



**Department of Economic and Social Affairs**

**Commission on Sustainable Development  
Seventh Session  
New York, 19-30 April 1999**

**- STATUS OF IMPLEMENTATION -  
CSD 6 DECISION 6/3 ON  
TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

Background Paper #17

Compiled by the Division for Sustainable Development

This document is an initial compilation of information on work in progress. It will be updated and expanded annually to include new initiatives by both the UN system, governments and other international organizations, until the next CSD review in 2002.

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## **STATUS OF IMPLEMENTATION: CSD-6 DECISION 6/3 ON TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

### **INTRODUCTION**

The Commission on Sustainable Development, at its sixth session (April 1998), examined the issue of transfer of environmentally sound technologies (ESTs) and identified a number of areas for action relating to this issue. The Division for Sustainable Development, as Task Manager for the issue of "Transfer of environmentally sound technologies, cooperation and capacity-building" (Chapter 34 of Agenda 21), has compiled a list of activities planned or undertaken by the United Nations system on the areas for action specified in the Commission's Decision 6/3. Those areas for action include the following:

1. Develop voluntary guidelines for technology cooperation in the context of creating and maintaining an enabling environment for the purpose of maximizing the complementary roles of public and private sectors in the transfer of ESTs.
2. Identify barriers and restrictions to transfer of ESTs and provide opportunities for technology cooperation, including in research and development, as well as partnership initiatives and related capacity-building for using and maintaining ESTs.
3. Develop national technology strategies and initiate various forms of partnerships for the implementation of these strategies for technology innovation, commercialization and diffusion.
4. Evaluate applications of eco-efficiency and cleaner production as a useful tool in developing national technology strategies and in ensuring that these strategies are fully integrated into national sustainable development strategies and programmes.
5. Study factors that influence company decision-making, such as technology integration, economic competitiveness and environmental management, including international technology cooperation at the enterprise level, as well as adoption of best practices in environmental management and use of ESTs in production processes.
6. Undertake feasibility studies on the use of policy instruments to promote transfer of ESTs through greater use of public and market-based incentives to promote better management of human and natural resources and development of national capacities to more effectively develop, adapt, integrate and use new technologies.
7. Improve access to publicly owned and publicly funded technologies in the context of promoting regional cooperation and implementing international environmental conventions and agreements.
8. Create new cleaner production centres to facilitate the process of technology transfer and adaptation at various levels, including at the regional level, which could greatly contribute to the transfer of ESTs.

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The information contained in this report is based on inputs received from United Nations organizations on activities planned or undertaken in these areas for action.

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**This document will be made available on the Technology for Development website of the United Nations Department of Economic and Social Affairs, Division for Sustainable Development:**

<http://www.un.org/esa/sustdev/est4>

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**ECONOMIC COMMISSION FOR AFRICA**

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**AREA FOR ACTION**

- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

**PROJECT TITLE****SCIENCE AND TECHNOLOGY INNOVATION COMPENDIA OF BEST PRACTICES****PROJECT DESCRIPTION**

The project will produce compendia of published and unpublished science and technology research/innovation projects, applications and best practices in fifteen African countries, with about 10 to 12 examples for each country. The compendia contain a short description of the technologies and research, including some on environmentally sound technologies. These include research on technology for coping with environmental degradation in peri-urban settlements of Uganda, farming systems in Cameroon, salmonella diagnostic kits, cleaner production technology, and ventilated pit latrines for rural sanitation in Zimbabwe.

**PROJECT STATUS**

The compendia, after finalization, will be made available on the internet through the ECA Science and Technology Network (ESTNET).

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**ECONOMIC COMMISSION FOR AFRICA**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****ESTABLISHMENT OF NATIONAL SYSTEMS OF INNOVATION (NSI)****PROJECT DESCRIPTION**

This project will produce a research-based document evaluating National Systems of Innovation in selected member countries and provide guidelines on how to improve them.

**PROJECT STATUS**

The study will start in the year 2000.

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**ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****ASSESSING OPPORTUNITY AREAS IN MARKETS FOR ENVIRONMENTAL  
GOODS AND SERVICES IN LATIN AMERICA AND THE CARIBBEAN****PROJECT DESCRIPTION**

This project will identify investment and business opportunities in markets for environmental goods and services in selected countries of the Latin America and Caribbean region. The overall development objectives are to:

- (a) help increase the contribution of a new and growing environmental industry in the region;
- (b) increase awareness of the potential of the environmental sector for improving environmental conditions and for positively linking environmental concerns with economic performance;
- (c) generate increased income and employment through the development of a new economic sector; and
- (d) improve the institutional and regulatory environmental framework in countries of the region.

**PROJECT STATUS**

The project document is being submitted to the German authorities for financial support.

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**ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN**

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**AREAS FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **UNDERTAKE FEASIBILITY STUDIES ON THE USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTs**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

**PROJECT TITLE****CHARGING FOR USE OF ROAD SPACE IN LATIN AMERICAN CITIES****PROJECT DESCRIPTION**

The project firstly reviews current practice and analyzes the historical development of the concept of congestion pricing and the reasons that have impeded its wider acceptance. Then, via a simulation model calibrated for the city of Santiago, Chile, different policy options that may have an impact on traffic congestion are compared. The options include different categories of road pricing, parking restraint at increasing levels of severity and various improvements to public transport. An action plan will be proposed for Santiago, covering technological, administrative and legislative aspects and a series of workshops will be held in this and three other cities. A book will be published in Spanish and English.

**PROJECT STATUS**

Ongoing. The modeling work is due to start in March 1999.

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## **ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA**

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

### **PROJECT TITLE**

**STUDY ON ENVIRONMENTALLY SOUND TECHNOLOGIES IN THE TANNING INDUSTRY**

### **PROJECT DESCRIPTION**

The study is aimed at exploring environmentally sound technologies with the potential for improving the environmental profile of the tanning industry in the ESCWA member countries. It consists of five main chapters and a final brief chapter devoted to the study's conclusions and recommendations.

The first chapter outlines the status of the global leather industry, its main segments and their respective magnitude. Prevailing trends are discussed in relation to geographical distribution of the industry, trade in its products and the environmental impact of its operation. It will consider the notion of environmentally sound production technologies based on inherently "clean" methods that rationalize the utilization of raw materials and energy inputs and eliminate or reduce unwanted products and harmful emissions, as opposed to end-of-pipe effluent "clean-up" operations.

The second chapter is specifically concerned with gauging the environmental impact of the various operations previously discussed and the types of pollutants which these operations are responsible for as well as their effect on the environment. A tabular presentation is included of the percentages of the various types of polluting output generated by each tanning operation. The overall picture presented in tabular form is stressed as the basis for making technological choices aimed at eliminating or reducing the extent of particular groups of pollutants and attaining an optimal environmental profile within a given set of constraints.

The third chapter constitutes the core of the study as it is devoted to consideration of recently developed environmentally sound alternatives to previously described technologies. Major classes of environmentally sound technologies that are of direct benefit to countries in the ESCWA region with their scant water resources are introduced. Also considered were new processes that utilize entirely new materials and discard the more conventional and more polluting ones. Technologies for recycling in the more polluting and water consuming stages of the leather industry were examined using concrete examples. Technologies designed to retrieve, reuse or enhance the absorption of some of the more expensive chemicals are elaborated and illustrated whenever possible with outlines of processes that have actually entered effective industrial application.



## **ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA**

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The fourth chapter focuses attention on two sources of near and foreseeable future developments in the processes of the tanning industry. The first is the application of computers in particular and information technology in general in tanning process design and control. The second is the body of research activity aimed to further environmentally sound development of the industry's processes. Research activities of both the applied and the more futuristic, quasi fundamental activities are discussed with reference to reported research efforts.

The fifth chapter is devoted to a brief review of trends in the manufacture of, and trade in, raw hides and skins as well as finished heavy and light leathers. The main purpose of this review is to define net flows in the industry's raw materials and finished products so as to set the scene for rational choice in technology acquisition and development activities aimed at improving the industry's environmental profile.

The final chapter outlines the conclusions of the study as well as a list of tanning technologies constituting the foundation for a more environmentally sound future of the industry in the ESCWA member countries. This list was compiled on the basis of reduced pollution and water consumption as well as a focus on recycling as a core activity in transforming the industry's environmental profile with the smallest possible degree of brand new installations and additional facilities.

The study presented a series of recommendations designed to achieve a gradual and continuous move by the industry towards a more sustainable future, highlighting the need to provide R&D capabilities, not only to improve the industry's environmental profile but also to enhance profitability and product quality to render it more capable of facing tougher competition and absorbing ever cleaner technologies.

### **PROJECT STATUS**

Already completed.

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**ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE****STUDY ON ENVIRONMENTALLY SOUND TECHNOLOGIES  
IN SELECTED FOOD INDUSTRIES****PROJECT DESCRIPTION**

The study will adopt a multidisciplinary approach, addressing issues against the background of regional projects aimed at resource conservation and environmental protection, as well as regimes aimed at laying down international environmental standards. The opportunities offered by new technologies in the area of resource conservation and environmental protection will be considered in relation to selected food industries. The target group for the project will be decision makers and technical managers in the food industry, plant managers as well as senior staff within public and private sector establishments, and selected representatives of chambers of industry from ESCWA member countries will be invited to contribute.

**PROJECT STATUS**

The study will be submitted to a multi-disciplinary expert group meeting to be organized in collaboration with regional and international organizations. Tentative submission date is last quarter of 1999.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION
- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES

**PROJECT TITLE****CONSOLIDATION OF THE USE AND MANAGEMENT OF  
NATURAL RESOURCES IN RURAL COMMUNITIES IN COSTA RICA****PROJECT DESCRIPTION**

The objective of the project is to generate simple technologies to manage natural resources as well as methods of participative planning for the introduction of techniques that would promote the increase in value of goods produced from these natural resources.

**PROJECT STATUS**

Ongoing. The project is scheduled for completion by the end of 1999.

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### **AREA FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

### **PROJECT TITLE**

#### **INDUSTRIAL WATER RESOURCES IN SELECTED COUNTRIES**

### **PROJECT DESCRIPTION**

Agro-industrial development is dependent upon secure supplies of potable water, but this factor is frequently over-looked within the scenarios that put market opportunities, crop and animal surplus and the search for employment and income as high priorities. Agricultural production is, however, heavily dependent upon water - much of it available gratis or at low cost. As a consequence, water is frequently used inefficiently and with little thought to sustainability, environmental degradation, recycling and re-use.

This project will set out to examine some of the issues involved, and to focus upon a country in which water supplies are strictly limited, hazardous and/or irregular in supply. The work will eventually consider a parallel project to focus upon urban agriculture and the competition that exist between the urban consumer, industry and agriculture.

### **PROJECT STATUS**

The project is in its second year of activities and has, thus far, considered some of the principles involved with access to clean water, the properties of water, water supplies to agriculture and some reference to agro-industries. Furthermore, a country has been selected and a case study is currently underway.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREA FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

### **PROJECT TITLE**

#### **AGRO-INDUSTRIAL RESIDUES, WASTES AND BY-PRODUCTS**

### **PROJECT DESCRIPTION**

Considerable quantities of waste materials are generated within agriculture and agro-industrial development, and within the communities in which people live. Given a measure of investment, conversion, imagination and effort, many of these materials can - and do - find markets, both commercial and within the home community.

The project has a wide brief to explore some of the opportunities that may apply to the regions, countries, communities and the projects with which the Technical Service may come into contact as the result of normal advisory activities. Waste materials can be re-directed into food for people, food for animals, as sources of energy, planting materials and as the raw inputs to a downstream processing industry. These activities will run parallel to a forthcoming initiative to consider support for agriculture in the urban environment - for food and sustainable livelihoods.

### **PROJECT STATUS**

In its second year of activities with work that has considered the use of municipal market waste, agricultural residues as raw materials, recycled city waste, disposal of waste in landfills and such. The issues of environmental legislation for agro-industrial factory waste disposal have been raised for the current year.

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

### **PROJECT TITLE**

#### **INTENSIFYING CROP PRODUCTION WITH CONSERVATION AGRICULTURE**

### **PROJECT DESCRIPTION**

A regular programme funded project on Conservation Agriculture is jointly carried out between FAO's sub-programmes, AGSE (2.1.4.2) and AGLS (2.1.1.P3), from the end of 1996 to promote the concept of conservation agriculture based on reduced mechanical soil tillage, soil cover and crop rotations.

Soil degradation worldwide is a major reason for concern. Reduction of mechanical tillage and promotion of soil organic matter through permanent soil cover appear to be the most promising approach to reverse the soil degradation process and achieve high agricultural production level on a truly sustainable basis. The approach is best described as "conservation agriculture" and replaces mechanical soil tillage by "biological tillage". The importance of the availability of appropriate technologies at the farm level for the success of conservation farming is the direct justification for the involvement of FAO subprogram 2.1.4.2 (Agricultural Engineering) in this initiative. The direct collaboration started in late 1996.

Background: Aspects of agricultural engineering are known bottlenecks to the adoption of sustainable farming practices, saving soil and water resources. There are indications that the commercial introduction of specific implements triggered a wide adoption of these farming practices in some countries (USA for large farmers, Brazil for small farmers). This has also been identified by AGLS, and the new AGSE programme at a very early point merged with the ongoing AGLS activity on conservation tillage.

Objective: Improvement of the sustainability of tillage based cropping systems through the selection and use of more appropriate tillage/planting equipment and farming practices. Expected outputs are: a more restrictive use of certain tillage implements; a better availability and adoption of equipment for conservation farming practices; and a widespread adoption of conservation farming practices.

Issues: This programme is carried out in close cooperation with AGLS and AGP. The availability and use of appropriate tillage and planting equipment cannot be separated from agricultural practices. On the other side, the introduction of conservation farming practices has in many cases failed due to the lack of commercially available appropriate technology. The following issues are in particular addressed by AGSE: (a) the need for tillage and the selection of the required type of equipment for each specific case; (b) the implication of machinery use in general on tillage requirements (compaction); (c) the

## **FOOD AND AGRICULTURE ORGANIZATION**

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commercial availability of suitable equipment; and (d) alternatives for the organization of equipment use for small farmers (hire services, multi-farm use schemes).

### **PROJECT STATUS**

**Problem identification and definition:** After initial field visits and contacts with research workers, extensionists and farmers active in conservation farming, an occasional position paper was produced by AGSE and distributed to a selection of interested people. It was also published on the AGSE homepage. For West Africa, a survey was carried out (97/98) on the impact of motorized soil tillage. The report has been translated into French and is being distributed in French and English language. It is available on the FAO-AGSE homepage.

**Networking:** AGSE joined AGLS in cooperation and support of the Latin American Network for Conservation Tillage (RELACO), introducing the aspects of agricultural engineering in the adoption of conservation tillage practices. In the 1997 meeting of the network, the official name of RELACO was changed to Network for Conservation Agriculture, widening the scope to a holistic view of the farming activities. RELACO is receiving financial and technical support to develop a self-sustained and financed organization promoting conservation agriculture in Latin America. It has been formally integrated into the International Soil Tillage Research Organization (ISTRO) as the Latin American Branch. FAO has, during the last years, been co-sponsoring the bi-annual RELACO meetings, rotating throughout the member countries. This support continues for the 1999 meeting planned in Brazil. The proceedings of these meetings are published.

**Direct contribution:** Letters of agreement between AGLS, AGSE and RELACO to support the work of RELACO between 1997 and 1999. Co-sponsoring of the RELACO meetings in 1997 and 1999. Presentation of technical papers at the RELACO meetings. Initiatives are undertaken to develop a similar network in Africa and link the existing networks together to facilitate the spread of information. Contacts have also been made with a newly established European Conservation Agriculture Federation (ECAAF).

**Dissemination:** In view of the successful adoption of conservation farming in Latin America, in particular among small farmers in Brazil, a first workshop to exchange experiences between Latin America and Africa was carried out with AGLS at IITA in Nigeria in April 1997. Participants were officers from the Ministries of Agriculture from Portuguese and Spanish speaking African countries (Angola, Cape Verde, Equatorial Guinea, Guinea-Bissau, Mozambique, Sao Tomé et Príncipe) and 4 Brazilian TCDC experts. In June 1998, an International Workshop on Conservation Tillage for Sustainable Agriculture was held in Harare, Zimbabwe. The workshop was jointly organized and sponsored by FAO-AGSE/AGLS/AGPC, GTZ, the South African Agricultural Research Council (ARC) and the Zimbabwean Farmers Union (ZFU).

**Objectives of the workshop were to:** (a) prepare steps leading to a regional conservation tillage initiative by sharing regional and world-wide experience in conservation tillage and extracting lessons of possible relevance to the small scale farmers in sub-Saharan Africa; (b) create sustainable mechanisms (such as networks) for the follow-up of the action plan and the improved exchange of experiences in south-eastern Africa and with other regions; and (c) develop guidelines for environmentally sound tillage practices for the protection of soils which could lead to the adoption of a code of conduct as a world-wide policy instrument in support of conservation tillage.

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In November 1998, AGSE staff participated and supported a Conservation Tillage Workshop organized by the Animal Traction Network ATNESA in Namibia. An international Workshop on Conservation Tillage in the CIS States is planned for September 1999 in Kazakhstan.

**Training:** As a result of the workshops in Harare and Namibia, two conservation tillage experts (from Brazil and Colombia) were provided under TCDC arrangements and financed under the budget of AGSE, and a two weeks training course was held in Namibia, introducing Brazilian zero-tillage planters for animal traction to Namibia.

**Policy:** During the International Workshop on Conservation Tillage for Sustainable Agriculture, an experts consultation took place to draft the Guidelines for Environmentally Sound Tillage Practices as a basic document for the development of a Code of Conduct for Sustainable Land Management.

**Publications:** The proceedings of the first IITA workshop have been edited in Spanish, Portuguese and English language version and prepared for printing as a joint AGS/AGL Bulletin. A French version is foreseen. The proceedings of the Harare workshop are printed in English as hard copy and the full text is also published on the Internet (<http://www.fao.org/waicent/faoinfo/agricult/ags/AGSE/MENU.htm>). A publication on the Brazilian experience with the introduction of conservation farming in the small farming sector has been commissioned. The Portuguese draft has been translated into Spanish and English and is prepared for printing. The report on mechanized soil tillage in West Africa is available in English and French as an occasional paper and published on the AGSE homepage. A presentation about the history, structure and achievements of the Latin American Network on Conservation Agriculture (RELACO) is published in the Internet (<http://www.fao.org/waicent/faoinfo/agricult/ags/AGSE/MENU.htm>). Also, a CD-ROM containing all the above publications as well as a further series of FAO bulletins on soil conservation is commissioned and will be presented in a short time.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE****FARM LEVEL APPLIED RESEARCH METHODS  
FOR EAST AND SOUTHERN AFRICA (FARMESA)****PROJECT DESCRIPTION**

FARMESA is a methods development and dissemination project for sustainable small-holder development.

**PROJECT STATUS**

Fifteen months remaining for the first phase and second phase expected.

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

### **PROJECT TITLE**

#### **MULTI-PURPOSE USE OF LIVESTOCK**

### **PROJECT DESCRIPTION**

The purpose of the project is to ensure higher levels of productivity, showing adequate sustainability and applying a participatory approach that enhances equity and empowerment aspects, within integrated farm management of natural, human and agricultural resources (crops, trees, livestock including poultry, fish). The objectives of the project are to: (a) enhance use of local resources and ensure conservation norms; (b) reduce waste by immediate and adequate use of recycling of intermediary products, by storing and/or processing residues and by-products to meet seasonal shortages, and taking advantage of important interactions among productive activities of crop-tree-fish-and-livestock enterprises; (c) increase output level of food and feed from farms to meet the needs of family groups and saleable surplus; (d) enhance rational combination of farm use of energy from different sources, taking full advantage of local renewable energy resources and earmarking inputs derived from fossil fuel to meet strategically indispensable productive requirements; (e) train local people and enabling them to apply better management standards in the use of their resources and in their "group organisation" that should enhance their self-decision making capabilities and their empowerment; and (f) expand productive job opportunities and strengthen local/rural processing and marketing of products.

The project will include: (a) Direct collaboration with field-based NGO working in close relationship with rural families and technical centres involved in technology development, on-farm testing, validation, adaptation and diffusion; and (b) Direct inputs in support of training plans at field level, aimed specifically at technical personnel working directly with rural communities and rural family members. Elaboration, publication and distribution of ad-hoc training manuals for such groups. Assisting with preparation, conduction and evaluation of technical workshops for these beneficiaries.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE**

**STUDY ON SUSTAINABLE MANAGEMENT OF LIVESTOCK IN  
MIXED CROP-LIVESTOCK SYSTEMS IN HIGH PRESSURE REGIONS IN  
THE HIMALAYAN, EAST AFRICAN HIGHLAND AND ANDEAN AREAS**

**PROJECT DESCRIPTION**

The project objective is to develop environmentally sustainable strategies to manage integrated crop-livestock farming systems in highland areas where there is increasing pressure on natural resources from increasing human population and land fragmentation.

**PROJECT STATUS**

The three regional studies are partly completed, leading to a global consultation in ICIMOD, Kathmandu, Nepal, in December 1999. The objective of the meeting is to agree on strategy guidelines and propose a series of Plans of Action to involve the stakeholders.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

### **PROJECT TITLE**

#### **AGROFORESTRY SYSTEMS FOR ANIMAL PRODUCTION**

### **PROJECT DESCRIPTION**

The project promotes the study and extension of agro-forestry systems to intensify, in a sustainable manner, animal production in developing countries. Agro-forestry systems are those which include shrubs and trees under cut-and-carry animal feeding systems with leguminous or high quality forages and under silvopastoral schemes. Multipurpose and/or fodder shrubs and trees can significantly improve the quality and quantity of available feed, thus permitting higher yields per unit area, while promoting biodiversity and protecting natural resources.

### **PROJECT STATUS**

The following conferences and meetings were held: (a) Electronic conference of agro-forestry for animal production, FAO-CIPAV, 1998, proceedings under publication; (b) Third International Silvopastoral Workshop and International Course of Silvopastoral Systems, EEPF-Indio Hatuey, Matanzas, Cuba, 1998; (c) The Agroforestry Tour of Decision Makers in Agriculture, CIPAV, Cali, Colombia, January 1999; (d) The Regional Workshop on Intensification of Animal Production for the Benefit of the People and the Environment in Central America, FAO/CATIE, Turialba, 24-26 May 1999; and (e) The International Conference on Agro-forestry for Animal Production, Cali, Colombia, October 1999.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **UNDERTAKE FEASIBILITY STUDIES ON THE USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTs**

**PROJECT TITLE****LIVESTOCK - COPING WITH DROUGHT****PROJECT DESCRIPTION**

In the arid and semi-arid zones of the world, living with drought is a way of life. In these regions, droughts are relatively regular events and can be planned for, even though the exact occurrence, duration and severity may be far more irregular and unpredictable. While there is a wealth of experience both at the cultural and public sector levels in responding to, and dealing with, the impact of drought on the livestock sector, the nature of the requests for FAO assistance would indicate that many issues remain unsolved. Notable issues include how to balance the need for humanitarian assistance against some of the more beneficial effects of droughts on pastoral eco-systems, i.e. in keeping livestock populations in check, and the justification of public sector manipulation of the market (supply and demand) during drought. There are also clear issues to be addressed in the post-drought rehabilitation of the livestock sector, notably the rationale for restocking programmes. There is a real need, consequently, for countries affected by drought to develop or re-define policies and contingency plans for coping with the livestock related aspects of drought.

The objective of the project is to examine the issues, options and their implications associated with the management of livestock resources and drought, in order to provide a rational basis for policy making and strategic interventions. Outputs will include:

- (a) Electronic proceedings of the conference that will include a compilation of the papers presented, a summary of the major issues identified, and the options and implications open to governments;
- (b) Proceedings of Regional Workshops and a series of individual or regional policies for managing livestock and drought;
- (c) Proceedings of a Pre-Congress Workshop held at the VI International Rangelands Congress; and
- (d) Published guidelines on Managing Livestock and Drought (APH Series). Decision- and policy-makers in countries where drought has a major impact on livestock are the primary target audience and will benefit from the guidelines in preparing appropriate responses to drought. Major multi- and bi-lateral agencies and NGOs will also be beneficiaries.

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**PROJECT STATUS**

As of April 1999, the Electronic Conference on Livestock - Coping with Drought is still active but coming toward an end. Additional papers will be aired and comments are expected. (See above for publications and workshops scheduled for 1999 and 2000)

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING**

### **PROJECT TITLE**

**GEF/UNEP/FAO PROJECT DEVELOPMENT AND PREPARATION FACILITY (PDF):  
REDUCING THE IMPACT OF TROPICAL SHRIMP TRAWLING FISHERIES ON  
LIVING MARINE RESOURCES THROUGH THE ADOPTION OF  
ENVIRONMENTALLY FRIENDLY TECHNIQUES AND PRACTICES**

### **PROJECT DESCRIPTION**

This is a UNEP/GEF project executed by FAO. The programme assists countries to meet their obligations relating to the sustainable use of marine living resources and responsible fisheries (in particular, reduction of wastage in fisheries through improved fishing operation - Article 8 of the Code of Conduct for Responsible Fisheries), under major international agreements and Conventions. The project consists of regional and national activities aimed at reducing the effects of tropical shrimp trawling operations on habitats and species by:

- (a) promoting the use of best practices and technologies, including by-catch exclusion technology; and
- (b) facilitating the development of strategies and revision of national policies so as to remove existing barriers to adopting practices designed to minimize impacts on non-target species and habitats.

The programme started in January 1999 with a "Project development and preparation facility" phase, the objective of which is to prepare, before mid-2000, a budgeted multi-year project (for which funds from the GEF of the United Nations Environment Programme have already been pipelined).

The on-going preparation phase includes:

- (a) Identification of shrimp fisheries where bycatch/discard problems or habitat impacts are particularly severe;
- (b) In the concerned fisheries, analysis of the constraints and barriers (technical, economic, policy related or other) to adopting more environmentally sound technologies practices;

**FOOD AND AGRICULTURE ORGANIZATION**

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- (c) Identification, through a process of wide multi-sectoral consultations (with industry in particular), of the potential roles of different stakeholders at national level in the process of using improved fishing technology and having more sustainable practices; and
- (d) Identification of inputs to the main project phase.

For the whole programme, the emphasis is put on the importance of "ownership" and a country-driven approach. Participation of the industry in consultation with the Fisheries Administration at the national level is given a high priority. Twelve countries are directly involved from Asia, Africa, Latin America and the Middle East.

**PROJECT STATUS**

The "Project development and preparation facility" phase started in January 1999 and is due to be completed by mid-2000.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

**APOYO AL DESARROLLO DEL SUBSECTOR - DENDROENERGETICO DE HONDURAS**

**PROJECT DESCRIPTION**

Wood energy is the major source of energy used in the country, where most of the territory is covered by forests. However, the government has not given the sector the attention that it deserves. FAO is providing technical assistance in order to:

- (a) carry out strategic studies regarding wood fuel flows;
- (b) develop a sound wood energy programme for traditional and modern uses; and
- (c) promote investments and transfer of technologies for the full development of bio-energy potentialities in line with the Kyoto Protocol and the Clean Development Mechanism.

**PROJECT STATUS**

Near termination; seeking follow up action and projects.

**CONTACT INFORMATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

**WOOD ENERGY - AN ALTERNATIVE FOR THE ENERGY DEVELOPMENT OF CUBA**

**PROJECT DESCRIPTION**

In Cuba, wood fuel is a major source of energy, and since 1989, its consumption has considerably increased. FAO is providing technical assistance in order to:

- (a) carry out strategic studies regarding wood fuel flows;
- (b) develop a sound wood energy programme for traditional and modern uses;
- (c) enhance national capabilities for dealing with sound wood energy systems; and
- (d) foster the transfer of know-how for the sustainable utilization of wood-based energy.

**PROJECT STATUS**

Project is just starting and is due to end in March 2001.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****FOREST ENERGY DEVELOPMENT TO COMBAT CLIMATE CHANGE****PROJECT DESCRIPTION**

The objective of the project is to assist CCAD countries (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) in setting up forestry policies, strategies, and projects for carbon mitigation fully integrated into their national sustainable development strategies and building national capabilities for their implementation.

**PROJECT STATUS**

Project already formulated and under submission to donor country.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****II FOREST ENERGY DEVELOPMENT TO COMBAT CLIMATE CHANGE****PROJECT DESCRIPTION**

Most Central American economies are based on their forest and agricultural sectors of which wood, sugar cane, coffee and cereals are the main commodities. These commodities and their industries provide the main export incomes needed to keep their economies running. Nowadays, Central American countries have initiated a process of transformation that imply profound social changes and environmental concerns that are reflected in a new set of sustainable development paradigms. The project aims to:

- (a) provide assistance to Honduras, Nicaragua, Costa Rica, Guatemala, El Salvador and Panama for their national capabilities in both public and private sectors, for the implementation of bio-energy initiatives with particular attention to the transfer of bio-energy technology using, among others, the flexible mechanisms established in the Kyoto Protocol such as the CDM and global emission trading; and
- (b) strengthen the current FAO Technical Cooperative Network on Dendroenergy for the exchange of experiences, information and project opportunities.

**PROJECT STATUS**

Project under formulation.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT TITLE**

**ASSISTANCE TO A NUMBER OF PROCESSES AT REGIONAL AND ECO-REGIONAL LEVEL  
ON CRITERIA AND INDICATORS FOR SUSTAINABLE FOREST MANAGEMENT AND  
TO MEMBER COUNTRIES IN THESE PROCESSES**

**PROJECT DESCRIPTION**

The objective of the project is to provide assistance to processes in individual countries for the development and implementation of criteria and indicators for sustainable forest management. Processes include notably: (a) the Pan-European process; (b) the Montreal process; (c) the Tarapoto proposals; (d) the Central American process of Lepaterique; (e) the Dry-Zone Africa process; (f) the Near East process.

Activities include support to training (c-f) and ensuring that the various processes produce outputs which are mutually compatible (a-f). A number of meetings have been held (a-b) in which logistical and technical support has been provided by FAO. With regard to (c-f), FAO has been instrumental in initiating and/or facilitating the work.

**PROJECT STATUS**

Ongoing.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- DEVELOP NATIONAL TECHNOLOGY STRATEGIES
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS
- CREATE NEW CLEANER PRODUCTION CENTRES

**PROJECT TITLE****BIOMASS ENERGY CONVERSION****THE DOUBLE ROLE OF AGRICULTURE AS AN ENERGY CONSUMER AND PRODUCER****PROJECT DESCRIPTION**

The main objective of this project is the development and transfer of both policies and technologies for a more integrated approach to the management and utilization of biomass resources in the way of agricultural residues and of purposely grown crops and trees.

**PROJECT STATUS**

Activities are already in course; expansion in both geographical and scale terms.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE**

**MONITORING WETLANDS FOR FISHERIES BY NOAA AVHRR LAC THERMAL DATA**

**PROJECT DESCRIPTION**

The project devised and tested a new methodology based on thermal inertia for the accurate monitoring of seasonal and annual changes in size of wetlands. Wetlands in Zambia and the Sudd in Sudan have also been studied. The methodology is low cost and easy to implement.

**PROJECT STATUS**

Completed and technical report already printed.

See RSC Series 68, 1995, FAO, and also RSC Series 69, 1997, FAO.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****STRENGTHENING REMOTE SENSING CAPACITY IN GROUNDWATER EXPLORATION****PROJECT DESCRIPTION**

The project was devised and tested in Syria for groundwater search by remote sensing/GIS in basalt and limestone. The whole methodology was successfully tested from satellite data selection/interpretation to actual drilling of well.

**PROJECT STATUS**

Successfully completed.

**CONTACT INFORMATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****MONITORING SHRIMP FARMS IN SRI LANKA BY ERS-SAR DATA****PROJECT DESCRIPTION**

The project devised and tested a new methodology in Sri Lanka for the inventory and monitoring of shrimp farms by imaging radar (SAR). Accuracy is over 90%.

Data so generated are essential to governments for regulatory laws, development and taxation of the quickly expanding aqua-culture in tropical countries.

**PROJECT STATUS**

Technical report nearing completion. It will be printed in the Environment and Natural Resources Working Papers, 1999, FAO.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****ENVIRONMENTAL INFORMATION SYSTEMS FOR  
NATURAL RESOURCE CONSERVATION AND USE****PROJECT DESCRIPTION**

The objective of the project is to assist the Government in setting up an Environmental Information System for the collection, analysis and evaluation of natural resources in Yemen, as well as the identified indicators to monitor their temporal and spatial evolution, both established and operational. The establishment of an initial capacity to facilitate data collection management and distribution of existing and new data is foreseen as an essential component of this project, as is the indigenous training of a cadre of skilled manpower to support and sustain the facility.

**PROJECT STATUS**

Ongoing. Three international consultants were fielded to identify environmental indicators, data gaps, and to collect data for the EIMS (Environmental Information Management System). Two national workshops on EIMS have been conducted. The event was attended by a representative selection of the numerous stakeholders involved. A prototype EIMS has been demonstrated and installed.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****ENVIRONMENTAL INFORMATION SYSTEMS FOR RANGELAND MONITORING****PROJECT DESCRIPTION**

The objective of the project is to develop a rangeland monitoring system for Baluchistan (Pakistan) in which:

- (a) resource base (soils, vegetation cover) has been mapped using high resolution satellite data (Landsat TM);
- (b) the topography has been derived from digital terrain models;
- (c) infrastructure (villages, roads, water holes, etc.) and drainage information have been taken from digitized maps; and
- (d) vegetation growth and development during the growing season is being monitored using low resolution satellite data from NOAA AVHRR.

The analysis of these data, combined with terrestrial data taken on a sample basis, allows the estimation of the grazing capacity of the area monitored.

**PROJECT STATUS**

All databases, hardware and software required for the rangeland monitoring (including a direct receiving station for NOAA AVHRR) have been installed. A user interface to streamline the data processing and analysis would be desirable.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING C OUNTRIES**

### **PROJECT TITLE**

**IMPROVEMENT OF COFFEE QUALITY BY PREVENTING MOULD GROWTH**

### **PROJECT DESCRIPTION**

This project seeks to investigate and address all factors in the production, handling and processing of coffee that influence the growth of mould and associated quality loss in coffee. One component of the project is to develop Good Agricultural Practices (GAP) for coffee, based on integrated phyto-sanitary management (IPSM) that are appropriate for the different types of farming systems involved in coffee production in Uganda. IPSM is environmentally sound and the adoption of such practices will reduce the use of pesticides and chemicals and hence related environmental contamination. A highly participatory approach is being used in the project to ensure the suitability and sustainability of recommended practices. Training in IPSM will be provided to target groups.

### **PROJECT STATUS**

The project has been recently approved and will soon be operational.

### **CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****CONTAMINANT DATABASE PROJECT****PROJECT DESCRIPTION**

This project seeks to establish a database on contaminants in food. Data provided on each contaminant should include: physical and chemical properties, environmental occurrence, sources and pathways of exposure, toxicological evaluations, monitoring and intake data, national maximum residue limits (MRLs).

The database will be an important tool for governments in improving food safety control. Since the source of contamination is generally environmental, the database will encourage and assist governments in elaborating policies and plans that protect the environment and reduce levels of environmental contaminants.

**PROJECT STATUS**

The project started in 1997 and is currently ongoing.

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE:**

**INTEGRATED SUSTAINABLE PARASITE CONTROL (TCP/IRA/8923)**

**PROJECT DESCRIPTION**

FAO assistance aims at reviewing Iran's programme of parasitic disease control, implemented by the country's veterinary service. Thus, the objectives of the project are:

- (a) to establish the cost efficiency and socio-economic effect of currently applied strategies;
- (b) to establish a complete database on the epidemiological pattern of gastro-intestinal nematodes and liver flukes;
- (c) to determine the extent of anthelmintic resistance; and
- (d) to validate revised cost efficient, integrated and sustainable parasite control strategies.

**PROJECT STATUS**

The project is just starting.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **CREATE NEW CLEANER PRODUCTION CENTRES**

**PROJECT TITLE:**

**APPUI À LA MISE EN OEUVRE D'UN PROGRAMME DE LUTTE BIOLOGIQUE  
CONTRE LA MINEUSE DES FEUILLES DES AGRUMES (TCP/MOR/8823)**

**PROJECT DESCRIPTION**

La mineuse des feuilles des agrumes (MFA) est caractérisé par une capacité d'extension rapide au Maroc. Par exemple, en moins d'une année toutes les régions agrumicoles du pays étaient reconnues attaquées.. Le Gouvernement considère le programme de lutte biologique contre le MFA, et a demandé l'assistance technique de la FAO pour définir un plan d'action pour sa mise en oeuvre. En particulière, l'objectif de l'assistance est de contribuer à l'appui technique et au renforcement des actions des services de la protection des végétaux afin d'intensifier leurs activités d'encadrement, de vulgarisation et d'essais en matière de lutte raisonnée contre la MFA.

**PROJECT STATUS**

The project has started its activities.

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**AREAS FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**
- **UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

**PROJECT TITLE:**

**PROJET DE GESTION DES RESSOURCES NATURELLES  
DANS LE PROVINCE DE TAZA (MAROC) (GCP/MOR/016/ITA)**

**PROJECT DESCRIPTION**

Les ressources naturelles du Maroc (les forêts et les parcours) sont soumises à une forte pression qui risque d'en compromettre la stabilité et la durabilité. Les parcours arides doivent être aménagés d'une forme plus rationnel, tout en utilisant des techniques d'amélioration et de gestion qui visent à augmenter la productivité. Le projet vise l'amélioration progressive du patrimoine naturel dans deux sites de la province de Taza à travers des actions d'aménagement et améliorations des parcours avec la participation consciente des populations aux choix de développement qui les concernent. La représentativité des deux sites choisis, l'introduction progressive de technologies et changements organisationnels, la formation de cadres des services techniques, des institutions locales et de la population aux méthodes et outils de la planification participative constituent des atouts pour la reproductibilité des acquis du projet.

**PROJECT STATUS**

The project has completed its first year (out of four).

**CONTACT INFORMATION**

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**
- **UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS**

### **PROJECT TITLE**

THESE ARE TWO CLOSELY INTER-RELATED PROJECTS:

- **PRÉPARATION DE LA RESTRUCTURATION ET DE RENFORCEMENT INSTITUTIONNEL DU SECTEUR COOPÉRATIF (TCP/MOR/6716)**
- **MISE EN OEUVRE DE LA RESTRUCTURATION ET DU RENFORCEMENT INSTITUTIONNEL DU SECTEUR COOPÉRATIF (UTF/MOR/020/MOR)**

### **PROJECT DESCRIPTION**

Elaboration des stratégies et des grandes lignes d'actions dans le cadre d'un plan de restructuration et de renforcement institutionnel d'ensemble du secteur coopératif, pour lui permettre d'affronter la concurrence sur des marchés de plus en plus ouvertes, et d'être capable de procurer aux petits producteurs les biens et services nécessaires pour développer leur production, améliorer leur productivité et contribuer au développement durable du pays.

### **PROJECT STATUS**

TCP project is in its final stage, whereas the main (UTF) project has completed one year of its activities.

### **CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****UTFN/SAU/006/SAU****NAJRAN HORTICULTURE DEVELOPMENT RESEARCH CENTRE (NHDR) PHASE IV****PROJECT DESCRIPTION**

- (a) Established virus free citrus planting material propagated by conventional and modern techniques;
- (b) Produced packages of appropriate technology to be generated through adaptive experiments on citrus varieties and crop production;
- (c) Ground water assessed and appropriate irrigation practices for water conservation developed;
- (d) National Integrated Pest Management Programme for citrus also developed;
- (e) Proper development of the citrus industry through extension of improved technologies and agro-techniques to farmers; and
- (f) National citrus certification programme developed.

**PROJECT STATUS**

Operationally active. NTE: July 2001.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**
- **CREATE NEW CLEANER PRODUCTION CENTRES**

**PROJECT TITLE**

**UTFN/SAU/008/SAU**

**RANGE AND ANIMAL DEVELOPMENT RESEARCH CENTRE, PHASE IV**

**PROJECT DESCRIPTION**

The objectives of the project are to:

- (a) Develop appropriate range management systems that emphasizes conservation of resources;
- (b) Improve sheep production systems through development and testing of technology options to improve efficiency and sustainability of natural resource use, and simultaneously provide economic benefits to producers;
- (c) Improve understanding of livestock production systems and socio-economic/cultural aspects of Bedouin communities and traditional producers, and increase their knowledge base on available technologies to enhance their participation in the use of project outputs and in natural resource management; and
- (d) Strengthen the Al Jouf Research Centre to ensure sustainability by enabling national staff to implement applied research and support extension programmes based on development and implementation of a sustainable strategy for knowledge information dissemination on farm trials and beneficiary-led demonstration activities.

**PROJECT STATUS**

Operationally active. NTE: July 2001.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES
- CREATE NEW CLEANER PRODUCTION CENTRES

**PROJECT TITLE**

UTFN/SAU/010/SAU: FISH FARMING CENTER PHASE IV

**PROJECT DESCRIPTION**

The project objectives are:

- (a) Upgrading of the main sea water supply system;
- (b) Upgrading of marine hatchery facilities;
- (c) Adaptation of offshore fish farming technology to Saudi Arabia;
- (d) Upgrading of laboratory facilities for water quality analysis and fish disease diagnosis;
- (e) Upgrading of extension services to the private sector and organization of training courses;
- (f) Upgrading of human resources capabilities within the Centre;
- (g) Upgrading of library facilities, information systems and communications; and
- (h) Execution of a survey of marine aquaculture potential in Saudi Arabia as a basis for the formulation of a National Aquaculture Plan.

**PROJECT STATUS**

Operationally active. EOD: Aug 96 and NTE: Dec 2001.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- CREATE NEW CLEANER PRODUCTION CENTRES

**PROJECT TITLE**

UTFN/SAU/013/SAU: WADI ZIDAN AGRICULTURE DEVELOPMENT - PHASE VII

**PROJECT DESCRIPTION**

The project objectives are:

- (a) Improved mango and other tropical fruit production;
- (b) Development of the Insect Pest Management Programme for mango and other fruits;
- (c) Ensure proper development of mango production through the extension of improved technologies and agro-techniques to farmers; and
- (d) Improvement of irrigation water management for agricultural production.

**PROJECT STATUS**

Operationally active. NTE: 2001.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE****REHABILITATION OF GREENHOUSE VEGETABLE PRODUCTION STANDARDS  
FOR SAFETY AND QUALITY****PROJECT DESCRIPTION**

A technical-economic assessment of the greenhouse crop sector to restore, at the national scale, farmers' capabilities for protected cultivation in Lebanon. In the medium and long term, the project will contribute to the following:

- (a) Reducing environmental pollution due to over-use of pesticides and fertilizers;
- (b) Implementing integrated production and principal protection for farmers as a more sustainable and environmentally friendly vegetable production system;
- (c) Preventing contamination of greenhouse soil and underground water; and
- (d) Promoting the adoption of an integrated production and protection management system, and improving cultural practice and technologies within the socio-economic context of the small scale Lebanese greenhouse farmer.

**PROJECT STATUS**

Pipeline project requested for FAO technical cooperation program.

The project is under appraisal by TCDT, TCA and AGP.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****TCP/JOR/6713: STRENGTHENING OF FOOD CONTROL****PROJECT DESCRIPTION**

Export market for Jordanian food products is enhanced with a more efficient national food control system. It is expected that this project will contribute to:

- (a) strengthening of national laboratories involved in the examination of food for quality and safety;
- (b) improvement of analytical capabilities and efficient management of the residue laboratory in the Pesticide Residue and Formulation Analysis Centre; and
- (c) improvement of the national export certification programme for fruits and vegetables.

**PROJECT STATUS**

Operationally active. NTE: 31/12/98.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION
- IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES

**PROJECT TITLE**

TCP/JOR/6715

**ASSISTANCE TO PARTICIPATORY EXTENSION AND TRAINING FOR OLIVE PRODUCTION****PROJECT DESCRIPTION**

The objective of the project is to increase olive production through application of appropriate extension methods in the major olive producing regions, i.e. the five Governorates of the Jordanian highlands (Balqa, Irbid, Zarqa, Jarash and Amman).

**PROJECT STATUS**

Operationally active. NTE: June 1999.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE**

**SYR/93/016: IMPROVEMENT OF OLIVE PRODUCTION AND PROCESSING**

**PROJECT DESCRIPTION**

The objectives of the project were the improvement of olive plant material and the introduction of new crop production technologies including Integrated Pest Management. Also, it aimed to improve quality control in the processing of the oil extracted from olives as well as the processing of table olives.

**PROJECT STATUS**

The project was completed in January 1999.

**CONTACT INFORMATION**

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Syria

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREA FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE**

**GCP/SYR/003/ITA: RANGE REHABILITATION AND ESTABLISHMENT OF  
WILDLIFE RESERVE IN THE SYRIAN STEPPE**

**PROJECT DESCRIPTION**

The project aims to help national institutions to develop appropriate techniques for sustainable use of grazing land and to establish an integrated model for the use and the maintenance of an area grazed by wild and domesticated animals.

**PROJECT STATUS**

This is an ongoing project with strong emphasis on wildlife rehabilitation in rangelands in Syria. The project is testing environmentally sound technologies in range rehabilitation and wildlife management.

**CONTACT INFORMATION**

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Syria

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE**

UTF/MAU/020/MAU: ASSISTANCE TECHNIQUE AU PROJET DE  
DÉVELOPPEMENT DES OASIS (PHASE II)

**PROJECT DESCRIPTION**

Assister techniquement la Direction nationale du projet dans la gestion de l'ensemble des activités du projet en vue de leur assurer une cohérence constante avec les grands objectifs de développement dans les domaines de ressources en eau dans les oasis, le crédit, la vulgarisation et la participation féminine.

**PROJECT STATUS**

Activities in progress. NTE due by end 2001.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

**TCP/MAU/6713: APPUI À LA RÉHABILITATION ET À L'AMÉNAGEMENT  
DE PETITS PÉRIMÈTRES IRRIGUÉS**

**PROJECT DESCRIPTION**

Appuyer les groupements coopératifs des périmètres irrigués sélectionnés à préparer les dossiers de factibilité et de financement des projets d'amélioration de leurs périmètres, et contribuer à la formation des techniciens et cadres des institutions concernées aux méthodes d'analyse économique.

**PROJECT STATUS**

Activities almost completed. NTE due in June 1999.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- DEVELOP NATIONAL TECHNOLOGY STRATEGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE**

TCP/MAU/8922: APPUI AU PROGRAMME DE NUTRITION COMMUNAUTAIRE

**PROJECT DESCRIPTION**

Apuyer le renforcement des capacités du SECF et des institutions nationales concernées en matière de sécurité alimentaire et de nutrition, promouvoir la production et la consommation des ressources alimentaires locales, et promouvoir une stratégie appropriée de communication nutritionnelle.

**PROJECT STATUS**

Newly approved project. Launch of field operations in progress.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- DEVELOP NATIONAL TECHNOLOGY STRATEGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE**

**UTF/TUN/027/TUN: ASSISTANCE TECHNIQUE AU DÉVELOPPEMENT  
FORESTIER COMMUNAUTAIRE PARTICIPATIF**

**PROJECT DESCRIPTION**

Assister à la préparation de Plan d'actions des Opérations Pilotes de Développement Intégré (OPDI) afin de recenser les populations intéressées, vulgariser et former les bénéficiaires et préparer des dossiers de micro-crédits.

**PROJECT STATUS**

Field operations in progress.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING**

**PROJECT TITLE**

**TCP/TUN/8823: PROMOTION DE LA PRODUCTION ET DE L'EXPORTATION DE FLEURS  
COUPÉES DE HAUTE QUALITÉ**

**PROJECT DESCRIPTION**

Examiner les possibilités d'exploitation économique des fleurs coupées.

**PROJECT STATUS**

Activities in progress. NTE due end 2001.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

TCP/TUN/8925: VALORISATION DES POISSONS BLEUS

**PROJECT DESCRIPTION**

Contribuer à une exploitation plus rationnelle des ressources naturelles renouvelables et une meilleure valorisation et distribution de la production des poissons bleus, et introduire des nouvelles technologies de valorisation.

**PROJECT STATUS**

Newly approved project. Field operations in progress.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- DEVELOP NATIONAL TECHNOLOGY STRATEGIES
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS

**PROJECT TITLE**

**GCP/HON/021/NET: RURAL DEVELOPMENT OF LEMPIRA SUR**

**PROJECT DESCRIPTION**

This project will appraise the scope of the first phase and maintain the development dynamic generated in the past few years. By the end of the project's activities, Lempira Sur will be in the process of improving the sustainability of technological innovations introduced in the production systems, allowing the farmers to increase their production, transform and commercialize their crops, reverse the destructive process of their natural resources and guarantee its rational use and management, and improve their quality of life.

**PROJECT STATUS**

Operative.

**CONTACT INFORMATION**

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**
- **UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS**

**PROJECT TITLE****DEFINICIÓN DE POLÍTICAS Y ESTRATEGIAS PARA EL  
DESARROLLO SOSTENIBLE EN ZONAS DE MONTAÑA****PROJECT DESCRIPTION**

El Proyecto TCP/MEX/6713 apoya al Gobierno de México para establecer los acuerdos vigentes en la Agenda 21 (Capítulo 13) para el desarrollo sustentable en zonas de montaña. Comprende planificación e implementación participativa con las instituciones, ONG y comunidades en microcuencas seleccionadas como demostrativas. Complementariamente se está formulando un Plan Nacional de Desarrollo para Zonas de Montaña en México.

**PROJECT STATUS**

Corresponde a un TCP (A) el cual se inició en enero de 1998, programándose su finalización para junio de 1999.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE****REGIONAL PROGRAMME FOR PLANNING AND MANAGEMENT  
OF PROTECTED AREAS IN THE AMAZON REGION, UE-TCA****PROJECT DESCRIPTION**

The activities executed by FAO in this project were part of a major project carried out by the European Union, in collaboration with the governments of the eight countries of the Amazon Cooperation Treaty. The activities under the responsibilities of FAO included the establishment of a system of protected areas for the Amazon countries, planning of the management of protected areas, and the organization of bi-national workshops, training courses, and other training activities.

**PROJECT STATUS**

The FAO activities in this project were carried out during 1996 - 1998. More than 150 professionals of the Amazon countries were trained, a regional system of protected areas was proposed, management plans of protected areas are been formulated using a Manual prepared by the project, and training materials have been published and distributed within the Region.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

### **PROJECT TITLE**

#### **ANALYSIS AND METHODOLOGICAL DESIGN FOR PREPARING MANAGEMENT PLANS ON PRIVATE PROTECTED AREAS IN CHILE**

### **PROJECT DESCRIPTION**

The project UTF/CHI/023/CHI is oriented to the following objectives: (a) To prepare an analysis of national and international experiences on the management of private protected areas; (b) To identify legal and institutional mechanisms for management of private protected areas; (c) To define methodological criteria for preparing management plans on private protected areas; (d) To identify mechanisms for monitoring and control of management plans; and (e) To define criteria for estimating the costs of monitoring and control of management plans on private protected areas.

The project is been implemented by FAO-RLC through an agreement with the National Commission of the Environment of Chile, during a period of 13 months, starting in January 1998.

### **PROJECT STATUS**

The Project will finish at the end of April 1999 and several Progress Reports have been prepared. The Final Report will include two volumes. The first volume is a compilation of several issues concerning private protected areas, such as legal mechanisms, present initiatives of private protected areas, criteria for the formulation of a system of private protected areas, methodologies for planning, monitoring and control. The second volume is a Manual for the Formulation of Management Plans on Private Protected Areas.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS

**PROJECT TITLE**

**GCP/ELS/004/NET: SUSTAINABLE AGRICULTURE ON HILLSIDE AREAS**

**PROJECT DESCRIPTION**

The project proposes sustainable production systems applied to the use and management of natural resources and socio-economic resources in hillside areas. This approach requires participative planning to incorporate productive practices and land and water conservation developed by project UNDP/FAO/ELS/86/005 "Agroforestry Support to Rural Communities", in the hillside farmers production systems, together with the necessary diversification of their production activities, including agro-forestry and animal husbandry.

**PROJECT STATUS**

Operative.

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**FOOD AND AGRICULTURE ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS

**PROJECT TITLE**

**GCP/NIC/025/NOR: MANAGEMENT OF INTEGRATED FERTILITY SYSTEMS**

**PROJECT DESCRIPTION**

This project is the second phase of project GCP/NIC/015/NOR. The second phase establishes a strategy based on four fields of action:

- (a) investigation/development of technical and economic alternatives for better plant nutrition and more efficient fertility management, adapted to small scale producers through experimentation in the field;
- (b) inducing small scale producers to participate in local agricultural organizations to promote integrated management of natural resources at a community level;
- (c) training of human resources to improve national capabilities of research services and agriculture/animal husbandry extension; and
- (d) development of a Strategic Unit on Fertilizers to promote local producers' associations for rational management of national resources and fertilizers.

**PROJECT STATUS**

Operative.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

### **PROJECT TITLE**

#### **ECUADOR: COMMUNITY FORESTRY DEVELOPMENT PROJECT IN THE ANDES OF ECUADOR (GCP/ECU/070/NET)**

### **PROJECT DESCRIPTION**

Mountain communities in Ecuador have made great progress in the sustainable management of their natural resources. Since its launch in October 1993, 8000 families in 250 rural communities have been reached by the FAO-Community Forestry Development Project in the Andes of Ecuador financed by the Dutch Government. Today these families show with pride and great confidence, agro-forestry systems, home gardens and intensive soil conservation practices, covering a total of 10,000 hectares. Benefits are concrete, including improved environmental conditions, better nutrition and health as well as increased income. Effective participation of the community in the formulation and execution of productive activities designed to meet felt needs according to desires and real capacities of the communities has made all this possible.

Income is generated by the marketing of local products, such as medicinal herbs, mushrooms, capers, nuts, fruit, syrup and exotic flowers. Families also sell some of the young trees they are raising in forest nurseries, spreading the environmental benefits of the project to other areas. Family gardens are improving nutrition by providing a readily available source of herbs, tubers, vegetables, fruit and grain. And trout farms have been established, using water flowing from the forests being managed by the villages. As well as providing an extra source of fresh protein, the trout are sold for the equivalent of US\$1 per pound weight in local markets.

Agricultural and livestock production is raised as palatable grass and brush species are cultivated, and the introduction of composting and worm culture has resulted in a sharp rise in vegetable and grain production, while reducing contamination from chemical fertilizers. The grasses planted to hold terraces in place are fed to hamsters - the traditional source of protein - and to cattle, resulting in increased meat and milk production. Besides leaf fodder and nitrogen enriched soils, the multiple-use, fast growing, native tree species planted produce a sustainable supply of fuel wood in just 4 years.

The project's impact goes beyond finances. By fostering community organization and participation, it has raised the community's internal development capacity to the point where local people now aggressively seek their own solutions to their poverty problems. Women have especially benefited from the project's focus on gender equality. Through the

## **FOOD AND AGRICULTURE ORGANIZATION**

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production and marketing of excess food and forest by-products, women not only make a greater contribution to family income, but also learn new personal skills, such as planning, negotiation and marketing. Many have overcome traditional taboos to take on executive roles in their communities, and women account for 35 percent of the 500 indigenous promoters who provide communication links between farm families and the project. Well trained and organized at the national level, these promoters are now a formidable force in promoting sustainable rural development.

Available data suggest that financial benefits to farmers have outweighed the costs of the project. The first five-year phase cost approximately US\$9 million (80 percent of it provided through an FAO/DUTCH Trust Fund) equal to US\$225 per family, per year. Some 40 local institutions will be strengthened to extend the participatory methods and productive systems validated by the project during its second five-year phase beginning in January 1999. If this institutional approach succeeds, the participatory farmer extension and training program developed by the project should be self-sustaining by the time the project is scheduled to end in December 2003.

### **PROJECT STATUS**

In execution.

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## **FOOD AND AGRICULTURE ORGANIZATION**

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### **AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**The following information is not related to specific projects but to a programme, the Joint FAO/WHO Food Standards Programme, established by FAO and WHO in 1962 with the objective of protecting consumers' health and ensuring fair practices in food trade.**

### **PROJECT TITLE**

**CODEX COMMITTEE ON PESTICIDE RESIDUES  
A JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX ALIMENATRIUS COMMISSION**

### **PROJECT DESCRIPTION**

The Codex Committee on Pesticide Residues (CCPR) is responsible for the following activities:

- (a) to establish Maximum Residue Limits (MRLs) for pesticide residues in specific food items and groups of foods;
- (b) to establish MRLs for pesticides in certain animal feeding stuffs moving in international trade where this is justified for reasons of protecting human health;
- (c) to consider other matters in relation to the safety of food and feed containing pesticide residues;
- (d) to establish maximum limits for environmental and industrial contaminants showing chemical or other similarity to pesticides, in specific food items or groups of food;

The work of the CCPR in the definition of pesticide MRLs is based on the scientific evaluation provided by the Joint FAO/WHO Meetings on Pesticide Residues, which means that Codex MRLs in food represent levels which are toxicologically acceptable.

### **PROJECT STATUS**

Ongoing. The Committee had elaborated over 3,270 maximum residue limits for pesticides including "extraneous" limits for residues of persistent pesticides in the environment. These recommendations may be consulted at the following URL: <http://apps.fao.org>.

**FOOD AND AGRICULTURE ORGANIZATION**

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**PROJECT TITLE****CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS  
A JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX ALIMENTARIUS COMMISSION****PROJECT DESCRIPTION**

The Codex Committee on Food Additives and Contaminants (CCFAC) is responsible for the following activities in relation to contaminants:

- (a) to establish permitted maximum levels for contaminants (including environmental contaminants) in foodstuffs and animal feeds, and
- (b) to consider and elaborate standards or codes for related subjects.

Maximum levels for heavy metals are included in most Codex standards. The Committee is currently reviewing present levels or considering new proposals for the levels of lead, arsenic, tin, cadmium in foods. It is also discussing how to address contamination by dioxins and PCBs. In addition, a Proposed Draft Code of Practice for Source-Directed Measures to Reduce Contamination of Foods with Chemicals is under development.

The work of the CCFAC in the definition of maximum levels for contaminants (and additives) is based on the scientific evaluation provided by the Joint FAO/WHO Expert Committee on Food Additives (JECFA), especially the evaluation of toxicity and considerations relating to intake.

**PROJECT STATUS**

Since its first meeting in 1964, the CCFAC has established or endorsed maximum levels for lead, tin, arsenic, methylmercury, aflatoxins in different foodstuffs. In addition, the Codex Code of Practice for the Reduction of Aflatoxin B1 in Raw Materials and Supplementary Feedingstuffs for Milk Producing Animals was adopted in 1997.

The recommendations of Codex at the international level may be used by member countries in the establishment and updating of their legislation in the area of contaminants. They also represent a reference in international trade in the framework of the SPS Agreement.

**PROJECT TITLE****DRAFT GUIDELINES FOR THE PRODUCTION, PROCESSING, LABELLING AND  
MARKETING OF ORGANICALLY PRODUCED FOODS - CODEX COMMITTEE ON FOOD  
LABELLING  
A JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX ALIMENTARIUS COMMISSION****PROJECT DESCRIPTION**

The responsibility for the elaboration of the Guidelines covering all aspects of organically produced foods is under the responsibility of the Codex Committee on Food Labelling as it

## **FOOD AND AGRICULTURE ORGANIZATION**

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relates to the claims that may appear in the labelling of foods. The CCFL is generally responsible for all matters relating to food labelling in order to ensure that information is accurate and does not mislead the consumer, and to ensure fair trade practices.

The Guidelines include definitions and principles concerning organic production systems and recommendations concerning production, processing and criteria to allow substances that can be used in an organic production system. It includes lists of permitted substances in production and processing, provisions concerning certification, export and import, claims and labelling, as well as a section on the transition or conversion period from conventional to organic agriculture.

### **PROJECT STATUS**

The Committee on Food Labelling has finalized the main body of the Guidelines and the sections relating to vegetable production, which will be submitted to the Codex Alimentarius Commission for final adoption in June 1999. The sections concerning animal production are still under consideration.

The Guidelines can be used by member countries in the establishment and updating of their regulations on organic production and as a basis to promote the development of organic methods in their countries, and facilitate trade in those products especially for developing countries. The Guidelines are of a general nature and can be adapted to the specific conditions prevailing in the countries concerned. They also represent a reference in international trade in the framework of the TBT Agreement.

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**GLOBAL ENVIRONMENT FACILITY**

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**NOTE ON PROJECT ACTIVITIES RELATED TO  
TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES  
FOR SUSTAINABLE DEVELOPMENT**

The GEF activities in its four focal areas are relevant to CSD Decision 6/3 on technology and span across the eight areas for action identified by the CSD. Although most GEF projects are currently under implementation and the number of completed projects is small relative to the size of the portfolio, emerging GEF project design experience and lessons learned can help contribute to:

- Identification of barriers;
- Development of national technology strategies;
- Feasibility studies on policy instruments; and
- Creation of new clean-production centers.

IN THE CLIMATE CHANGE FOCAL AREA, the GEF has promoted technology transfer of energy efficiency and renewable energy technologies through a series of projects in developing countries. The GEF pilot phase focused on making cost-effective greenhouse gas emissions reductions. Three specific operational programs were then developed for promoting energy efficiency and renewable energy technologies by reducing barriers, implementation costs, and long-term technology costs. A significant aim of these programs is to catalyze sustainable markets and enable the private sector to transfer technologies. From 1991-1998, the GEF approved grants for 61 energy efficiency and renewable energy projects in 38 countries, leveraging financing through loans and other resources from governments, other donor agencies, the private sector, and the three GEF project implementing agencies – the United Nations Development Programme, the United Nations Environment Programme and the World Bank Group.

GEF climate-change projects are testing and demonstrating a variety of financing and institutional models for promoting technology diffusion and removing identified barriers to energy efficiency and renewable energy technologies. These models and the experience with their implementation can provide useful inputs for feasibility studies on the use of policy instruments to promote transfer of ESTs. Several other projects assist public and private project developers to install grid-based wind, biomass and geothermal technologies. For energy efficiency technologies, projects promote technology diffusion through energy service companies, utility based demand side management, private sector sales of efficient lighting products, technical assistance and capacity building, and regulatory frameworks for municipal heating markets in formerly planned economies. In addition, projects provide direct assistance to manufacturers for developing and marketing more efficient refrigerators and industrial boilers through foreign technology transfer.

## **GLOBAL ENVIRONMENT FACILITY**

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IN THE OZONE FOCAL AREA, the GEF is currently supporting 15 ozone-depleting substances (ODS) phase-out projects in countries with economies in transition, which are not eligible for assistance under the Multilateral Fund established for the Montreal Protocol. In this projects, more than 90% of the financing supports procurement and transfer of environmentally sound, non-ODS technologies from OECD to recipient countries. Technologies transferred with GEF support include advanced solutions for the following sectors: refrigeration, foaming, solvents, fire protection, insulation, and aerosols. Technology choices have been adapted to local circumstances to assure the viability of relevant investments. Widespread dissemination of technology transfer results have been strongly encouraged to enable further diffusion of these technologies in economies in transition. A comprehensive study to analyze the GEF role in ODS phase-out, country program implementation and related technology transfer is currently being commissioned.

### **SOLAR-HOME-SYSTEMS PROJECTS**

The GEF has approved fourteen solar home systems projects in 16 countries (Argentina, Benin, Bolivia, China, Ghana, India, Indonesia, Peru, Sri Lanka, Togo, Zimbabwe, Kenya, Morocco, and a regional project in India, and the Global Solar Development Corporation).

### **ENERGY-EFFICIENT LIGHTING PROJECTS**

The GEF has funded four energy efficiency projects with lighting components - the Mexico High Efficiency Lighting Project, the Poland Efficient Lighting Project, the Jamaica Demand Side Management Demonstration Project, and the Thailand Promotion of Electricity Efficiency Project. The main CFL program approaches have been a combination of subsidized retail prices, creation of new distribution system innovations or capacities, new financing mechanisms, and consumer education and information campaigns.

### **CHINA ENERGY EFFICIENCY PROJECTS**

Four GEF projects are promoting energy efficiency technology transfer in China through a variety of approaches:

The China Efficient Industrial Boilers Project aims to develop affordable, energy-efficient and cleaner industrial boiler designs, to mass produce and market these high-efficiency boiler designs, and to disseminate more energy-efficient and cleaner boiler technologies throughout China. The project provides technology transfer and technical assistance to selected participating boiler manufacturers to develop high-efficiency boiler models.

The China Energy Conservation Project aims to achieve sustainable investment and increases in energy efficiency through the proliferation of energy performance contracting to a variety of companies in China and through improved access to information on successful experiences with energy efficiency.

The China Efficient Refrigerators Project takes a similar approach to the Efficient Boilers Project in addressing both the demand side of the refrigerator market in China and upgrading the technologies used by refrigerator manufacturers through technology transfer. The project will remove barriers to the widespread commercialization of energy efficient refrigerators.

The China Energy Conservation and Pollution Control in Township and Village Enterprises aims to raise the energy efficiency of the rural industrial sector in China by selecting key

## **GLOBAL ENVIRONMENT FACILITY**

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Township and Village Enterprises (TVEs) to carry out demonstration projects involving improved technologies. Four subsectors are targeted: brickmaking; coking; metal casting and cement.

IN THE BIODIVERSITY FOCAL AREA, the GEF projects also have transfer of technology elements. Projects to conserve and sustainably use earth's biological diversity incorporating a wide range of strategies account for nearly half of all GEF projects in the area of biodiversity. GEF activities are assisting with country efforts to demonstrate appropriate technologies to support institutional strengthening, capacity building and enhanced management techniques.

THE INTERNATIONAL WATERS PROJECTS focus on reversing degradation trends in multi-country water bodies or in protecting still relatively pristine marine or freshwater ecosystems. For example, GEF international waters projects are promoting the use of several environmentally sound technologies by demonstrating:

- (a) remedial technologies for the reduction of nutrient pollution from point sources, such as engineered wetlands and tertiary treatment for nutrient removal;
- (b) reduction of non-point sources of nutrient pollution from agriculture, a main cause of degradation of many international rivers and enclosed seas, by testing simple and cost-effective manure management techniques at farm level;
- (c) prevention of ship-based pollution along high traffic sea routes, and of over-fishing, is being sought through the introduction of precision navigation technologies using electronic charts and satellite based monitoring; and
- (d) technologies and harbor management techniques for the prevention of alien species introduction through ballast water discharges.

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**INTERNATIONAL TRADE CENTER – UNCTAD/WTO**

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**AREAS FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING**

**PROJECT TITLE****WORKSHOPS ON ECO-LABELLING AND RELATED MATTERS  
FOR TEXTILES AND CLOTHING INDUSTRIES****PROJECT DESCRIPTION**

The objectives of this project are:

- (a) to increase awareness and understanding of the environmental considerations in international trade in textiles and clothing in the future, and
- (b) to keep the producers/exporters in Asia, Africa, Central and Latin America and Central/Eastern Europe updated about the latest developments in matters related to trade and environment.

The principal objective is to increase the preparedness of the producers in developing countries and transition economies about the forthcoming changes in international trade related to eco-labelling.

**PROJECT STATUS**

Ongoing.

**CONTACT INFORMATION**

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**INTERNATIONAL TRADE CENTER – UNCTAD/WTO**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS

**PROJECT TITLE****IMPLICATIONS OF WTO AGREEMENTS FOR INTERNATIONAL TRADE  
IN ENVIRONMENTALLY SOUND TECHNOLOGIES AND RELATED PRODUCTS****PROJECT DESCRIPTION**

The project was an empirical study with follow-up dissemination seminars in India, Pakistan, Thailand, Malaysia and the Philippines on WTO Agreements implications for manufacturers/exporters of ESTs from developing countries. The principal objective of the study was to increase awareness of evolving market liberalization among developing country exporters/importers of ESTs. The study also analyzed the impact of WTO Agreements on Environmental Industries, summarized challenges and opportunities for diffusion of ESTs and synthesized the initial responses from EST business communities in developing countries to WTO Agreements.

**PROJECT STATUS**

Already completed.

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**UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT**

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**AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

**PROJECT TITLE**

**THE ROLE OF PUBLICLY FUNDED RESEARCH AND PUBLICLY OWNED TECHNOLOGIES  
IN THE TRANSFER AND DIFFUSION OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT DESCRIPTION**

The objective of this project is to revise and update the papers presented at the International Expert Meeting on the Role of Publicly Funded Research and Publicly Owned Technologies in the Transfer and Diffusion of ESTs, sponsored by the Government of the Republic of Korea and held in Kyongju in February 1998. The objective of the studies is to take stock of the role, scope and relative importance of publicly funded R&D in the transfer and diffusion of ESTs. The studies also address the role of ESTs in the context of innovation and examine the responses, strategies and cooperation. The revised papers as well as the findings and conclusions of the meeting will be published by UNCTAD in the forthcoming XIIth issue of the Advanced Technology Assessment System (ATAS XII).

As a follow up to the findings and conclusions of the above-mentioned project and in line with the recommendations of the CSD at its sixth session (April 1998), UNCTAD is exploring the feasibility of undertaking, in cooperation with other relevant international bodies, a knowledge-networking system designed to provide easy access to EST-related information and to cross-referenced and quality-controlled Internet websites related to ESTs, including renewable energy technologies. Users of such a network will be able to identify the potential actors, including Governments, business and industry, R&D institutions and technology intermediaries. The network will also provide up-to-date information/database on ESTs and their practices for all sectors.

**PROJECT STATUS**

ATAS XII is expected to be ready by the end of 1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**

**PROJECT TITLE****DEVELOPMENT OF REVISED  
ENVIRONMENTAL TECHNOLOGY ASSESSMENT (EnTA) PRIMER****PROJECT DESCRIPTION**

The goal of this Primer is to facilitate the practical application of environmental technology assessment (EnTA) in the technology selection and transfer process. The Primer will explain the EnTA process and illustrate its use with two detailed examples (one on an urban technology and one on an industrial technology). The Primer will also contain worksheets that decision-makers can use themselves to help them determine the environmental impact of a particular technology before making a decision. The Primer is predominately aimed at decision-makers in industry and public administrations.

**PROJECT STATUS**

Project development stage.

**CONTACT INFORMATION**

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**

**PROJECT TITLE****TECHNOLOGY TRANSFER GUIDELINES****PROJECT DESCRIPTION**

This project is aimed at developing "prior informed guidelines" to assist suppliers and users in the process of increasing the transfer and use of ESTs and reducing the transfer and use of environmentally damaging technologies. The goal of these guidelines is to help define a process of bringing together all parties involved in technology transaction in a cooperative effort to promote the transfer of more environmentally sound technologies on a world-wide basis. A key objective is to help developing countries avoid serious and costly health and environmental damages from imported technologies, by providing them with information about the potential adverse environmental impacts of these technologies, especially those that have been banned, restricted or discontinued in the exporting countries.

**PROJECT STATUS**

Project development stage.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **DEVELOP VOLUNTARY GUIDELINES FOR TECHNOLOGY COOPERATION**

**PROJECT TITLE****DEVELOPMENT OF RECOMMENDATIONS TO FACILITATE TRANSFER OF  
TECHNOLOGIES TO REDUCE RELEASES OF DIOXINS AND FURANS****PROJECT DESCRIPTION**

Objective of the project is to promote the transfer of environmentally sound technologies for the reduction of releases of Dioxins and Furans.

**PROJECT STATUS**

Project in preparation to support implementation of future global convention on Persistent Organic Pollutants.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT TITLE****ASIA REGIONAL WORKSHOP ON LESSONS LEARNED IN  
TECHNOLOGY TRANSFER UNDER THE MONTREAL PROTOCOL****PROJECT DESCRIPTION**

Three-day workshop to bring together governments and industries from the countries in the Asia-Pacific region who had significant experience as recipients of ozone friendly technologies and from the countries which are the source of such technologies.

The participants included representatives of the implementing agencies, bilateral agencies, the Secretariat of the Multilateral Fund and the Co-chair of TEAP and Co-chair of IPCC. Detailed presentations were made by the invited technology suppliers and technology recipients who shared their experiences with the participants with a view to draw lessons from these experiences for charting the future path and also with a view to interface with the Kyoto Protocol. The Ozone Officers presented the impediments to technology transfer in their country report presentations.

**PROJECT STATUS**

Workshop was held 1-3 March 1999. The lessons are found to be useful for the activities under climate change. The presentation on the conclusion of the workshop will be made at the "Joint IPCC/TEAP (Intergovernmental Panel on Climate Change/Technology and Economic Assessment Panel) Expert meeting" in May 1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT TITLE****YELLOW PAGES DIRECTORY****PROJECT DESCRIPTION**

The Yellow Pages is a resource guide to international directories and trade shows that describe ESTs and services. Information on ESTs and associated services is found predominately in company listings, equipment directories, government publications and trade shows. Increased dissemination of this information is needed so that decision-makers have access to a comprehensive range of options when making technology choices. Each entry provides a brief description of the directory or trade show, contact information and key words. It does not provide information on individual technologies rather it is a directory of directories to help users in their search for a specific application. The information is provided on diskette.

**PROJECT STATUS**

Project completed.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**

**PROJECT TITLE****INTERNATIONAL ACTION ON PERSISTENT ORGANIC POLLUTANTS (POPs)****PROJECT DESCRIPTION**

In addition to organizing the negotiations of a global convention on POPs, UNEP TIE Chemicals also carries out a number of immediate actions to facilitate implementation of the overall goal to reduce and eliminate releases of POPs at national, regional and international levels. Activities that partly relate to environmentally sound technologies mainly involve information exchange, including a database on alternative technologies for replacing/reducing release of POPs, covering inter alia Hexachlorobenzene, PCBs, and Dioxins and Furans. During 1999, this activity will be developed further to provide training and capacity building at national and regional level to facilitate the management of these substances. Also at the national level will be the introduction of measures to reduce/eliminate their releases.

**PROJECT STATUS**

Immediate actions on POPs are presently being implemented and negotiations of the global convention on POPs are expected for completion by the year 2000.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE****CLEANER PRODUCTION ASSESSMENT (CPA) INDUSTRIAL SECTOR GUIDES****PROJECT DESCRIPTION**

The CPA Industrial Sector Guides constitute a new series of guides covering eight different industrial sectors: meat processing, fish processing, dairies, foundries, metal finishing, textiles, tanneries, and breweries. The CPA Industrial Sector Guide series is aimed at encouraging industry to adopt cleaner production technologies. The Guides are mainly targeted to: (1) people working in industry who are responsible for environmental issues; and (2) Cleaner Production Centres, among others the UNIDO/UNEP NCPCs, and environmental consultants working with CP in industry.

The CPA guides can help industry and CP consultants to avoid or minimize environmental impacts from industrial production through implementation of CP. Reduction in environmental impact is often also followed by economic savings in the production. The new series focuses on CP and does not, as such, deal with traditional treatment and control equipment except for some very few cases. This restricted CP approach has been chosen in order to clearly distinguish CP from traditional approaches.

**PROJECT STATUS**

The CPA guides will be published from autumn 1999 onwards.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING**

**PROJECT TITLE****PROMOTING CLEANER PRODUCTION INVESTMENTS IN DEVELOPING COUNTRIES****PROJECT DESCRIPTION**

The project aims to demonstrate how to initiate and facilitate the financing of cleaner production investments in 5 developing countries (Tanzania, Vietnam, Zimbabwe, Guatemala and Nicaragua). It will do this by developing financing instruments for cleaner production investments, and by persuading public and private financial institutions and the industrial community to adopt these instruments. The results will be used to motivate key decision makers in the financial sector to pursue cleaner production investments in developing countries.

**PROJECT STATUS**

Project development stage.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS**

**PROJECT TITLE****DEVELOPING BETTER SYSTEMS FOR COMMUNICATING  
ENVIRONMENTAL BEST PRACTICE IN SMALL BUSINESS****PROJECT DESCRIPTION**

UNEP TIE carried out a two-phase project on how to improve systems for communicating environmental best practice (including the application of ESTs) in small and medium sized enterprises (SMEs). Issues associated with environmental management in SMEs are very dependent on the size of the individual enterprise. The problems posed and faced by SMEs can be taken to be a good example of the problems faced by industry in general. The study focused on providing answers to the following questions.

- What information do enterprises need?
- What information is available? (What additional information should be provided?)
- How is information delivered? (How could delivery be improved?)

The results of the study highlight that activities underway and those being designed should take into account how SMEs actually receive information and what kind of information works best to motivate behaviour change with regards to implementation of ESTs and improved environmental management.

**PROJECT STATUS**

Completed - report available.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREA FOR ACTION**

- **IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES**

**PROJECT TITLE****STUDY ON TECHNOLOGY TRANSFER****PROJECT DESCRIPTION**

The objectives of this activity include:

- (a) compile and update an inventory of the ODS replacement technologies and technical options for each sector where ODS is being employed;
- (b) assess the environmental soundness and economic viability of each of the technical options;
- (c) assess the current terms of availability of each technology for any valid intellectual property right coverage and any restrictions imposed either by the supplier, the recipient enterprise or the recipient country;
- (d) examine the international flow of ozone-benign technologies under the Multilateral Fund;
- (e) examine availability and environmental soundness;
- (f) examine the implementation of transfers of technology supported by the Multilateral Fund

**PROJECT STATUS**

Activities are underway.

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## **UNITED NATIONS ENVIRONMENT PROGRAMME**

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### **AREA FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

### **PROJECT TITLE**

#### **PROMOTING SUSTAINABLE MANAGEMENT OF URBAN WASTEWATER AND STORMWATER**

### **PROJECT DESCRIPTION**

Results: (1) Improved capacity of the administrators and responsible municipal decision-makers for implementing wastewater/stormwater programmes; (2) Strengthened capability of those officials to select, adopt, integrate and apply/manage technologies related to sewage system in implementing urban sewage programmes; and (3) Better integration of water supply and management of wastewater.

Outputs: (1) An International Source Book on ESTs for Urban Wastewater and Stormwater Management; (2) Information fliers, translated in a few other languages; (3) A training module for use by organizations conducting training courses in the field of wastewater and stormwater management or by organizations implementing investment programmes in wastewater; (4) Report on a pilot training course to examine the effectiveness of the training; and (5) ESTs included in maESTro.

### **PROJECT STATUS**

For implementation in 1998-1999.

### **CONTACT INFORMATION**

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

**DEVELOPMENT AND MAINTENANCE OF THE ELECTRONIC INFORMATION SYSTEM**

**PROJECT DESCRIPTION**

Result: Comprehensive and objective information on ESTs that are easily accessible to developing countries and countries with economies in transition.

Outputs: (1) A homepage with up-to-date and accurate information; (2) An EST information management tool (meESTro) that is accessible through the Internet, by CD-ROM and floppy diskette; (3) Hard copy reports, when required; (4) A report of the expert group meeting; (5) Computed translation of maESTro into French and Spanish; and (6) A Report on Environmental Technology Verification (ETV).

**PROJECT STATUS**

For implementation in 1998-1999.

**CONTACT INFORMATION**

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE****SYMPOSIUM ON EFFICIENT WATER USE IN URBAN AREAS****PROJECT DESCRIPTION**

Results: (1) Increased awareness of the significance of water leakage problems in urban water supply systems; (2) A compilation of available technology options and sound practices to prevent water leakage; (3) Improved capacity of the administrators and managers in the water sector; and (4) Better application of water resource management.

Outputs: (1) A report on available technologies and sound practices will be prepared in hard copy format; (2) An issue of the training module with transparency formatted exhibits and training guidelines; (3) An information leaflet will be prepared in order to promote awareness of the significance of water leakage problem in urban water supply systems; and (4) Available data will be reflected in the electronic information system.

**PROJECT STATUS**

For implementation in 1998-1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATION OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE****PLANNING AND MANAGEMENT OF  
LAKES AND RESERVOIRS TO ADDRESS EUTROPHICATION****PROJECT DESCRIPTION**

Results: (1) Enhanced awareness of decision makers, governmental local authorities, NGOs and society in general of the problems caused by eutrophication of lakes and reservoirs; (2) Enhanced capability of decision makers, government local authorities, NGOs and society in general to solve the problems caused by eutrophication of lakes and reservoirs; and (3) Encouraged decision makers, government local authorities, NGOs and society in general to prepare programmes and activities to prevent, control and recover lakes and reservoirs from eutrophication.

Outputs: (1) A publication on the analysis of economic, environmental and social effects of eutrophication of lakes and reservoirs, including ways and means to help solve the problem through sound practices in the planning and management of lakes and reservoirs (500 - 1,000 copies; title: Planning and Management of Lakes and Reservoirs for Eutrophication Prevention and Control - Sound Practices); (2) A training module on eutrophication problems and solutions designed for decision makers, NGOs and the local level involved in the planning and management of lakes and reservoirs; (3) A work book; and (4) An electronically searchable information system available or accessible through IETC's EST Directory.

**PROJECT STATUS**

For implementation in 1998-1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE**

**KATOWICE: TECHNOLOGIES FOR REPAIRING AND RE-ESTABLISHING  
SEWAGE AND WATER INFRASTRUCTURE IN SITU, AND WITH MINIMAL DISTURBANCE**

**PROJECT DESCRIPTION**

Result: Improved capacity in developing countries and countries with economies in transition to prevent pollution of groundwater as well as treatment of contaminated groundwater resources.

Outputs: (1) A report on the Roundtable on ESTs for Groundwater Remediation; (2) A preliminary report entitled: Environmentally Sound Technologies for Groundwater Remediation; (3) Information on ESTs for groundwater remediation accessible via internet, IETC's information system and maESTro; (4) A project developed in consultation with stakeholders and attractive to donors, to address the need for recovery of degraded infrastructure; and (5) Identification and demonstration of technologies for rehabilitating degraded water and sewage infrastructure.

**PROJECT STATUS**

For implementation in 1998-1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING

**PROJECT TITLE**

**JOINT TRAINING PROGRAMME OF IETC AND THE  
TECHNICAL COOPERATION COUNCIL OF THE PHILIPPINES (TCCP)  
ON ENVIRONMENTAL MANAGEMENT FOR LEAST DEVELOPED COUNTRIES (LDCs)**

**PROJECT DESCRIPTION**

Results: (1) Improved awareness of environmental issues and ESTs among decision makers and urban managers in LDCs; (2) Demonstrated possibilities of ESTs transfer flow from South to South, e.g. from developing to least developed countries, using lessons learned from experiences that participants are able to easily identify with; and (3) New or improved environmental policies and programmes among LDCs.

Outputs: (1) About 90-100 decision/polity makers and urban managers from 20-25 LDCs trained in environmental management over a period of two years; (2) A joint implementation report printed, published and disseminated to participating LDCs, supporting organizations, and others; (3) A follow-up report on participants' proposed institutional action plan; and (4) Training module (EM tool).

**PROJECT STATUS**

For implementation in 1998-1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES

**PROJECT TITLE****FRESHWATER AUGMENTATION IN AFRICA****PROJECT DESCRIPTION**

Results: (1) Promoted use and development of ESTs by decision makers and local authorities, NGOs, communities and grassroots for freshwater augmentation in Africa to assist in solving the existing problems; (2) Improved development and implementation of programmes and activities at municipal and local level to augment freshwater resources through the use of ESTs; and (3) Improved development and implementation of programmes and activities related to the perfection of existing endogenous ESTs aimed at the augmentation of freshwater resources.

Outputs: (1) The proceedings of the Pilot Seminar on ESTs for Freshwater Augmentation in Africa; and (2) An electronically searchable information system accessible through IETC's EST Directory.

**PROJECT STATUS**

For implementation in 1998-1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME / BIODIVERSITY PROGRAMME**

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**AREA FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT TITLE**

**SUPPORT TO CAIRO MIRCEN FOR ENHANCING THE  
MICROBIAL CULTURE COLLECTION SERVICE AND FOR MANPOWER TRAINING AND  
RESEARCH IN APPLIED ENVIRONMENTAL BIOTECHNOLOGY**

**PROJECT DESCRIPTION**

The project will strengthen research in applied microbiology relevant to the region and enhance capability of professionals from the region, particularly on the application of micro-organisms as biocontrol agents and for biodegradation of chemical pollutants, as well as in the application of microbial culture collections for upgrading wastes, production of microbial biomass and for bioremediation.

**PROJECT STATUS**

On-the-job training was conducted for a number of staff from various institutions on the methodology for development of indigenous biotechnologies. The Third Arab Conference on Modern Biotechnology and Areas of Application in the Arab World was conducted between 14-17 December 1998 in collaboration with the Egyptian Academy of Science and Technology.

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**UNITED NATIONS ENVIRONMENT PROGRAMME / BIODIVERSITY PROGRAMME**

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**AREA FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**

**PROJECT TITLE****SUPPORT FOR TRAINING WORKSHOPS ON MICROBIAL BIOFERTILIZERS  
AND PLANT MOLECULAR BIOLOGY AND BIOTECHNOLOGY****PROJECT DESCRIPTION**

The project supported the implementation of training workshops on Microbial Biofertilizers and Plant Molecular Biology and Biotechnology. The training workshop on microbial fertilizers focused on principles and tested techniques of production, storage, quality control and appropriate use of biofertilizers. The training workshop on plant molecular biology and biotechnology will focus on gene manipulation for more efficient plant genetic transformations and better expression of the incorporated foreign gene(s).

**PROJECT STATUS**

The training workshop on microbial fertilizers was held on 8-14 November 1998 at the Microbial Biofertilizer Monitoring and Testing Centre, Ministry of Agriculture. The training workshop on plant molecular biology and biotechnology will be undertaken before June 1999.

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**UNITED NATIONS ENVIRONMENT PROGRAMME / BIODIVERSITY PROGRAMME****AREAS FOR ACTION**

- **DEVELOP NATIONAL TECHNOLOGY STRATEGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**

**PROJECT TITLE****UNEP/GEF PILOT BIOSAFETY ENABLING ACTIVITY  
COMPONENT 1 (NATIONAL) AND COMPONENT 2 (GLOBAL)****PROJECT DESCRIPTION**

The national component of this project is being executed by 18 National Executing Agencies (NEAs) for the preparation of their National Biosafety Frameworks - Bolivia, Bulgaria, Cameroon, China, Cuba, Egypt, Hungary, Kenya, Malawi, Mauritania, Mauritius, Namibia, Pakistan, Poland, Russian Federation, Tunisia, Uganda and Zambia. This component comprises a representative set of countries of variable sizes, geographical locations, level of socio-economic development, as well as different stages of biotechnology development and application of biotechnology products.

The global component of this project comprises two sessions of Regional Workshops on Biosafety in each of the following regions: Latin America and the Caribbean, Central and Eastern Europe, Africa, and Asia/Pacific. The purpose of the regional workshops is to promote greater awareness, understanding and appreciation of biosafety and biotechnology issues by countries, in particular developing countries and countries with economies in transition.

The workshops aim to promote the exchange of views and information on biosafety by countries, the scientific community, relevant NGOs, the private sector, and other organizations. The workshops also aim to facilitate the preparation and implementation of effective National Biosafety Frameworks within the context of the implementation of the UNEP International Technical Guidelines for Safety in Biotechnology (UNEPITGSB) and/or any future legal instruments. The workshops will address issues pertinent to capacity building requirements to enhance safety in biotechnology at national, regional and global levels.

Session 1 covered issues related to risk assessment and risk management of living modified organisms and organisms with novel traits resulting from biotechnology, including environmental impact assessment, for enhancement of biosafety.

Session 2 focused on issues related to transboundary transfer including appropriate mechanisms and modalities for supply and exchange of information regarding biosafety.

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**UNITED NATIONS ENVIRONMENT PROGRAMME / BIODIVERSITY PROGRAMME**

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**PROJECT STATUS**

National Component: Financial and substantive progress reports have been submitted from each of the countries, accompanied by supplementary documents when considered necessary. Most of the countries have concluded (or are concluding) National Biodiversity Surveys, and have conducted at least one National Biosafety Workshop. The progress of each country has been checked, using a standardized benchmark, and detailed evaluation of the activities taken so far in each country is under way.

Global Component: Two back-to-back sessions of Regional Workshops on Biosafety were conducted in each of the following regions: for Latin America and the Caribbean, in Havana, Cuba, 26-30 October 1998; for Central European Region, in Bled, Slovenia, 11-15 November 1998; for Africa (Anglophone & Francophone), in Nairobi, Kenya, from 23-17 November 1998; and for Asia and Pacific, in New Delhi, India, from 7-11 December 1998. The reports of individual Regional Workshops on Biosafety are currently being finalized.

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**UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES

**PROJECT TITLE****HARARE DECLARATION ON SOLAR ENERGY AND SUSTAINABLE DEVELOPMENT  
(WORLD SOLAR PROGRAMME)****PROJECT DESCRIPTION**

The World Solar Programme was launched on the occasion of the World Solar Summit for global solar activities. The commitments made in the World Solar Summit are:

- (1) to work towards the wider use of solar energy to enhance the economic and social development of all people;
- (2) to work towards policies and effective mechanisms that will speed up and facilitate the use of solar energy, avoiding duplication and administrative delays, and the encouragement of international cooperation, including participation in regional and international bodies, scientific and technical organizations; and
- (3) to work towards the greater use of solar energy through the provision of adequate technical assistance and funding, the full utilization of existing international funds, and the facilitation of increased participation by both public and private sectors.

**PROJECT STATUS**

The Harare Declaration on Solar Energy and Sustainable Development was launched on the occasion of the World Solar Summit held in Harare, Zimbabwe, on 17 September 1996.

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**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- IMPROVE ACCESS TO PUBLICLY OWNED AND PUBLICLY FUNDED TECHNOLOGIES

**PROJECT TITLE**

**MUNICIPAL SOLID WASTE MANAGEMENT SYSTEMS, TECHNICAL STANDARDS, TREATMENT AND DISPOSAL, CAPACITY BUILDING IN CHINA (CHINA'S AGENDA 21) BEIJING AND SELECTED MUNICIPALITIES OF GUANGZHOU, ZHANGZHOU, MIANYANG, QINGDAO, AND CHANGZHOU**

**PROJECT DESCRIPTION**

Municipal Solid Waste (MSW) is a major environmental problem in China, and present management and technical capability is inadequate to properly address this. The project shall strengthen the capability of the municipalities within China to better manage MSW, through both direct support to selected demonstration cities as well as through strengthening of the Ministry of Construction (MOC) at the central level. This will increase the capability of the MOC to develop appropriate strategies and provide advice to the municipalities in planning MSW management and operations on an ongoing basis. Support shall also be given to strengthen existing networks for the dissemination of information.

**PROJECT STATUS**

The project implementation started in June 1998 with the selection and fielding of the CTA of the project. Local staff and two international experts were fielded in 1998. Office equipment for Environmental Sanitation and Technology Research Center - ESETRC, was purchased, training workshops were held in all five cities (also in 1998). The 1st Steering Committee Meeting was held in November 1998. The CTA undertook his 2nd mission in March 1999. Several international experts as well as local consultants were recruited in March 1999.

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**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- CREATE NEW CLEANER PRODUCTION CENTRES

**PROJECT TITLE**

**ESTABLISHMENT OF NATIONAL CLEANER PRODUCTION CENTRES (NCPCs)  
IN EL SALVADOR (NOVEMBER 1998) AND COSTA RICA (DECEMBER 1998)**

**PROJECT DESCRIPTION**

The UNIDO-UNEP Cleaner Production Centres serve both coordinating and catalytic roles for cleaner production by providing policy advice on environmental management, supporting assessments of, and investments in, cleaner production techniques and technologies, training industry and government professionals in this new area of industrial environmental management and by being a source of information on cleaner production.

**PROJECT STATUS**

The projects were inaugurated in the last quarter of 1998, and their implementation has commenced.

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**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- CREATE NEW CLEANER PRODUCTION CENTRES

**PROJECT TITLE**

**ESTABLISHMENT OF NATIONAL CLEANER PRODUCTION CENTRES (NCPCs)  
IN CROATIA, GUATEMALA AND MOROCCO (END 1999)**

**PROJECT DESCRIPTION**

The UNIDO-UNEP Cleaner Production Centres serve as a coordinating and catalytic role for cleaner production by providing policy advice on environmental management, supporting assessments of, and investments in cleaner production techniques and technologies, training industry and government professionals in this new area of industrial environmental management and by being a source of information on cleaner production.

**PROJECT STATUS**

The projects are in the preparation phase. Expected implementation by the end of 1999.

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## **UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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### **AREAS FOR ACTION**

- **IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES**
- **EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES**
- **CREATE NEW CLEANER PRODUCTION CENTRES**

### **PROJECT TITLE**

**TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES  
THROUGH UNIDO'S EXPERIENCE IN ESTABLISHING  
NATIONAL CLEANER PRODUCTION CENTRES (NCPCs)  
THE BALTIC REGION: ESTONIA, LATVIA AND LITHUANIA**

### **PROJECT DESCRIPTION**

Under the International Centre for Science and High Technology (ICS) programmes, UNIDO has been assisting developing countries in creating the required and appropriate conditions for the adoption of technologies which are both competitive and environmentally sound. Such is the aim of Capacity Building on TECCH (Technology, Environment, Competitiveness and Change Management). The purpose of TECCH is to develop:

- (a) mechanisms, approaches and solutions based on environmentally sound technologies leading to competitive advantage and cost effectiveness of SMEs;
- (b) tools for effective sourcing, transfer, acquisition, absorption and monitoring of competitive and environmentally sound technologies for SMEs; and
- (c) assistance and recommendations aimed at enhancing and improving capability of SME stakeholder network, i.e. national environmental and technology management institutions, R&D institutions, industry associations, confederations, etc. that have the vocation to support SMEs in developing countries.

An instrument of the TECCH programme is the TECCH Guidelines which provide a series of diagnostic tools to allow SMEs to define strategic technological needs, having in mind the constantly changing competitive parameters. The guidelines also provide guidance on sourcing, identification, transfer and absorption of technologies that accommodate the requisites of competitiveness and environmental soundness. Since 1997, the TECCH initiative was piloted in the Philippines, India, Czech Republic, Lithuania, Romania, Slovenia, Slovakia, Hungary and Tunisia.

### **PROJECT STATUS**

Project documents are under preparation and fund mobilization is in progress.

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**

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**AREAS FOR ACTION**

- IDENTIFY BARRIERS TO THE TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES
- EVALUATE APPLICATIONS OF ECO-EFFICIENCY AND CLEANER PRODUCTION IN DEVELOPING COUNTRIES
- STUDY FACTORS THAT INFLUENCE COMPANY DECISION MAKING
- UNDERTAKE FEASIBILITY STUDIES ON USE OF POLICY INSTRUMENTS TO PROMOTE TRANSFER OF ESTS

**PROJECT TITLE**

**AN EVALUATION OF THE EFFECTIVENESS OF INCENTIVES TO  
ENCOURAGE INDUSTRY TO ADOPT CLEANER PRODUCTION TECHNOLOGIES  
INVESTMENT PROMOTION FOR ENVIRONMENTALLY SOUND TECHNOLOGY  
FOR THE TAIHU BASIN, CHINA**

**PROJECT DESCRIPTION**

The programme aims to increase sustainable industrial production in the Taihu Basin using environmentally sound technologies (ESTs) and processes in selected priority sectors through market oriented industrial collaboration. This ECO-promotion programme will:

- (a) assess the policy, institutional and business climate existing in the Taihu Basin with a view of identifying opportunities for investing in ESTs and processes; and
- (b) increase industrial cooperation/partnership in ESTs and processes in the chemical, printing and dyeing, food processing, pulp & paper, and electroplating industries between Taihu and foreign enterprises. This ECO-promotion programme has been presented as a programme to increase awareness of international environmental requirements on the part of the Chinese entrepreneurs as well as to strengthen industrial capacity relating to the adoption of ESTs and processes.

**PROJECT STATUS**

The implementation of the above described phase I (US/CPR/98/030) will terminate in June 1999 after the holding of the Investment Forum for ESTs for Taihu Basin to be held in Huzhou City, 26-28 May 1999. Phase II of the project has been formulated to follow up. It should establish realistic and sustainable ECO-investment/technology promotion strategy and activities and further improve capacities of central and local counterparts to ensure continuous dialogues with potential investors covering the medium term period. Mobilization of funds is in progress.

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