineering techniques. It may be necessary in the beginning to analyse existing facilities and items to be manufactured, identify future design requirements and formulate projects. A design, development and adaptation programme may be integrated with a manufacturing enterprise or treated as an independent activity depending on the needs of the country.
3. Quality control is an essential part of any industrialization programme. It serves both the manufacturer and his customer by ensuring that the product conforms to its design specification. Laboratory and field tests show how the product performs in use and suggest how the design should be altered. Ultimately, quality control activities affect every aspect of the enterprise, as it involves an engineering approach to problems of design, adaptation and local assembly/manufacture.

4. It is recommended that this activity be initiated as a co-operative programme between the national agricultural machinery section and an agricultural machinery institute of an industrialized country, with active support and participation by UNIDO.
5. The proposed project consists of three years duration including preproject activity. It is estimated that a total of UNDP/UNIDO contribution may be around \$ 155,000 of which UNDP contribution may be around \$ 95,000. The recommended total Government contribution may be around \$ 60,000 plus \$ 20,000 reserve funds. The details of the magnitude and source of financing (UNDP country programming IPF, UNIDO Voluntary Contributions and UNIDO Regular Programme) may be worked out after this project concept is accepted by the government.
6. If the above project proposal is acceptable in principle, a draft project data sheet for a preproject activity (project formulation mission) is detailed in Appendix I.



A Proposal (Project Concept) for UNIDO  
Technical Assistance

1. Title of the Project

Strengthening and Expansion of Agricultural Machinery Design,  
Development, Adaptation and Testing Activities

2. Objective

To transform Agricultural Machinery development and testing activities into an industry oriented professional national institution with catalytic and nucleus activities in the development of engineering technical manpower. This proposal is expected to lay the foundation for transforming the existing facilities into an integrated regional institute at a later date. Specifically the following are the main points of the present proposal:

- Development of technical manpower in engineering design and development capabilities;
- Act as a catalyst in local manufacture of suitable products through active liaison with industry, potential entrepreneurs; and
- Act as the nucleus for a national agricultural engineering professional society and manufacturers association and a centre for dissemination of technological information;
- Assist the local small and medium scale manufacturers in product introduction, diversification and production through technical service especially through provision of prototypes, design and drawings, standards, material selection and heat treatment techniques, product performance evaluation and industrial and engineering technical service in industrial engineering and quality control;
- Assist the large scale manufacturers in introduction of right products for manufacture through integrated pre-manufacturing activities, assist in component development and undertake product performance analysis on a commercial basis;
- Assist the Government in formulation of national policies with respect to import, manufacture, marketing and development of infrastructure.

3. Duration

Four years (one year of pre-project activities and three years operational activity).

4. Highlights of the Project

This integrated project aims at the re-inforcing of the existing facilities (through provision of prototype workshop, laboratory testing and quality control instruments and equipment, technological information material such as journals, standards, literature etc.) and strengthening of the existing technical manpower through provision of experts and fellowships and formulating an overall work programme. This will also facilitate existing set-up to be the nucleus of testing authorities. This proposal does not in any way effect the existing and planned programme of present activities, but supplements the activities for which there is a recognized need and a desire for expansion.

5. Recommended Local Executive Agency

Agricultural Machinery Section, Ministry of Agriculture or Ministry of Industry

6. In co-operation with

- Public/Corporate Sector Manufacturers of Agricultural Machinery
- Private Sector Manufacturers of Agricultural Machinery
- Agricultural Engineering Institutions
- Allied Metalworking and Machinery Sector

7. Recommended UNDP/UNIDO Finances \*

<u>Item</u>	<u>Amount</u>	<u>Possible Sources *</u>
-------------	---------------	---------------------------

(all in US dollars)

A. Pre-project Activity

- |   |          |            |
|---|----------|------------|
| 1. Project formulation and project report preparation mission - 1 expert/1 m/m with UNIDO staff member - 1 week (see Appendix I for draft project data sheet) | \$ 4,000 | IPF or SIS |
|---|----------|------------|

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\* NOTE: The possible sources of financing are UNDP country programming (IPF), Special Industrial Services (SIS), UNIDO Voluntary Contribution Finances (UNIDO VC), and UNIDO Regular Programme (UNIDO R.L.). The details of magnitude and source of financing may be worked out during the "Preproject Activity" if this project concept is acceptable to the Government.

<u>Item</u>	<u>Amount</u>	<u>Possible Sources</u>
	(all in US dollars)	
<b>B. <u>Operational Activity</u></b>		
<b>I. <u>Equipment</u> (supplementary)</b>		
1. Prototype workshop machinery	20,000	IPF
2. Laboratory and quality control	15,000	IPF or Voluntary Contr.
3. Prototype machines, dies, jigs and fixtures, designs, standards, etc.	20,000	IPF or Voluntary Contr.
4. Technological Literature and Aids	3,000	UNIDO Voluntary Contr.
5. Design Engineering Office Equipment	5,000	IPF or UNIDO Voluntary Contr.
<b>II. <u>Fellowships</u></b>		
<b>(a) Training abroad</b>		
2 local engineers 4 m/m each	10,000	UNIDO Voluntary Contr. or UNIDO R.P.
<b>(b) Internal Fellowships and technical meetings</b>		
	10,000	UNIDO Voluntary Contr.
<b>III. <u>Experts</u></b>		
1. Project manager 18 m/m and UNIDO staff member 1 week (mid-term review)	45,000	IPF
2. 1 associate expert 18 m/m	8,000	IPF
3. 1 UN volunteer 12 m/m	NIL	
<b>IV. <u>Consultants</u></b>		
As required	10,000	IPF
Total	160,000	
	=====	

Note: The detailed list of equipment, prototype machines, technological literature etc. as well as distribution pattern of finances could be worked out during "preproject activity".

8. Recommended Contribution from the Government

(a) Land and Buildings: \$ 10,000

It is recommended that the existing facilities at an existing Agricultural Machinery Centre be utilized. However, some supplementary facilities may have to be added.

(b) Local counterparts:

- (i) Technicians and engineers - 4 nos
- (ii) Graduate engineers - trainees - 4 nos
- (iii) Workshop personnel - mechanics - 3 nos

Note: Selected local counterparts are to be trained abroad under UNIDO fellowships.

(c) Raw material supply

Raw material for prototype production \$ 10,000 per year total \$30,000  
allied expenses for product performance evaluation

(d) Maintenance and miscellaneous expenses

\$ 3,000 per year total \$ 9,000

(e) Working capital \$10,000

(f) Reserve funds \$20,000

9. Recommended work programme

It is recommended that the work programme be elaborated as a part of the project document to be prepared during the pre-project activity. This should include: -

- product to be developed and product performance evaluation to be undertaken based upon the needs of agricultural and industrial sector;
- technological information dissemination and technical service systems;
- acting as the nucleus of a national Agricultural Engineering Society and manufacturers association;
- technical training and manpower development programme;
- assistance to the industry in product improvement and product diversification.

It is recommended that any manufacturing programme should be based upon the development, testing and extension work that may be undertaken by this agricultural machinery section. Therefore, it is very essential that the activities of this Section should be in close co-operation with the industrial sector.

It is also recommended that under UNIDO assistance a number of prototypes of above machines and implements from industrialized and other developing countries are made available on a priority basis to the agricultural machinery section and also to provide testing and development machinery and instruments and technical journals. It is also recommended that local technicians/counterparts are sent under UNIDO fellowship to a developing country or industrialized country to study and select such prototype machines and implements, as well as secure training.

10. Recommended mode of project implementation and time schedule: \*

<u>Item</u>	<u>Duration</u>	<u>Dates</u> *
a. Pre-project activity (project formulation mission see Appendix 1 for project data sheet)	1 month	
b. Fellowships (training abroad)	4 months	
c. Placing order for machinery Placing order for prototype implements		
d. Building modification		
e. Appointment of project manager		
f. Appointment of associated expert and UN volunteer		
g. Installation of machinery		
h. Project operation		

\* NOTE: To be indicated by the government

11. Pre-project Activity: Project formulation and project document (project report) Preparation Mission.

A pre-project mission will elaborate this concept and prepare a comprehensive project document. The relevant draft project data sheet is enclosed as Appendix I for the consideration of the Government for UNIDO technical assistance. It is recommended that the pre-project activity be undertaken by UNIDO in co-operation with a national agricultural engineering institute of an industrialized country so that implementation of the project is carried out as a co-operative programme with UNIDO's active support and participation.

APPENDIX I  
DRAFT PROJECT DATA SHEET

UNIDO/UNDP Technical Assistance to the Government

1. Project Title: Pre-project Activity: Assistance to Agricultural Machinery Section: Project Elaboration and Project Report Preparation
2. Date of formal request recorded: (to be filled by the Government)
3. Government Department submitting the Request: (to be filled by the Government)
4. Government Agency concerned with the Project: Agricultural Machinery Section or manufacturing industry
5. Description of the Project: In order to assist the Government in formulating a project including strengthening and expanding the activities of Agricultural Machinery Section with specific orientation towards the needs of the industrial sector and to prepare a comprehensive project report, a UNIDO team consisting of one expert for a duration of one month will undertake the following tasks, together with a UNIDO staff member for a duration of one week:
  - (a) Review the existing facilities and work programme as well as future plans of the Agricultural Machinery Section;
  - (b) Identify the needs of the industry, and possible areas of contribution by existing agricultural machinery section;
  - (c) Identify the need for establishment of professional engineering societies and manufacturers associations and define the role and possible contribution by the proposed agricultural machinery section;
  - (d) In consultation with the Government officials prepare a comprehensive project report on the possible strengthening and expansion of existing facilities detailing supplementary physical facilities, working machinery and laboratory equipment, prototypes, finances, technical personnel and work programme;
  - (e) Recommended ways and means of realization of the above project proposal.
6. Background information: To be filled by the Government
7. Relationship with other technical assistance projects:
8. Project component, duration and estimated cost

<u>Field of activity</u>	<u>Duration</u>	<u>Cost (US\$)</u>
1. Mechanical engineer *	1 m/m	3,000
2. UNIDO staff	½ m/m	1,000
	Total	4,000

\* NOTE: It is recommended that this mechanical engineering expert be secured through a National Agricultural Machinery Institute of an industrialized country.

9. Project approved

for UNIDO:

Date:

for UNDP:

Date:

