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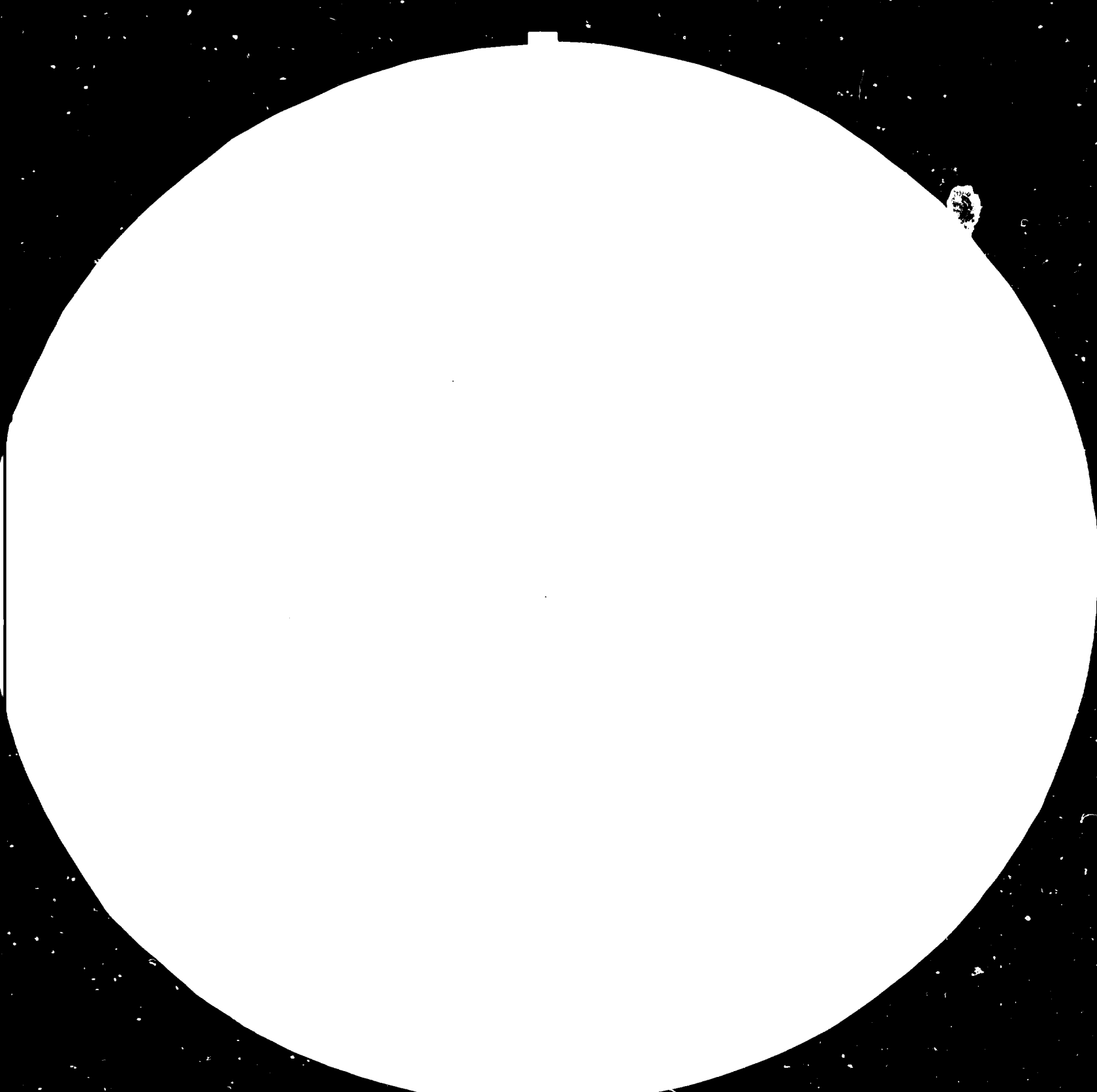
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## I. INTRODUCTION

UNIDO organized together with UNDP and Fair Secretariat of "the Technology for the People", the First Technical Congress in Geneva, September 1980, in order to guide participants to the appropriate selection route in technology and equipment needed. This experience had proved to be a useful opportunity to exchange experiences and information on the subject dealt with.

The Fair as well as Technical Congress will serve as an important benchmark for effectively measuring the meaning, direction and impact of various types of technologies, manufacturing process and support services on the third world development. Therefore, UNIDO decided to organize Technical Congress in conjunction with Third International Fair - "Technology for the People". This Technical Congress will concentrate on only two industrial sectors, namely,

- Agricultural Machinery and Implements;
- Energy for Rural Needs.

The objectives of the Technical Congress are as follows:

- (1) To link between the Fair and the Technical Congress effectively through presentation of country case studies, exchange of experiences and information, and transferring knowledge on the technology both at the exhibition and Technical Congress. So that participants will be properly guided for the decision making process in the selection of most appropriate technologies and equipments for their needs.
- (2) To promote TCDC activities, through exchange of experiences and information in the sectors, and to facilitate collaborative programme of TCDC, particularly promotion of entrepreneurs level co-operation through joint venture, subcontracting and licensing agreements etc.

(3) To elaborate and compare national technology development policy on two selected sectors.

As I mentioned at opening ceremony, we would like to discuss practical ways and means of promoting business ties on TCDC with the emphasis on small and medium industries (SMI) of developing countries, and other concrete suggestions as to how and under what circumstances South-South enterprise co-operation can be greatly expanded.

In this connection the issues to be covered can be divided into the following themes:

- I Policy issues; National technological development policy on two sectors
- II Technology transfer issues; Practical ways and means of promoting flow of technology, including licensing agreements, joint venture, sub-contracting, information exchange, etc. in order to strengthen local manufacturing capabilities on two sectors, in the developing countries
- III TCDC issues; Inter enterprise co-operation.

Number of case studies on the subjects will be presented during the plenary session of the first day of the Technical Congress, particularly from Asian and African Region. The resource speakers will deliver their presentation on the assigned topics. After that the Rapporteur will present the high-lights and open the floor of questions and discussions.

After the plenary session, the meeting will be divided into two Working Groups, namely, Agricultural Machinery and Implements as Group I, and Energy for Rural Needs as Group II. Resource persons and panelists also will be invited during the Working Group session and each Group will work on their assigned topics.

The Rapporteur of each Working Group will present at plenary session on the summary with recommendations and conclusions based on the issues.

The recommendations and conclusions for follow-up activities at the national, regional and inter-regional levels, including TCDC, technology transfer and policy matters will be adopted and the final report may leave to main Rapporteur together with the Conference Secretariat.

The participants should read both issues, i.e. the issues for "Agricultural Machinery and Implements" as well as the issues for "Energy for Rural Needs", since concept, mechanism, contents of each issues are supplementary and complementary each other.



AGRICULTURAL MACHINERY AND IMPLEMENTS

I. TECHNOLOGICAL DEVELOPMENT POLICY: POLICY ISSUES

In order to stimulate action by developing countries at the national level for the adaption of technology policies and plans, it is important to sensitize policy makers on the issue involved and provide the necessary conceptual and methodological basis for national action, including an indepth examination of their technological needs as well as the means of fulfilling of these needs.

Questions

1. What are the policies of the government on agricultural machinery industry in specific terms?
2. What is the mechanism to implement it?
3. Is current national mechanization policy, programmes and trends acceptable to small entrepreneurs of agricultural machinery and implement manufactures? If not, what modifications are needed?

The basic national technological development policy must be clearly expressed in terms of quantified objectives for identified areas on needs, including main characteristics of agricultural demand in the country and alternative manufacturing strategies which could satisfy needs within the countries environment, identification of the main constraints causing barriers for manufacturing agricultural machinery and implements locally.

What is needed are new approaches and new concept of mechanization and manufacturing strategies.

A continuous, strong well-defined policy on agricultural mechanization should be considered as a major component of national development policy.

National strategies for agricultural mechanization and for manufacture related equipments have to be based on action-oriented concepts that reflect the full realities of the rural situation.

There is a need to strengthen and or establish appropriate institutional support services.

In order to formulate a comprehensive plan for the systematic development of agricultural machinery and allied engineering industries in the rural areas, there is a need for action-oriented national plan. This could be formulated on the basis of the following factors:

- (a) The technological needs for agricultural machinery industries in rural and urban areas.
- (b) The development of an infrastructure for centralized or decentralized growth of technology coupled with the technological information system, services and know-how.
- (c) An institutional system for accelerated absorption of imported technology, development of indigenous technology and transfer of both imported and indigenous technology to SMI.
- (d) The R+D for indigenous technology.

The government of developing countries should undertake an indepth analysis of the options for agricultural mechanization and formulated programmes for the development and manufacture of appropriate agricultural machinery and implements with due consideration to policy and planning, and to the financial, R+D, institutional, technological, manufacturing and service level.

Overall national mechanization policies should be based on achieving a gradual transition in an optimum way, so that it would take place at the appropriate level of mechanization, which mainly depends on energy sources, farm size, the skills and attitudes of the farmers, access to credit, markets and effectiveness of the extension services.

The incentive national policies should be reviewed in terms of importation of the machinery and equipment, financing and credit etc so that the production programme will be met policy requirements, and the production of equipment included in the national technology development plan will be encouraged.

Is there a need to undertake an analysis of the successful policy of the selected developing countries and to disseminate it to other developing countries?

## II. TECHNOLOGY TRANSFER ISSUES: PRACTICAL WAYS AND MEANS OF PROMOTING FLOW OF TECHNOLOGY

A very few developing countries have an overall planning mechanism aimed at systematic improvement of technological capacities and capabilities. With respect to indigenous technology, national research and development institutions in the developing countries often have not been able to monitor or promote their development or application. The Technical Congress should seek to provide a methodology and an operational basis for this propose. Governments of developing countries should encourage the role of national consultancy and engineering firms by adapting policy measures that will assist these firms with the process of acquiring technologies from foreign sources, with joint venture arrangements and with the incorporation of the consultancy functions into national research and development activities. An important task is to improve the negotiating capabilities of developing countries for the acquisition of technology. A practical methods of strengthening the negotiating capabilities of personnel from developing countries is intended to apply through the Technical Congress in conjunction with the Technology Fairs. The assessment and choice on alternative technologies represent the central theme of the co-operative programme action on appropriate industrial technology.

Technological capabilities in developing countries can be promoted through a variety of action with reference to local

conditions and with particular emphasis on the strengthening of the existing institutions and promotion of interlinkages and also through industrial research and service institutions, fostering co-operation among them.

### Questions

1. What routes to mechanization and alternative technologies appeared capable to meet the priority needs of developing countries in Agricultural Machinery and Implements?
2. What types of mechanization are appropriate and subsequently which agricultural equipment is needed at the national level of developing countries?
3. How can the equipment be designed locally and produce locally in adequate quantities, using local skills, natural and financial resources?
4. What national capabilities and capacities exist for local production?

It is important to define well what to produce and how to produce in the early stage of planning.

The first step may be, therefore, a census and diagnosis of different production capabilities, their past and present achievements and their problems. Second step may be to establish a system to exchange information on proto-types of machinery that have been adapted and designed in another developing countries.

When an entrepreneur is planning to manufacture on the selected item locally, the following technical criteria for production should be taken into account.

- The task of complexity of product, the level of sophistication, the type of raw material required, the desired level of quality control, the production volume, unit cost of production, required labour skill, the financial implication etc.

Due to lack of information and transfer of technology, a number of machinery and equipment developed in other developing countries are not yet being manufactured in certain developing countries, particularly in Africa. Selected machinery and equipment developed by certain national and international institutes are suitable for promotion of local manufacturing in certain developing countries, particularly to Africa.

There is also a need to develop new simple machines and equipments based on local condition through TCDC. The selection of such new simple machines and equipments should be attempted to reduce weight, to use alternative materials, to simplify design and construction, to make it easy to repair and maintenance and to induce the manufacturing of reasonable product costs.

The technical aspects of such a programme for new simple machines and equipments to be produced locally should include identification of products, selection and adaptation of technology suited to local conditions, specification of facilities to set up and services required, continuous flow of information on new products and process improvement, scheduled supply of raw material and manpower, manufacturing programme elaboration, continuous co-operative research and development etc.

Regarding information dissemination activity, we would like to suggest the following:

- Establishment of Information Network.
- Prepare technological guidelines and profiles of manufacturing appropriate Agricultural Machinery and Implements.
- Exchange of information on drawing, specifications and the availability of right type of raw materials and equipment for the agricultural machinery industry manufactured in developing countries.
- Study on technological trends on the generation and use of non-conventional energy relevant to Agricultural Machinery and Implements.

- Flow of information on technology suppliers (Licensors) including contents of licensing agreements as well as joint ventures, real cost of transfer of technology and supply of model contract formed, etc.

### III. TCDC ISSUES:

We would like to emphasize again that the Technical Congress should more concentrate on

- to discuss practical ways and means of promoting business ties on South-South basis, particularly for small and medium industries; and
- to offer concrete practical action to arrange suggestions as to how, and under what circumstances South-South enterprises co-operation can be promoted and expanded.

### Questions

1. How effectively can the existing facilities in developing countries for training and co-operative research projects be used and upgraded through pooling of resources and inter-linkages?
2. Is it feasible for developing countries to co-ordinate and aggregate their needs and negotiating for better terms and conditions for technology transfer agreements?
3. What ways to link between Asia and Africa in context of enterprise level co-operation?
4. Is there a need to compile the successful cases of enterprise level co-operation of South-South and disseminate?

The Technical Congress should discuss the growing needs as well as the scope for enhancing technological co-operation among developing countries (TCDC) with a view to redesign the existing distortions and imbalances in the international technology order.

The Round-Table Ministerial Meeting held in New Delhi, January 1977 underlined the need to identify concrete areas of co-operation and of the importance of pooling the experiences and resources of the developing countries with the aim of the fulfilling a common strategy for their industrial and

technological development. These include identification and use of technologies already available in the developing countries, co-operation in respect of establishing the clearing house that technological information, strengthening consultancy and engineering capabilities, establishing and strengthening of national and regional institutions concerned with industrial and technological development, co-operation in applied research and development in Agricultural Machinery and Implements, manpower development and training, etc.

The Buenos Aires Conference highlighted the need for exchange of experiences, the pooling, sharing and utilization of resources and for development of complementary capacities, as means to building up collective self-reliance among the developing countries.

Strengthening technological co-operation among developing countries forms one of the major components of the operational plan drawn up for the implementation of the Vienna Plan of Action. For example, compilation and dissemination of information on available technologies in developing countries, and promotion of co-operative arrangements among technological research and development institutions in Agricultural Machinery and Implements.

Main problem areas in Agricultural Machinery and Implements for TCDC are as follows:

- (a) Lack of adequate research and development infrastructure.
- (b) Lack of information on and links with technological development in other developing countries.
- (c) Lack of negotiating and contracting capabilities in licensing agreements.
- (d) Mechanization often inappropriate to local conditions.

In order to cope with some of the problems, the following action could be considered as TCDC:

- (a) Exchange of information and experiences on technological developments among the developing countries.



- (b) Establish linkages among research and development institutions of developing countries for co-operative research and training programme and projects.
- (c) Prepare technological guidelines and profile on the manufacture of appropriate Agricultural Machinery and Equipments.
- (d) Draw up model contracts for purchase of technology from other developing countries.

It is of crucial importance to determine what the pre-requisites for the formulation of a concrete co-operative programme of action in ECDC/TCDC and what measures need to be taken to this end.

South-South co-operation would need to be based on quality and mutuality of interest in the true spirit of interdependence.

Optimization of ECDC/TCDC possibilities would be facilitated through development of appropriate guidelines for such co-operation among developing countries.

Additional proposal for TCDC would be:

- Technical co-operation networks linking similar institutions/organizations in different countries.
- Joint technology enterprises that may provide technological know-how services to small and medium industries.
- A co-ordinating national focal points with suitable linkages could be established for regional institutes on the lines of a network. The Regional Network for Agricultural Machinery (RNAM) established at Los Banos in the Philippines is an example of this. Similar regional network should be established in Africa. In order to disseminate information on Agricultural Machinery and to provide proto-types.
- Types of technology and equipment that are most suitable for African conditions should be developed on the basis of models from other developing countries. For instance, Zambia and Zimbabwe manufactured animal drawn ploughs and other implements according to a model from India. The same applies to a type of motorised thresher designed in Egypt on the basis of IRRI of Philippines model.

Inter-enterprise technical co-operation means collaboration between two or more enterprises for the promotion of new projects, the re-activation or development of old ones. It can cover the whole project, i.e., the design and realisation stages as well as the running of the project or just one of the stages of these projects.

Co-operation can also be limited to the technical field or cover both the technical and financial aspects. Or it can be triangular, with the company promoting the project, or several enterprises supplying technology and one or more suppliers of funds. It should not exclude, if the internal legislation of the developing countries concerned permits it, the assistance from industrialised countries if these companies can bring with them a certain financial and technical support.

A mechanism for interenterprises co-operation based on UNIDO's experiences are as follows:

- (a) Selection of an organization/institution in each recipient developing country as co-ordinating agency for the project activities: It should endeavour to maximise the utilization of existing institutional infrastructure of the recipient developing countries as co-ordinating agency such as small industrial development organizations. In each country one of these institutions/organizations will be selected as a co-ordinator for activities.
- (b) Identification of potential small enterprises of recipient developing countries by each co-ordinating agency and brief them on project objectives and activities.
- (c) Identification of viable small-scale industry operations at the enterprise level requiring technology owner collaboration for providing specific technological inputs for improving product quality, design and productivity for existing small industry or for acquiring the necessary technological capabilities for the setting up of new manufacturing operations in the recipient developing countries. In carrying out this activity consideration will be given to government policies and plans designed for the promotion and development of that particular industrial sectors in their respective countries.

- (d) The plant level co-operation proposals will be prepared by co-ordinating agency in close co-operation with recipient small industries.
- (e) Consult with technology owners of small industrial enterprises on the plant level co-operation proposals and ensure their willingness to co-operate towards the fulfilment of requirements stipulated in the plant level co-operation proposals.
- (f) Based on the plant level co-operation proposal prepare an evaluation report by co-ordinating agency together with technology owners through field mission to each recipient participating countries, asking them appropriate information such as nature, range and capacity of the operation, infrastructure, management, labor and financial limitations and proposed form of co-operation, etc.
- (g) Within the frameworks of matching the requirements of each of the plant level co-operation proposals, the resources offered by the technology owner in small industry be identified; individual visits and meetings will be organized between concerned partners from technology owners and recipient in developing countries for negotiating a mutually agreed form of co-operation.
- (h) Provide necessary assistance and guidance to the recipient enterprise on proper adaption, technologies offered by technology owner, including negotiation for redesigning, scaling down and modification of such technologies, bearing in mind aspects of better utilization of indigenous raw materials, technological absorption capacity, and other local conditions prevailing in the recipient countries concerned, as required.

Another mechanism will be as follows:

- (a) Nomination of national focal points in the participating countries for the TCDC in technology services.
- (b) Identification of the needs in technology services of the participating countries through national focal point, including description of the existing organizations and

their activities, mechanism for TCDC, flow of technologies in their countries, ongoing programmes and projects, etc. Financial means permitting, this exercise will be supplemented and complemented by the services of international consultants.

- (c) Assessment of extent and experience of TCDC in respect to overall technology collaboration, including flows of technology and technical services, such as consultancy, engineering and others, particularly for manufacturing sectors.
- (d) Formulation of TCDC programmes of participating countries based on identification of priority areas with innovative co-operative mechanisms based on the needs in technology services.
- (e) Dissemination of TCDC programme in technology services to participating countries asking them to identify the possibility of providing assistances; it might be a finance, loan, grant, know-how transfer, training, industrial research, exchange of information, twinning arrangements, etc.
- (f) Implementation of TCDC programmes.

ENERGY FOR RURAL NEEDS

I. TECHNOLOGICAL DEVELOPMENT POLICY: POLICY ISSUES

Rural energy planning will have to be an integral part of a comprehensive national energy plan taking into account the needs of integrated rural development and the options provided by renewable alternative sources of energy.

In energy planning for rural needs, much greater emphasis need to be given to self-sufficient local systems involving the maximum use of solar, wind, water and biological energy.

What is required is an appropriate institutional infrastructure capable of planning and implementing a co-ordinated programme at all levels and of mobilizing rural energy support for it.

The national governments of developing countries might devise overall energy policies, inter alia, including the following:

- (a) assessment of actual rural energy needs
- (b) strengthening the machinery for energy planning
- (c) identification of alternative resources and technological possibilities
- (d) formulation of comprehensive national policy on the utilization of various non-conventional and renewable energy sources
- (e) formulation of a system of fiscal and monetary incentives, and special assistance to encourage the use of alternative energy technologies
- (f) intensification of applied R+D efforts in terms of intensive trials of available technologies and equipments to test their suitability
- (g) increasing reliance of renewable sources of energy with priority being given to the development of biogas, small hydro-power, wind and solar energy

- (h) technological adaptations and innovations with special attention to the experiences of other developing countries and to local raw materials through continuous R+D
- (i) formulation of a network of rural energy technology for demonstration and training for application of appropriate energy technologies in rural areas
- (j) systematic collaboration of training opportunities in energy area at national, regional and interregional level and dissemination of the opportunities to the developing countries.

Developing country should introduce energy technology development promotion law for rural area which includes tax exemption and financial support in R+D activities, etc. Under the such law, R+D spending for the digestion and improvement of imported technology, technical acquisition costs, training experiences, etc. are recognized as tax deductible losses in income accounting. The government policy should take the risk involved for the application of research results on a commercial scale in rural area.

## II. TECHNOLOGY TRANSFER ISSUES: PRACTICAL WAYS AND MEANS OF PROMOTING FLOW OF TECHNOLOGY

Prior to discuss on technology issues, we should clarify the following questions:

1. What do we mean by rural sector and what are the energy requirements of rural sector?
2. Why are we talking of energy in the rural context as a separate entity by itself? Why does it merit a separate discussion?

The demand and supply equations in rural areas are very different from the urban and metropolitan area.

Energy supply to the rural area is so important that the provision of appropriate technology for it presents a singularly opportune, point of entry for rural development programmes.

Much debate now centers around which alternative technologies are most appropriate for the rural areas of the developing countries. A number of renewable options should be reviewed and discussed.

The suitable technologies for the production of mechanical and electrical energy from biological wastes and solar, wind and water power are available and can be adapted for wide-spread applications in rural areas in most developing countries. However, the technological problems of adaptation and innovation to match the available technologies and hardware with the local circumstances may prove to be a serious constraints to many developing countries in implementing their programmes.

Energy sufficient improvements are essentially in rural development including agricultural, since increased mechanization and lift-irrigation are contributing to substantial energy consumption.

In reviewing the rural energy situation in developing countries within the context of their rural industrialization efforts, the subject of new and renewable sources of energy has become increasingly highlighted.

A number of new technological developments will need to be carefully considered for energy development.

#### Small Hydro Power

Small hydro power could play an important role specifically in connection with the supply of power to remote and isolated rural areas not covered by the national grid network.

Most of the developing countries have rich and hitherto often not fully exploited renewable sources of energy such as scattered streams, rivulets, waterfalls, etc. It is felt that these resources should be profitably exploited through the technology transfer and TCDC.



This technology is well-established. There are no pollution problems associated with this energy mode. Electrical energy is ideal for rural industrial and social purposes.

### Biomass

Biomass in one form or another already provides the major source of energy in developing countries especially in the rural areas. This is primarily in the form of fuelwood which is burnt in simple stoves. In fact, there are many different types of biomass resources and a wide variety of energy conversion technologies, from the very simple, which have wide application, to the very sophisticated, which are still at the research stage.

Improvements in the simple system such as wood burning stoves and charcoal kilns will lead to immediate and beneficial results for millions in the developing countries. Modern science should be applied to improve the traditional conversion technologies. One of the most important advances is the research and development work being undertaken on the efficient conversion of cellulose and hemicellulose to ethanol by using genetically manipulated micro-organisms and by using recombinant DNA technology. Lignocellulosic material is probably the largest source of biomass available and therefore the quantities of ethanol that could be produced could really provide an addition to conventional energy forms.

Crop residues such as rice straw, sugar cane bagasse, corn stover, banana stalks, coconut shells and husks can be utilized for biomass energy conversion. The bulk of the cell wall in such crops is made up of cellulose, where it is found in close association with lignin and other materials (such as hemicelluloses and pectins). Cellulose is by far the most abundant, renewable and readily available of all solid organic material, comprising almost one third of the weight of all trees, grasses and straws. The annual net yield of cellulose worldwide (from photosynthesis) is estimated at  $10^{11}$  tons.

Energy can be obtained from biomass by direct combustion by gasification (anaerobic digestion or thermochemical gasification), or through the production of ethanol (normal alcohol).

An important aspect of most biomass conversion technologies is that they are not very complex or costly. The result is that it is possible for much of the equipment needed to be fabricated locally in developing countries. The problem is that the design and processes for these advanced technologies are usually the property of enterprises in the developed countries and are not adapted to the needs of the users in developing countries. It is, therefore, essential that the developing countries with biomass energy potential, and that includes the vast majority, develop a local design and construction capability for the various biomass technologies.

### Solar Energy

Conventional solar energy application to the rural area is well known such as irrigation pump, crop dryer, etc. Therefore we do not want to repeat again here. The widespread applications including rural area of photovoltaics depend on improving their conversion efficiency and on the expansion of the world market that would lead to an increase in solar cells production and a reduction in costs. Solar cells can be fabricated on a laboratory scale in most of the developing countries. The first few trials may yield low conversion efficiency but will have the sociological impact that this device is no longer a "black box".

In regard to non-competing uses, solar cells could still provide energy to perform specific functions for which no energy is otherwise available. Such uses might include for example use in health clinics and educational television where the social pay-off will substantially outweigh the costs of solar cells. Solar energy driers needing small amounts of electric power for blowers could substantially reduce post-harvest losses.

III. TCDC ISSUES: INTER-ENTERPRISE CO-OPERATION

The selection of energy related institutions to serve as national, sub-regional Centres of Excellence, will be the most promising way of strengthening co-operation among developing countries. Special emphasis should be placed on identifying qualitative and quantitative needs for information exchange, research and development, training, advisory services through the Centres of Excellence. A number of institutions were equipped with facilities which, if strengthened, could better meet the above-mentioned identified needs, since many such institutions were not well known and other institutions were with excess capacity where it was not realised that the potential could be utilized for the benefit of other developing countries.

P.R. China has volunteered to set up a Regional Centre for Small Hydro Power as the Centre of Excellence for training, co-operative research and development, information services, advisory services, which is an excellent example of the Centre of Excellence at the regional level. The Technical Congress should encourage such an establishment in the NRSE area, particularly to the African continent.

In recognition of the importance of energy research and development activities in the industrialization processes of the developing countries, UNIDO has carried out a number of programmes and projects relating to stimulation, promotion and commercialization of the energy research and development in developing countries. One of the objectives of such projects is to propose a new mechanism of promoting and implementing twinning or co-operative research and development arrangements among energy related research institutions of developing countries. Through implementation of such co-operative arrangements, it is envisaged to strengthen in very concrete terms the technological capabilities of industrial research

institutions in the developing countries. It is also expected to reduce substantially the possibilities of duplication of work and avoid unnecessary waste of national industrial research potential which is considered, at present, quite impressive.

For instance, Biomass can be converted into a number of different energy forms and by many different processes from the very simple to the very complicated. Pyrolysis, gasification, direct liquefaction and enzymatic ligno-cellulosic fermentation are all technologies which are at the research and development or pilot plant stage. A wide range of co-operative research possibilities exist and attention may have to be given to certain key result areas, where the research and development should also extend to the stages of commercialization. Research work on enzymatic ligno-cellulosic fermentation, if it leads to successful commercial operations, will be a major contribution to biomass energy.

In order to provide consultancy and technical advisory services to developing countries upon request in the energy sectors, the Technical Congress should recommend to compile an experts roster in different rural energy sectors at the national, sub-regional, and regional level for TCDC. Through the Centres of Excellence at the national, sub-regional and regional level, as well as international organizations, technical advisory services for rural energy needs should be provided through a networking concept. The network consists of a group of institutions in different countries in the region engaged in a particular energy field of activity or research, design and development, pilot/demonstration acting as the group to exchange information, experience and knowledge to co-ordinate research and development and to minimize duplication, to undertake joint research, to offer training and advisory services to one another, to disseminate information and generally to advance a technology and its application.

The Technical Congress should recommend also to compile and disseminate engineering consulting service organizations in the energy sector for rural area in the developing countries.

The fact that most developing countries have the same or similar geographical and climatic conditions makes it not only possible but also desirable for them to co-operate, to share experiences and even to develop co-ordinated R and D programmes, both bilateral and multilateral.

A concept of inter-enterprises co-operation stated in the "Agricultural Machinery and Implements", is applicable also to the "Energy for Rural Needs".

