



# Global Environment Facility

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GEF Council  
December 8 - 10, 1999  
Agenda Item 6

## WORK PROGRAM SUBMITTED FOR COUNCIL APPROVAL

***Recommended Council Decision:***

The Council reviewed the proposed Work Program submitted to Council in document GEF/C.13/8 and approves it subject to comments made during the Council meeting and additional comments that may be submitted to the Secretariat by December 31, 1999.

The Council finds that [, with the exception of \_\_\_\_\_,] each project presented to it as part of the Work Program (i) is or would be consistent with the Instrument and GEF policies and procedures and (ii) may be endorsed by the CEO for final approval by the Implementing Agency, provided that the CEO circulates to the Council Members, prior to endorsement, draft final project documents fully incorporating the Council's comments on the Work program accompanied by a satisfactory explanation by the CEO of how such comments and comments of the STAP reviewer have been addressed and a confirmation by the CEO that the project continues to be consistent with the Instrument and GEF policies and procedures.

[With respect to \_\_\_\_\_ the Council requests the Secretariat to arrange for Council Members to receive project documents and within four weeks transmit to the CEO any concerns they may have prior to the CEO endorsing a project document for final approval by the Implementing Agency.]

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## WORK PROGRAM

1. The Chief Executive Officer (CEO), after reviewing the conclusions and recommendations of the bilateral review meetings with the Implementing Agencies, proposes to the Council for its consideration and approval a Work Program comprising fifteen full sized project proposals, three Medium-Sized Projects (MSPs), and one Enabling Activity. The Work Program has a proposed GEF allocation of \$161.60 million for projects with a total cost of \$935.27 million (see Annex A for details). If the Council approves this Work Program, the cumulative GEF allocation (exclusive of administrative costs and fees) would be \$2,690.02 million (see Annex B for details).
2. Four projects have been included in this Work Program for Council approval because they exceed the CEO's approval limit of \$750,000; three MSPs and one enabling activity. The three MSPs are *Vietnam: Hon Mun Marine Protected Area Pilot Project* (World Bank), *Regional (Lebanon, Palestinian Authority): Capacity Building for the Adoption and Application of Energy Codes for Buildings* (UNDP), and *Tajikistan: Programme for Phasing out Ozone Depleting Substances* (UNDP/UNEP). The Enabling Activity is the *India: Enabling Activity for the Preparation of India's Initial Communication to the UNFCCC* (UNDP).
3. All other MSPs have been approved by the CEO under expedited procedures. Twenty-five such MSPs, with a total GEF allocation of \$18.08 million, were approved in this reporting period (March 1, 1999 to September 31, 1999): eighteen biodiversity projects totaling \$13.49 million, five climate change projects totaling \$3.14 million, and two international waters projects totaling \$1.45 million (see Annex C for details). These approvals bring to 59 the total number of MSPs approved to date, with a total GEF allocation of \$36.2 million.
4. In the reporting period, the Project Preparation and Development Facility (PDF) financed 28 PDF As amounting to \$0.681 million approved by the Implementing Agencies, and 30 PDF Bs totaling \$8.556 million approved by the CEO (see Annex D and E for details).
5. GEF support for Enabling Activities through to September 1999 covers 120 countries for biodiversity and 125 countries for climate change (activities for all 120 countries under biodiversity and 90 countries under climate change were approved under the expedited procedures). As most eligible countries have received support for first national reports or communications, only 16 new requests (including 8 for Clearinghouse Mechanism add-on projects) were made during this reporting period (March 1, 1999 – September 30, 1999), with a total financing of \$2.12 million (see Annex F for details). As of September 1999, 78 of the countries that are supported by GEF had submitted their first national reports under Convention on Biological Diversity and 11 countries had submitted their first national communications under the UN Framework Convention on Climate Change.
6. One Targeted Research proposal has been reviewed and cleared by the GEF Research Committee. This was the *Mexico: Oaxaca Sustainable Hillside* MSP. The Committee also agreed on streamlined procedures.
7. At its May 1999, meeting, the Council approved the introduction and use of a fee-based system in FY00 to cover and reimburse the project implementation costs incurred by an

Implementing Agency in respect of GEF projects<sup>1</sup> and applicable to all projects approved from July 1, 1999. As experience is gained, a flat-fee structure would be applicable directly to the majority of proposed projects. In the case of projects which fall under currently GEF-recognized project-variables, the Implementing Agencies would substantiate, negotiate, and agree on an adjustment on the flat-fee to account for the impact of the identified project variables.

### **Flat Fees for Standard Projects**

<b>Project-Type</b>	<b>INV</b>	<b>TA</b>	<b>MSP</b>	<b>EEA</b>
<b>Flat Fee</b>	\$942,000	\$382,000	\$146,000	\$54,000

INV – Investment

TA – Technical Assistance

MSP – Medium-sized Project

EEA – Expedited Enabling Activity

8. For projects approved after July 1, 1999 and for projects submitted in the current Work Program, the GEF Secretariat negotiated fees with each of the Implementing Agencies. In many cases, Standard Fees applied, but in others some adjustments were made for complexity or reduced scope. The fees applying to the Work Program are listed in Annex A. The MSPs and Enabling Activities approved under expedited procedures since July 1, 1999 are identified in Annex C and Annex F, along with the applicable fees.

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<sup>1</sup> *Proposal for a Fee-Based System for Funding GEF Project Implementation*, GEF/C.13/11

## CONFORMITY WITH PROJECT REVIEW CRITERIA

### REPLICABILITY AND REPLICATION

9. As GEF's own resources are limited, it has always been important to stimulate the replication, by others, of successful and innovative GEF activities. The Secretariat has reported good examples of Implementing Agency practice in building replicability into the design of GEF projects. (See below and also previous Work Program cover notes, and the GEF Pipeline cover note for such examples.) The Secretariat has also undertaken a number of broader initiatives to stimulate replication by Bilateral Development Cooperation Agencies, Regional Development Banks, and others.<sup>2</sup>

10. In this Work Program there are several innovative approaches and technologies with potential for replication. Mechanisms to ensure replicability within countries and regions are increasingly part of project design.

- (a) The *Bangladesh: Coastal and Wetland Biodiversity Conservation* project seeks to institutionalize the management of Ecologically Critical Areas that are provided under the Environmental Conservation Act. By preparing an action plan, the project will establish an approach, which can be replicated to other Ecologically Critical Areas.
- (b) The *Vietnam: Hon Mun Marine Protected Area* MSP, the first of its kind in the country, has a component to transfer information and skills at the national level to stimulate replication.
- (c) The *Brazil: Promoting Biodiversity Conservation and Sustainable Use* project is a demonstration being developed with all key stakeholders at the national and municipal level, including timber operators and other local participants. The project has good replication potential in neighboring countries such as Peru, Bolivia, Guyana, and Suriname. Lessons from this project on stakeholder participation for conservation and sustainable use in frontier zones are directly relevant to forested areas in other countries.
- (d) The *Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas* project will provide an effective model for the conservation and sustainable use of grazing-dependent habitats in arid and semi-arid areas. In addition, the project includes an explicit project component to disseminate lessons and best practices.
- (e) The *Colombia: Conservation of Biodiversity in the Sierra Nevada de Santa Marta* project explicitly focuses on knowledge generation and dissemination through project components for direct stakeholder involvement, organizational strengthening and coordination, and collaborative development and management of pilot sustainable development projects. The project also implements "best practice" experience from the recent review of conservation Trust Funds.
- (f) The *India: Biomass Energy for Rural India* project will be implemented in two clusters of 24 villages each with the primary objective of demonstrating the

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<sup>2</sup> See *GEF Corporate Business Plan FY01-FY03*, GEF/C.14/9

technical and economic viability of bio-energy technology on a significant scale. The forecasted project impact ("abatement of up to 177 million tons of carbon") builds on the assumption that pilot biomass applications which would be introduced to pilot 24 villages would be replicated in 86,000 currently unelectrified communities. Therefore the project features a very strong good-practice documentation and dissemination component requiring almost 30 per cent of the budget. Taking into account the variety of initial risks, such as uncertainties about social acceptance, disbursements for dissemination would be linked to results in the pilot villages. To ensure replicability, the project will focus on developing strategies for overcoming financial, market, and institutional barriers. An information package for large-scale dissemination of bio-energy technology will also be prepared.

- (g) The *Thailand: Removal of Barriers to Biomass Power Generation and Cogeneration* project will reduce greenhouse gas emissions by accelerating the growth of biomass generation. Components will be developed to facilitate replication including demonstration projects, development of a receptive regulatory framework, easier access to commercial financing and guarantees, and organizing investment tours. These elements will be combined into a "Biomass Power and Co-generation Clearinghouse".
- (h) The *Hungary: Szombathely CHP/Biomass* project will develop policy reforms that will facilitate replication of other low emissions energy technologies in Hungary.
- (i) The *China: Second Beijing Environment Project* will facilitate barrier removal through a demonstration project involving 60 boilers in different market segments. Market conditions will be developed to facilitate the conversion of at least 5,000 boilers.

11. Building *replicability* into project design and preparing plans for subsequent replication is a general issue. At the concept stage, it is useful to identify the innovative elements, the desired catalytic effect, and the demonstration value of the project proposed. To follow this through, the project design should include a number of elements to facilitate future replication, such as: special monitoring, dissemination, outreach and awareness raising for replication target groups, documentation of unique lessons and experience, data collection to assist replication (i.e., possibly beyond the immediate needs of the project itself), regional workshops, provision of training, institutional twinning, technology transfer, development of local expertise to assist neighboring countries, maximizing the demonstration value, pre-feasibility studies, and assessments of replication potential.

12. Designing projects for *replication* of previous successes raises another general issue: drawing on past GEF experience. With the maturation of the GEF portfolio in certain areas, some new proposals are repeating measures or technologies found in earlier GEF project designs. It would be timely to codify good practice for cost-effective technology transfer and learning from that earlier experience as an alternative to direct repetition. Use can be made in such circumstances of techniques similar to those above e.g., seeking twinning arrangements, obtaining data and experience from regional experts engaged in earlier activities of the same sort,

and securing the transfer of experience, knowledge, and/or technology, rather than repeating the effort directly.

13. The GEF Secretariat and the Implementing Agencies are currently discussing ways to build on and codify good practice in replicability and replication. The Secretariat is identifying examples of good practice in the Implementing Agencies' project proposals for a source book to aid future project design, and is consulting with the agencies on the application of specific project review criteria on these matters. The interagency Task Forces, in preparing the Program Status Reviews, will be asked to consider the degree of portfolio maturation and the need for emphasis on future replication.

#### SUSTAINABILITY

14. In biodiversity, recurrent cost financing is essential for sustainability. In the climate area, barrier removal projects continue to address sustainability primarily through support for the creation of financial mechanisms, new institutions, and demonstrations. Sustainability after project completion of GEF facilitated actions is addressed in this Work Program in a number of ways, as follows.

- (a) To ensure sustainability beyond the seven-year project life, the *Bangladesh: Coastal and Wetland Biodiversity Conservation* project will develop and implement appropriate policies, alternative livelihood and sustainable use strategies.
- (b) Sustainability will be assured in the *Brazil: Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests of Northwestern Mato Grosso* project by developing and piloting agro-silvo-pastoral systems and non-forest products for the benefit of local communities. The project conforms to principles on sustainable logging and will demonstrate how logging operations can be biodiversity-friendly in collaboration with local logging operations.
- (c) The *Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas* project provides for the development of alternative livelihoods and supplementary incomes for local peoples as a way to encourage a shift to sustainable land use. The project also ensures commitment and sustainability of project objectives by securing cash and in-kind contributions from not only government, but also local peoples.
- (d) The *Philippines: Samar Island Biodiversity* project will establish an integrated protected areas fund, capitalized by visitor fees, road tolls, permit fees and penalties. These revenue-generating mechanisms will help ensure that the project benefits will be sustained beyond the GEF project period.
- (e) The *Vietnam: Hon Mun Marine Protected Area* MSP has a clearly articulated sustainable financing strategy, which will provide returns once the implementation phase begins.
- (f) The *Venezuela: Conservation of Biological Diversity in the Orinoco Delta Biosphere Reserve and Lower Orinoco River Basin* project will ensure sustainability over the long term by developing new conservation partnerships between government authorities, NGOs, the private sector and local communities.



In addition, provisions are made in the project to strengthen the ministry budgetary negotiating capacity and provide compensatory mitigation.

- (g) To ensure sustainability of the *Colombia: Conservation of Biodiversity in the Sierra Nevada de Santa Marta* project, a trust fund will be established with key stakeholders to finance conservation and regional development activities.
- (h) The government of Costa Rica, with GEF support, has guaranteed the activities of FONAFIFO for the first five years of operation in the *Costa Rica: Ecomarkets* project. Provisions for extending the project life an additional 15 years are being explored.
- (i) A number of key partners, including private investors, local government, governments of Hungary and Austria, the European Union will sustain the success of the *Hungary: Szombathely CHP/Biomass* project. The city has released a request for proposals to identify a suitable private investor. Early involvement will ensure that the project is developed and implemented in a financially sound manner and that emissions reductions can be sustained in the long term.

#### INDICATORS, MONITORING AND EVALUATION

15. The identification of relevant indicators of impact, and the establishment of an appropriate monitoring and evaluation plan at the project level will ensure that global environmental benefits from GEF investments will be achieved. Projects in the current GEF work program have incorporated indicators and monitoring and evaluation plans in a variety of ways.

- (a) In the project, *Brazil: Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests of Northwestern Mato Grosso*, indicators are clearly highlighted in the logical framework and are quantifiable.
- (b) The *Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas* project includes project level indicators in the logical framework. In addition, the project will be independently evaluated twice during its project life. Annual evaluations by the Provincial and National Coordinating Committees established to oversee the project would also be conducted.
- (c) Two mandatory independent evaluations will be conducted, in addition to including performance indicators in the logical framework for the *Philippines: Samar Island Biodiversity* project. Independent evaluations will occur before the initiation of the Phase II and on project completion.
- (d) The *Thailand: Removal of Barriers to Biomass Power Generation and Co-generation* project will be subjected to at least one external evaluation. In addition, detailed and measurable performance indicators for project activities and pilot projects will be prepared by the project team with all key stakeholders, the agreed performance indicators will be assessed every six months.
- (e) The projected impact of the *Guinea: Rural Energy* project -- abatement of about 208,000 tons of carbon dioxide emissions -- builds on the assumption that follow-on investments financed by mainstream banks would be delivered at a volume of about 150 per cent of the project sponsored installations. A comprehensive ex-post evaluation program will be needed to verify the achievement of forecasted

impacts on rural energy markets in Guinea. Before endorsement, a detailed M&E plan will be developed that would track changes in the target market segments.

#### PRIVATE SECTOR

16. Almost all GEF projects involve the private sector at least as a provider of technology, goods, or services -- typically awarded in a competitive bidding process where they respond to a request for proposal. The private sector significantly co-financed several GEF projects in this Work Program, in particular the China and Mexico climate change projects and the Venezuela biodiversity project (see para 24). It is important however to seek opportunities to work with the private sector much earlier and more strategically. This Work Program illustrates some ways in which this can be done.

- (a) The *Brazil: Promoting Biodiversity Conservation and Sustainable Use* project is being developed with the active participation of all key stakeholders including private sector timber operators. The project is being co-financed by Peugeot and Banco Axial and is supported by commercial timber operators.
- (b) Beyond working with the local Warao communities residing in the biosphere reserve, the *Venezuela: Conservation of Biological Diversity in the Orinoco Delta Biosphere Reserve and Lower Orinoco River Basin* project establishes an extensive and explicit plan to involve the private sector directly (notably the petroleum, palmito and tourism sectors). The large cofinancing in Venezuela reflects the project's ability to engage two of the largest investors in the region, Petroleos de Venezuela and the Corporacion Venezolana de Guayana, as well as the cooperation of the palmito industry.
- (c) The *Costa Rica: Ecomarkets* project provides an effective model for a variety of private sector interventions that will help finance conservation and sustainable use. The project implements a program that will develop markets for environmental services provided by forest ecosystems. Key stakeholders directly benefiting from the project are small and medium sized landowners; private sector water and electricity utilities will be paying for ecological services.
- (d) The *Thailand: Removal of Barriers to Biomass Power Generation and Cogeneration* project will partner with the private sector by establishing a core unit in an existing financial institution. This will ensure that projects are commercially viable and that an entity with a vested interest in replicating project experiences has the capacity to identify and develop additional projects without the need for GEF financing.
- (e) The *China: Second Beijing Environment* project will directly involve a municipally owned investment company to provide technical and financial intermediation. The project will also aggregate boiler buyers in cooperative procurement arrangements to foster demand-based market pull for more efficient technology.
- (f) The *Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas* project involves industry associations in Morocco (mountain tourism companies).

- (g) The *Guinea: Rural Energy* project very much builds on the lessons provided by earlier GEF rural RE projects, such as Zimbabwe and Argentina. In light of the experience gained, emphasis has shifted to private entrepreneurial activities. Increased initial transaction costs of RE investments have been identified as a key barrier for private sector driven rural RE market development. These barriers could be addressed by providing a declining interest buydown on mainstream loans in the initial years for RE market development. Innovative means will be explored during appraisal to promote RE market development, which would include blending GEF support with commercial financing.

## PUBLIC INVOLVEMENT

17. Stakeholder involvement is a key feature of GEF-financed projects. The modalities for participation and collaboration are consistent with the strategic partnerships defined in the *GEF Corporate Business Plan* (FY01-FY03). For example, regarding expansion of project executing agencies to include international funding agencies and non-governmental groups, in-country organizations, and the private sector.

- (a) The *Peru: Collaborative Management* biodiversity MSP will be fully executed by a local NGO, Fundacion Pro Sierra Nevada de Santa Marta, and build upon previous funding of community-based pilot activities from the governments of France and the Netherlands.
- (b) The *Brazil: Promoting Biodiversity Conservation and Sustainable Use* project was prepared entirely by a national NGO, Instituto Pro Natura.
- (c) The *Colombia: Conservation of the Biological Diversity in the Sierra Nevada de Santa Marta* project uses the 12 years of experience from the NGO Pro Sierra Nevada de Santa Marta to bring together local and regional government and community groups.

18. Overall, consultations were held in preparing projects, although the nature and extent of stakeholder feedback varied by project. There were extensive consultations at the village level, which were combined with socio-economic surveys (e.g., biodiversity projects in Bangladesh, Brazil, Morocco, Philippines, Venezuela, and Vietnam). Among climate change projects, India and Guinea documented fairly localized consultations, as these projects would potentially affect several villages and hundreds of households. Projects which were more technical in nature (e.g., climate change projects in Brazil, China, Hungary, Thailand; regional international waters) engaged in some consultations, primarily geared towards information sharing.

19. Ensuring the participation of disadvantaged populations, such as indigenous communities and women's groups, is a key concern in projects. Three projects affect, directly or indirectly, some indigenous communities (biodiversity projects in Costa Rica, Peru, and Venezuela). In the Venezuela project, the national indigenous organization, CONIVE, is actively involved in the project to represent the interests of about 21,000 Warao Amerindians. Similarly, in Peru, four major indigenous organizations, and several other local groups, have been consulted and identified as project co-executing partners. Women's groups are in charge of micro credit facilities (Bangladesh), or are targeted as landowner participants (Costa Rica). The India climate change project has a separate training and outreach program for women's groups who are managing the community forests supplying wood fuels.

20. There are good practice examples regarding multi-stakeholder project preparation, which translated into creative participatory project implementation mechanisms. The Bangladesh, Morocco, Philippines, Venezuela, and Vietnam biodiversity projects used the results of extensive social assessments (including participatory rural appraisals and needs surveys) to design innovative institutional arrangements for sustaining community participation. These include formation of decentralized units, such as village conservation committees (Bangladesh, Morocco, Philippines) and sharing accountability with users through signed commitments to conserve the resource (e.g., Charter for Conservation in Vietnam). In all these projects, local NGOs are contracted to do the community outreach and capacity strengthening components, some of which will be done in cooperation with international NGOs (e.g., WI and IUCN in Bangladesh).

21. Some biodiversity projects involve academic institutions, such as three national universities in Venezuela, and two research institutions from the U.K. and Netherlands in Brazil. Private sector representatives are included in the steering committees of the Guinea, India, Thailand, and Brazil climate change projects.

22. The Vietnam project, although an MSP, had undertaken a very thorough consultative process involving locals in the preparation of the project, with a special emphasis to include women in the process of environmental management and community development. The project also has provision for credit schemes for women based on their previous track record.

## COLLABORATION

### **Cofinancing**

23. Integration with Implementing Agency programs is indicated by cofinancing. IBRD/IDA provided almost \$205 million for the Colombia and Costa Rica biodiversity projects and for the China, Guinea, and Hungary climate change projects. UNDP contributed its own funds, totaling some \$17.1 million, to the Bangladesh, Morocco, and Philippines biodiversity projects. UNEP's contribution in the international waters project is \$0.09 million. Five bilateral agencies provided almost \$42.0 million in cofinancing for the Brazil, Morocco, Philippines, Colombia, and Vietnam biodiversity projects; the India, Thailand, Guinea, and Hungary climate change projects; and the international waters project.

24. The private sector was a major partner in GEF projects, co-financing from the private sector was \$407 million in this Work Program. Three projects, the World Bank climate change projects in China and Mexico and the UNDP Venezuela biodiversity projects represented 90% of this figure.

### **Leveraging**

25. The Work Program mobilizes significant resources from non-GEF and non-Implementing Agency sources, including government agencies, NGOs, bilateral donors, and the private sector. This reflects the added emphasis now placed by the Implementing Agencies on brokering financial and other capital for global environmental management. Such inputs help to spread project risk across several actors, leverage clear commitments from beneficiaries, strengthen the basis of project ownership, and improve the climate for replication. It is noteworthy, for

example, that UNDP has leveraged \$151.8 million in co-financing, representing a ratio of 1: 2.33 in GEF to non-GEF funding. This reflects UNDP's institutional commitments to generate new funding for GEF supported initiatives by (i) coordinating UN agency investments to ensure synergy with GEF investments; (ii) leveraging funding from bilateral and multilateral funds; (iii) leveraging cost-sharing from program countries and beneficiaries and (iv) negotiating investments in global environmental management from the private sectors.

26. An important trend in the work programs is the increasing amount of mobilized cofinancing from local groups, including provincial and municipal governments and local communities and NGOs. This is the strongest indication of coordination between the national and local levels, where the affected units at the most decentralized levels are contributing financially through cost sharing of project costs. An estimated \$6.5 million, and possibly more if in-kind contributions such as land are costed, enters the total project cost figures submitted for this work program. These include local community cost sharing, for example, in the Morocco and Philippines projects. In the NGO-executed Colombia biodiversity project, collaboration is not only institutional but also financial, where the local NGO has mobilized over \$1.9 million of funding for project cost sharing.

### **Coordination and Cooperation**

27. The *Regional: Capacity Building for the Adoption and Application of Energy Codes for Buildings* project will link previously supported GEF activities. The project will also establish joint project steering committees with local energy efficiency projects in Lebanon and the Palestinian Authority to ensure full participation and cooperation.

28. The *Thailand: Removal of Barriers to Biomass Power Generation and Co-Generation* project is the first GEF project to be designed and implemented in close collaboration with the newly established Japan Bank for International Cooperation (JBIC). GEF will facilitate access to mainstream JBIC finance by addressing perceived investment risks with innovative means of contingent financing. The pilot financing package will allow local guarantors to gain relevant experience and to build confidence in alternative energy technologies.

29. Cooperation with disadvantaged groups is a valuable contribution of projects in the work program especially as these groups represent the most vulnerable sub-sectors. Institutional mechanisms have been set up, for example, in the Colombia, Peru, and Venezuela projects to ensure representation of indigenous communities in the project. Additionally, collaboration with women's groups is assured, for example, in the Vietnam biodiversity project where the Women's Union administers the micro credit scheme supported by the project.

30. Several projects will be executed by non-governmental institutions that will work closely with national and local government units. Mechanisms for ensuring community participation are built into some of the projects' implementation structure. The participation of disadvantaged populations, such as indigenous groups and women, will be assured through targeted interventions. Renewable energy projects in rural areas incorporate some innovative delivery mechanisms to ensure widespread acceptance of new technologies.

31. This Work Program contains projects that exemplify various forms of collaboration among stakeholder groups. At the global level, the international waters project on persistent

toxic substances will make use of twelve regional committees composed of participating countries. An international NGO, World Wildlife Fund, will assist UNEP in carrying out regional cooperation and consultations. Throughout preparation of this project, UNEP consulted with other international agencies such as UNDP, the World Bank, and FAO.

#### LAND DEGRADATION

32. GEF has prepared for Council consideration an action plan to link activities in land degradation to the GEF focal areas of biodiversity, climate change, and international waters.<sup>3</sup> Some initial activities have been presented in this Work Program.

- (a) In the *Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas* project, land degradation will be reduced by rehabilitation and sustainable management of range land, including the redistribution of water points to minimize local overgrazing, introduction of user fees, and the introduction of rest and rotational grazing techniques.
- (b) Both the *Bangladesh: Coastal and Wetland Biodiversity Conservation* project and the *Philippines: Samar Island Biodiversity* project address land degradation as a crosscutting area.
- (c) Both the *Brazil: Mato Grosso* and *Colombia: Sierra de Santa Marta* projects also addresses land degradation, focused on the deforestation.

#### PROJECT CYCLE MANAGEMENT

33. The Secretariat reviews projects at four decision points in the GEF Project Cycle:

- (a) concepts submitted for Pipeline Entry are reviewed to ascertain that they are well developed and in accordance with GEF policies, programs, and criteria;
- (b) project proposals submitted for inclusion in the Work Program are reviewed to ascertain that they are well advanced in preparation and consistent with the approved concept;
- (c) projects submitted for CEO endorsement, prior to the Implementing Agency final approval, are reviewed for consistency with the proposal approved by Council; and
- (d) completed projects are reviewed for achievement of goals.

34. The Secretariat also tracks the progress of projects between these decision point, while they are being implemented. This has revealed a number of project cycle management issues:

- (a) some concepts for which preparation grants had been given have not matured into proposals, even after many years;
- (b) some proposals approved by Council have not received agency Implementing Approval until long after Council approval or have diverged from the proposal submitted to Council; and

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<sup>3</sup> *Defining the Linkages Between Land Degradation and GEF Focal Areas: An Action Strategy for Developing GEF Support.* GEF/C.14/4.

- (c) some projects, as shown by the annual Project Implementation Review, are not performing as expected.

These issues are described below.

### **Non-maturing Concepts**

35. Some early project concepts have not matured as proposals for Council consideration even after several years have elapsed since the project preparation grant had been made. The Secretariat will therefore identify in the pipeline document those concepts for which preparation had not commenced within six months of pipeline entry or for which preparation was not complete within three years, and will discuss them with the Implementing Agencies with a view to (i) reporting to Council on the reasons for any delay or termination and (ii) removing non-maturing concepts from the GEF Pipeline.

### **Degree of Project Preparation**

36. The Project Cycle expects that “the project proposals presented for Council approval will be well advanced in their preparation, which should reduce the time between Council approval of project proposals and final approval of project documents by the Implementing Agency. This aspect will be kept under review by the GEFOP.”

37. Submitting proposals when project preparation is not well advanced has already produced a number of untoward effects:

- (a) the time between Council approval and final Implementing Agency approval is lengthened, because fact-finding and preparation have to be completed as well as appraisal. Several projects approved earlier in the Pilot Phase or by Council have not been submitted for endorsement until many years later;
- (b) the final document diverges from the proposal agreed to by Council. In some cases the differences between the proposal submitted for endorsement and the proposal previously approved required substantial clarification before the CEO was able to endorse it;
- (c) standards for submission are no longer completely consistent among agencies; and
- (d) sites and activities are incompletely specified, making it difficult to coordinate with the activities of the other Implementing Agencies and other development actors working in the same general area.

38. GEFOP will therefore continue to monitor the situation, using the above indicators and the Secretariat will work with the Implementing Agencies to harmonize expectations on the standards of preparation and documentation required.

### **Non-performing Projects**

39. The Project Implementation Review has identified a number of projects that are not performing, and these will be discussed in the Project Implementation Review for 1999<sup>4</sup>. The

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<sup>4</sup> However, as the PIR identifies such problems only among those projects that have been effective for at least a year, a special analysis will also be undertaken to identify any that have not become effective.

Secretariat will work with the Implementing Agencies to determine whether such projects should be terminated and where it would be appropriate to re-commit the resources.



## PROJECT SUMMARIES

### BIODIVERSITY

#### **Bangladesh: Coastal and Wetland Biodiversity Management at Cox's Bazaar Hakaluki Haor (UNDP) GEF: \$6.20m; Total: \$13.28m**

The overall objective of the project is to demonstrate an innovative management of Ecologically Critical Areas (ECAs) in Bangladesh that will have a significant and positive impact on the long-term viability of the country's biodiversity resources. This will be executed at two main sites: the first site (Cox's Bazar) includes three ECAs within the country's long and biodiversity rich coastal zone and the second (Hakaluki Haor) is one of the largest and most important of the country's many inland freshwater wetlands.

*Expected project outputs after seven years of implementation:* (a) legal protection established for ECA both for sites and national level; (b) effective field-level management system operating and maintained; (c) Village Conservation Groups and Local ECA Committee established to ensure representation and inter-sectoral co-ordination for conservation; (d) ecological information collected and utilised; (e) management plan developed and implemented for ECAs; (f) alternative livelihood and sustainable use strategies developed and implemented; (g) appropriate policies to support integration of ECAs.

#### **Brazil: Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests of Northwestern Mato Grosso (UNDP) GEF: \$6.98m Total: \$16.11m**

The project focusses on a frontier region in Northwestern Matto Grosso, a Brazilian region of global biological significance. It will promote a matrix of land uses which when integrated at the landscape level, both conserve globally important biodiversity through sustainable management practices and safeguards. The project will ensure that land use planning and implementation are not guided solely by the economic potential of natural resources, but also by biodiversity conservation concerns that benefit the global community, demonstrating an intergrated approach to resource conservation/management at the municipal and state level. Underlying causes and threats include deforestation and forest fires, slash and burn agriculture in new colonization areas; land degradation, and inappropriate timber extraction. The project will focus on adapting ecological and economic planning from the state to the municipal level to help guide productive activity and environmental enforcement. In addition, it will develop and pilot agro-silvo-pastoral systems and non-timber forest products for the benefit of local communities. Protected areas in this project are seen as an integral part of the biodiversity overlay on land use planning and a balance between protection and biodiversity friendly sustainable use activities will be sought. It also lays particular emphasis on establishing an institutional structure that bring together private and public sector representatives with the responsibility to closely monitor progress and adapt, enforce and sustain project activities in line with an adaptive management approach. The project will collaborate with logging operations by funding biodiversity overlays demonstrating how logging operations can be more biodiversity-friendly by addressing barriers to implementation through demonstration activities. The proposed project conforms with existing interim principles on sustainable logging provided by the Secretariat.

*Expected project outputs after seven years of implementation:* (a) improved land use plans with a biodiversity overlay are designated and gazetted and related incentive frameworks are developed

to facilitate implementation; (b) pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agro-silvo-pastoral systems are established with active involvement of key stakeholders; (c) pilot sites demonstrating biodiversity overlays on permanent sustainable management of forest values are established with active participation of timber operators and other operators.

**Colombia: Conservation of the Biological Diversity in the Sierra Nevada de Santa Marta (World Bank) GEF: \$9.38m; Total: \$20.49m**

The project would assist the government of Colombia in addressing conservation and sustainable use objectives in the Sierra de Santa Marta, a site of global biodiversity significance in the Caribbean zone of the country. The focus is on knowledge generation and dissemination; stakeholder participation, organizational strengthening, and coordination; and collaborative management and pilot sustainable development projects. The local organization implementing this project is good and has substantive capacity to address key issues. The participatory approach followed by the local organization is substantive and based on years of experience. Challenges the project faces are complex and include; unstable social environment, weak institutions, and technical challenges to design socioeconomic activities that are sustainable.

*Expected project outputs after five years of implementation:* (a) participatory mechanisms for generating and disseminating knowledge about the ecoregion's biodiversity designed and operating; (b) network of communities, organizations, and institutions established and involved in concrete actions to conserve biodiversity; (c) specific actions underway to improve management of critical areas in ecoregion strategy, using collaborative approaches.

**Costa Rica: Ecomarkets (World Bank) GEF: \$8.33m; Total: \$60.23m**

The project will foster conservation and sustainable use of forest biodiversity in Costa Rica through conservation easements on privately owned lands outside protected areas in the Mesoamerican Biological Corridor. It will do so by developing markets and private sector providers for environmental services provided by forest ecosystems. The project would specifically support: (a) payment to landowners who generate environmental services, including provision of habitats for globally-significant biodiversity and (b) strengthening the technical system for monitoring, promotion, supervision, and evaluation of ESP program activities. The larger project will support the generation of renewable energy that would meet the rising demand for energy in Central America.

*Expected project outputs:* (a) environmental service payment program supported; and (b) Mesoamerican Biological Corridor, Costa Rica component, consolidated. As part of the larger project, (c) certified emissions reductions sold in international markets.

**Morocco: Transhumance for Biodiversity Conservation in the Southern High Atlas (UNDP) GEF: \$4.37m Total: \$10.44m**

The project is aimed at conserving globally significant biodiversity in the southern flank of the High Atlas through an adaptive management scheme that integrates pastoral range management with biodiversity conservation in a grazing-dependent ecosystem. The major underlying causes of the threat to this area include indiscriminate settlement, conversion of wetlands and pastures for crops, reduced mobility of livestock, and lack of awareness of biodiversity conservation.

These root causes would be addressed through the revival of biodiversity and common property management regimes, land use planning and innovative incentives for range land and wildlife conservation.

*Expected project outputs:* The project is expected to result in the removal of policy, institutional, economic, technical, and information barriers to effective management of the grazing-dependent ecosystem of the High Atlas.

**Philippines: Samar Island Biodiversity Project - Conservation and Sustainable Use of the Biodiversity of a Forested Protected Area (UNDP) GEF: \$6.11m Total: \$13.31m**

Samar island – the third largest island in the Philippine archipelago—contains some of the countries' largest extant, unfragmented tracts of lowland rainforest. Although these forests are widely recognized to be an important repository of biodiversity, civil disorder problems in Samar have, until recently, hampered conservation management. The Project would establish the Samar Island Natural Park (SINP), a new protected area zoned for multiple uses centering on protection, but providing for sustainable harvests of non-timber forest products, and institute a comprehensive range of ancillary conservation measures to insulate the Park from human pressures. Interventions will strengthen participatory planning, process-response monitoring, surveillance and enforcement functions, enhance the conservation management capacities of communities, impart conservation values to wider Samareño society, backstop advocacy operations, and abet development of conservation-compatible village livelihoods. Implementation will be phased to nurture conservation processes through to maturity. The GEF will share the cost of these interventions with other financiers.

*Expected project outputs after eight years of implementation:* (a) an adaptive management framework for conservation is established and operational; (b) conservation functions are actualized and infrastructure established and maintained; (c) a community-based conservation framework is tested and operational with strong community participation evidenced in all aspects of conservation and sustainable use management; (d) broad-based awareness of conservation values and threats are imparted to forest-edge communities and other key Samareño stakeholders; (e) conservation objectives are internalized in sectoral development planning, budgeting and activity delivery at the regional, provincial and municipal levels; (f) barriers to sustainable use of wild resources are removed through demonstration activities; and (g) mechanisms to finance the recurrent costs of conservation activities are in place.

**Venezuela: Conservation of Biological Diversity of the Orinoco Delta Biosphere Reserve and Lower Orinoco River Basin (UNDP) GEF: \$9.79m Total: \$33.07m**

Conservation management would be operationalized within the Orinoco Delta Biosphere Reserve in accordance with Biosphere Reserve management principles. Local communities would participate in the management of the Reserve. Attitude of the Warao communities towards the Reserve would have been transformed, with recognition that conservation favors their interest and cultural values. Ecotourism concessions would be generating new sources of revenue for biodiversity conservation. The wild bird trade and palmito harvest industries would be more tightly regulated, with better enforcement. Local Warao communities would have greater capacity to plan and execute management programs to ensure the sustainability of their traditional lifestyles and would be accessing scientific expertise. Open access problems would

have been addressed by clarifying use rights. Systemic capacities to integrate conservation and development objectives in the Lower Orinoco Basin would have been developed. This would be evidenced by a better understanding of the ecological dynamics of the Delta and of the prerequisite of management needed to protect biodiversity and application of that knowledge in environmental management programs. Collectively, the aforementioned outcome would be reflected in the maintenance of the Delta's global conservation values, authenticated by an assessment of the status of threatened species.

**Vietnam: Hon Mun Marine Protected Area Pilot Project - MSP, (World Bank) GEF: \$0.97m; Total: \$2.17m**

This project will assist Vietnam to implement priority programs under its Biodiversity Action Plan (BAP). The plan identifies the development of a national system of marine protected areas and the conservation of the Hon Mun as priority actions for biodiversity conservation. The project will build the capacity of the Ministry of Fisheries and other agencies to implement their responsibilities for marine environmental management. It will develop a model for cross-sectoral management of marine biological resources that has wider application as Vietnam develops its system. The project has the full commitment of national and provincial government as well local communities. It will provide local stakeholders with a strong role in the managing the marine resources on which their livelihoods depend. The goal of this project is to conserve a representative example of internationally significant and threatened marine biodiversity. The project will focus on the enabling local island communities improve their livelihoods in partnership with other stakeholders and protect and sustainably manage the marine biodiversity at Hon Mun.

*Expected project outputs after four years of implementation:* (a) Khanh Hoa Marine Protected Authority established and fully installed and management plan adopted; (b) pilot alternative income generating activities underway and supportive of the sustainable financing scheme; c) training courses conducted, and environmental program been implemented and evaluated; and (d) marine biodiversity assessment completed and reviewed.

**CLIMATE CHANGE**

**Regional (Lebanon, Palestinian Authority): Capacity Building for the Adoption and Application of Energy Codes for Buildings, MSP (UNDP) GEF: \$0.99m; Total: \$1.25m**

This regional capacity building project will include the complementary efforts in Lebanon and the Palestinian Territories. The project will allow the Lebanese Government to adopt the formulated Lebanese “Thermal comfort building guidelines”, feasibility studies, the Palestinian Authority to formulate energy codes for buildings and benefit from the Lebanese and regional experiences. The project will remove barriers for the formulation, adoption, dissemination and application of thermal energy codes. It will also remove barriers for the transfer of knowledge and experience among the participating authorities and other countries in the region. With the projected investment in the construction sector over the period 2000-2020 estimated at \$40 billion for Lebanon and \$15 billion for the Palestinian Authority, the project is seen as a foundation for the creation of regional momentum targeting the reduction of CO2 emissions in buildings. For the period 2000-2020, it is estimated to achieve overall incremental greenhouse gas abatement of more than 1.2 million tC, at a unit cost of \$0.79/tC.

*Expected project outputs after two years of implementation:* (a) a set of completed energy codes and guidelines for buildings; (b) developed human and resource capacity to develop energy codes for building and design and execute energy efficient buildings; (c) information dissemination tools and increased public and policy-makers' awareness of cost-effective energy-efficient building material, methods and designs, as well as benefits of energy efficient measures in buildings; (d) developed institutional bodies to promote and adopt energy codes in buildings and increased support at the formal and informal level; (e) an effective verification and certification mechanism (specific to Lebanon); (f) an action plan for the facilitation of future adoption of an act on energy code for buildings (specific to the Palestinian Authority); and (g) regional cooperation and coordination in the field of energy efficiency in buildings.

**Brazil: Hydrogen Fuel Cell Buses for Urban Transport (UNDP) GEF: \$12.6m; Total: \$21.77m**

This project is Phase II of a four phased approach to commercialize fuel cell buses in Brazil. It will conduct an operational test of 10 FCBs (3 bought in the first year, 7 in the second year) in the Sao Paulo area. The project will provide the experience as a prelude to further FCB projects in Brazil with GEF support.

*Expected project outputs:* (a) Ten FCBs will be operated over one million bus-kms; (b) Brazilian staff will be trained to operate and maintain FCBs; (c) Brazil will acquire experience and knowledge on the operation of FCBs; (d) a proposal for Phase III project will be prepared; and (v) public awareness and understanding of the role of FCBs will be enhanced.

**China: Second Beijing Environment Project (World Bank) GEF: \$25.0m; Total: \$437.00m**

The objectives of the proposed project are to: (a) improve the quality of life for the citizens of Beijing by alleviating the city's acute air and water pollution problems; and (b) significantly reduce China's GHG emissions. The project has three components: energy conversion and efficiency; wastewater treatment; and environment capacity building. GEF assistance will remove barriers to implementation of the project's two major energy components. One component would directly lead to the conversion of at least 2,500 small space-heating boilers from coal to natural gas, small boilers being the largest cause of ambient air pollution. Also, by transforming the market for gas boilers and creating conversion capacity, at least another 2,500 boiler conversions would indirectly be facilitated. The second component will improve the energy efficiency of the city's extensive district heating systems. Together, these two components are estimated to reduce greenhouse gas emissions by about 27 million tC over 20 years, at a unit abatement cost to the GEF of \$0.93/tCe. Other project components, totaling an additional \$488 million, for which no GEF support is requested, are: demonstration of flue gas desulfurization at the Shijingshan Power Plant; sewage collection and treatment in the Liangshui River basin; and strengthening of Beijing municipality's environmental management policies and institutions.

*Expected project outputs after six years of implementation:* (a) conversion of coal burners for use of natural gas; (b) efficient gas boiler market; (c) energy conservation for heating systems and remaining coal boilers; (d) power plant flue gas desulfurization; (e) sewage collection and treatment; and (f) improved environmental information and policy know-how.

**Guinea: Rural Energy (World Bank) GEF: \$2.0m; Total: \$10.0m**

The key development objective of this Learning and Innovation Loan is to support the Government in implementing its strategy for increasing access to electricity in rural and peri-urban and in promoting the adoption of Renewable Energy Technologies (RET). The project's global environment objectives are to: (a) remove barriers to application, implementation and dissemination of RET; and (b) reduce greenhouse gas (GHC) emissions through the substitution of RET for candles, kerosene for lighting and other applications. Removal of barriers will make it attractive for the private sector to start investing in decentralized rural electrification schemes, and operate these on a fully commercial basis. Specifically, the Project would (a) buy down the relatively high investment costs of RET; (b) raise public awareness of the advantages of using RETs, and (c) reduce initial high transaction costs that result from lack of market knowledge, small market size, and dispersed consumer base. It is expected that by completion, the Project would have demonstrated RET to be viable business opportunity in rural Guinea.

**Hungary: Szombathely CHP/Biomass Project (World Bank) GEF: \$2.5m; Total: \$28.0m**

The main purpose of this project is to decrease emissions of greenhouse gases in ways that supply economically competitive heat to a major portion of Szombathely and competitively priced electricity to the grid. Additional project objectives are to strengthen rural employment and incomes through increased beneficial usage of wood; and to demonstrate the technical feasibility of wood-firing for district heating (7.5MW) coupled with electric production using gas motors (20MW electric and 24MW thermal). The global environmental objective is to reduce CO<sub>2</sub> emissions in order to help Hungary meet its international obligations under UNFCCC. It is expected that, over a 20-year period, the project will reduce CO<sub>2</sub> emissions by 0.925 million tons.

*Expected project output:* (a) Carbon emission reduction of 0.925 million tons CO<sub>2</sub> over 20 years; (b) model to facilitate replication of other independent power arrangements in Hungary.

**India: Biomass Energy for Rural India (UNDP) GEF: \$4.21m; Total: \$8.82m**

This project aims at developing and implementing a bioenergy technology package to reduce GHG emissions and to promote a sustainable and participatory approach to meeting rural energy needs. The project will be implemented mainly in two panchayats (a cluster of about 24 villages), of Tumkur district in Karnataka. The project goals will be achieved through (i). Demonstrating the technical feasibility and financial viability of bioenergy technologies on a significant scale, (ii). Building capacity and developing appropriate mechanisms for implementation, management and monitoring of the project; (iii). Developing financial, institutional and market strategies to overcome the identified barriers for large-scale replication of the bioenergy package for decentralized applications; and (iv). Disseminating the bioenergy technology and information package on a large scale.

*Expected project outputs:* (a) 1.2 MW (60 units of 20 kW capacity) woody biomass gasifier based system with a generating potential of 4800 MWh of bioelectricity annually, mainly for irrigation; these systems will not be operated year round, for example, during rainy season; (b) 120 kW (3-10 kW each) community biogas cum bio-fertilizer systems generating 346 MWh for base loads for lighting and drinking water throughout the year; these activities have fixed load

and the services are required year-round; (c) 45 community biogas cum bio-fertilizer systems in 24 village settlements with a total capacity of 4000m<sup>3</sup>/day (range 25 to 100m<sup>3</sup>/day) for cooking gas and bio-fertilizer production; the land ownership and current land use will determine the tree species or type of afforestation to be carried out; (d) establish 452 ha of short rotation forest plantations; 371 ha of agro-forestry systems; 271 ha of community forestry; 471 ha of orchards; and 113 ha of high input forestry; and (e) lessons in different modes of providing the rural energy service package to rural villages, including experience in gaining full cost recovery.

**India: Enabling Activity for the Preparation of India's Initial Communication to the UNFCCC (UNDP) GEF: \$2.0m; Total: \$2.11m**

This project would help India prepare the first communication to the United Nations Framework Convention on Climate Change.

**Mexico: Hybrid Solar Thermal Power Plant (World Bank) GEF \$49.35m; Total: \$178.00m**

The project will introduce a solar thermal component of about 30 MW combine cycle gas turbine (CCGT) and will include associated training, capacity building and monitoring activities. A GEF grant of about US\$50 million to cover incremental costs is expected to equalize the cost of electricity generation from the hybrid compared to the pure CCGT. The baseline investment costs for the hybrid will be borne by an International Power Producer (IPP). This Mexico project is one of four similar projects in the world to be supported by GEF as part of a program to accelerate cost reduction and commercial adoption of larger-scale non-carbon emitting generation technologies. The main global benefits of the project are: (a) the demonstration of operational viability of hybrid solar thermal power generation in Mexico, (b) contribution to accelerated market penetration of large-scale backstop power generation technologies; and (c) reduction of greenhouse gas emissions from power generation. The carbon savings of the project are estimated at 206,000 tC over the 25-year lifetime of the plant.

**Thailand: Removal of Barriers to Biomass Power Generation and Co-generation (WB) GEF: \$6.83m; Total: \$73.22m**

This project aims to reduce GHG emissions by accelerating the growth of biomass co-generation and power generation technologies to replace current fossil fuel consumption in Thailand. The objective of the project is to (a) build capacity to provide information and services to potential biomass power project investors; (b) improve the regulatory framework to provide financial incentives to biomass co-generation and power projects; (c) create easy access to commercial financing for biomass co-generation and power projects; and (d) facilitate the implementation of two initial biomass power pilot plants through support for commercial guarantees which will reduce technical risks associated with the deployment of this new technology in Thailand.

*Expected project outputs:* The two biomass power pilot plants – a 22 MW wood residues power plant in Yala and a 10 MW rice husk power plant in Roi-Et -- would lead to a reduction of 62,000 tons of carbon per year by replacing new coal-fired power plants. Given the total potential of biomass power capacity of 3 GW in Thailand, using biomass power to replace fossil fuels could potentially reduce GHG emissions by 4.2 million tons of carbon per year.

## INTERNATIONAL WATERS

### **Global: Regionally-based Assessment of Persistent Toxic Substances (UNEP) GEF: \$3.00m; Total: \$4.99 m**

The objective of this project is to deliver a comprehensive regionally based assessment of the threats posed by persistent toxic substances to the environment and human health in relation to the distances over which they are transported. The project is a step towards the detailed specification of the priorities and options for management interventions, addressing both direct and indirect sources of Potentially Toxic Substances (PTS) found in the aquatic environment. The analysis will take into account environmental, economic and social factors in order to identify options offering the best return on investment. The results will provide GEF and the international community with a rationale for assigning regionally based priorities among persistent chemical contaminants, beyond the 12 substances already globally recognized.

*Expected project outputs:* (a) Identification of the major sources of PTS at the regional level; (b) impact on the environment and human health; (c) assessment of transboundary transport; (d) assessment of the root causes, related problems, and regional capacity; (e) identification of regional priorities; (f) identification of priority environmental issues at the global level.

## OZONE DEPLETION

### **Tajikistan: Programme for Phasing Out Ozone Depleting Substances (UNDP/UNEP) GEF: \$0.99m; Total: \$1.01m**

The project would assist the Republic of Tajikistan to comply with the Montreal Protocol by phasing out of the consumption of Ozone Depleting Substances by the various users.

*Expected project outputs:* (a) Retrofitting the existing production lines and conversion of the charging equipment from the use of CFC-12 to HFC-134a; (b) equipment, technology transfer, technical assistance, re-design, testing, pre-production trials and training. Refrigerant recovery and recycling – demonstration of equipment; (c) training of trainers for use of ODS-free refrigerants in maintenance and service; (d) implementation of ODS phase-out program.