



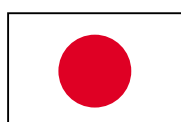
# **INNOVATIVE FINANCING TO IMPLEMENT MULTILATERAL ENVIRONMENTAL AGREEMENTS:**



## **THE CASE OF THE MONTREAL PROTOCOL**



**Proceedings of the Technical Workshop  
on Concessional Lending  
22 July 2002, L' Esterel, Canada**

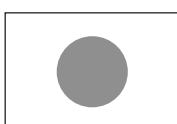


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UNEP 2002

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UNITED NATIONS PUBLICATION

ISBN: 92-807-2257-3

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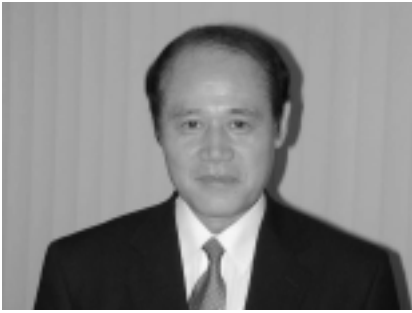
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## FOREWORD: Vice-Chairman of the Executive Committee



Since 1 July 1999, the world community has entered a critical stage in the implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer, particularly as regards Article 5 countries. As these countries move toward the compliance targets for CFCs, halons and methyl bromide, they have to assist increasingly diverse groups including small and medium-sized enterprises (SMEs), end-users, farmers, and agricultural cooperatives. In order to meet the diversified financial needs of Article 5 countries, the financial mechanism of the Montreal Protocol should be able to provide various flexible financial modalities. While by far the most important component of the financial mechanism, the Multilateral Fund should be complemented by other means of multilateral, regional, and bilateral co-operation as envisaged under Article 10, paragraph 2 of the Protocol. In the new compliance period, the Multilateral Fund faces a number of challenges in funding crucial phase-out projects.

In accordance with the London Amendment adopted in 1990, the Montreal Protocol provides that “the Multilateral Fund shall meet, on a grant basis or concessional basis as appropriate, and according to criteria to be decided upon by the Parities, the agreed incremental costs” (Article 10 para.3 (a)). Since that decision, the Executive Committee of the Multilateral Fund has explored various approaches to adequately address and define a framework for concessional lending, which includes the approval of a few pilot and/or demonstration projects with concessional loan or innovative financing schemes implemented by the World Bank as well as principles to be incorporated into the framework. It would be relevant to note that the Secretariat of the Fund prepared such a proposed framework that the Executive Committee took note as a useful basis for further discussion on this issue.

In an attempt to expedite further discussion on this critical issue, the Government of Japan made a number of proposals for promoting substantive and technical exchange of views among the Member Governments of the Executive Committee.

In December 2001, based upon the proposals of the Government of Japan, the Executive Committee approved at its 35th Meeting to convene a technical workshop whose objectives were to promote exchange of views on the objectives and modalities of concessional lending including pros and cons to Article 5 countries among the Member Governments of the Executive Committee and to deepen the understanding of operations of any practical and workable concessional lending schemes under the United Nations system. It would also cover the review of relevant experiences of the Fund and the Implementing Agencies as well as Article 5 countries in Innovative Financing in this field. The Executive Committee also decided that the Government of Japan would convene the technical workshop, as a project to be implemented with the assistance of the Implementing Agencies.

In the view of the Government of Japan, the objectives of the technical workshop had been successfully achieved. In this respect, on behalf of the Government of Japan, I express deep appreciation (of my Government) to UNEP DTIE for the latter’s assistance in organizing the workshop. Our gratitude extends to the Secretariat of the Multilateral Fund that provided substantive and logistical support for the workshop. I also thank the World Bank, UNDP and UNIDO as well as the representatives of the Grameen Bank of Bangladesh, FIDE (Fideicomiso para el ahorro de Energia electrica) of Mexico, the Industrial Financial Corporation of Thailand, and TTGV (Technology Development Foundation) of Turkey and the distinguished participants and experts who graciously accepted the task of preparing their technical contributions on the substantive issues of the workshop.

Tadanori Inomata  
Ambassador of Japan  
Vice-Chairman of the Executive Committee  
San Jose, Costa Rica, September 12, 2002

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## FOREWORD: Head of the UNEP DTIE Energy & OzonAction Branch



UNEP is proud to have assisted the Government of Japan with the organisation of this Technical Workshop on Concessional Lending, both in our capacity as an Implementing Agency of the Multilateral Fund responsible for providing the clearinghouse function, and as an agency that strives to identify new approaches to meet the implementation challenges faced by developing countries under the Montreal Protocol. Our role in this workshop is also consistent with UNEP's traditional strengths in facilitating dialogues between stakeholders with divergent views, creating a climate conducive to innovative thinking, and promoting information exchange to support environmental objectives.

UNEP's OzonAction Programme prides itself on being a source of new ideas in the ozone protection field. Similarly, UNEP is no stranger to innovative financing: the UNEP Division of Technology, Industry and Economics has a rich experience in financing for the environment in other issue areas. For example, our Finance Initiative involving over 275 financial institutions including commercial banks, investment banks, insurance and re-insurance companies, fund managers, multilateral development banks, venture capital funds to develop and promote the linkages between the environment and financial performance. Our Division has pioneered major programmes on financing cleaner production and sustainable energy, and have played a leading role in the establishment of a voluntary Statement of Environmental Commitment for the Insurance Industry. We therefore take a keen interest in the consideration of innovative financial approaches applied to environmental protection.

Our sincere gratitude extends to all of the presenters and participants whose contribution of papers, comments and ideas made this workshop possible. We would especially like to thank UNDP, UNIDO, the World Bank, and the Multilateral Fund Secretariat for their substantial contributions to the design and content of this event.

UNEP hopes that these proceedings contribute technical background needed by those involved in the continuing dialogue on concessional lending and innovative financing under the Montreal Protocol.

Rajendra M. Shende  
Head, UNEP DTIE Energy & OzonAction Branch

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## ACKNOWLEDGMENTS

This publication was supported by the Government of Japan as part of its bilateral programme under the Multilateral Fund for Implementation of the Montreal Protocol. This document was produced by UNEP Division of Technology, Industry and Economics (UNEP DTIE) OzonAction Programme.

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- H.E. Mr. Tadanori Inomata, *Embassy of Japan in Costa Rica*
- Mr. S.S. Lang, *Multilateral Fund Secretariat*
- Mr. Steve Gorman, *World Bank*
- Mr. Anat Prapasawad, *Industrial Finance Corporation of Thailand*
- Mr. José Urteaga, *Fideicomiso para el Ahorro de Energia Electrica*
- Mr. Senol Ataman, *Technology Development Foundation of Turkey*
- Mr. Victor Yameogo, *Ministry of Environment and Water, Burkina Faso*
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Graphic design by:

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The preparation of this document has involved contributions from a wide range of organizations and individuals. It could not have been prepared without their input. UNEP and the Government of Japan wish to thank all contributors and their employers for helping to make this document possible.

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## WORKSHOP REPORT

### INTRODUCTION

1. To encourage the sharing of information about concessional lending, the Executive Committee at its 35th meeting approved a *Technical Workshop on Concessional Lending* as a bilateral project for the Government of Japan GLO/SEV/35/TRA/233). UNEP DTIE assisted the Government of Japan with the organisation of the workshop, which was held on 22 July 2002 in L'Estérel, Québec, Canada. The workshop was designed and conducted in co-operation with the Multilateral Fund Secretariat and the other Implementing Agencies (UNDP, UNIDO, World Bank).
2. Delegates from 18 developing countries, 10 developed countries and one country with an economy in transition, as well as representatives of the 4 Implementing Agencies (UNDP, UNEP, UNIDO, World Bank), UNDP GEF the Grameen Bank (Bangladesh) and the Ozone Secretariat, participated in the workshop.
3. The workshop focused on identifying and examining *practical* examples of where concessional lending/innovative financing has worked both inside and outside of the Multilateral Fund, and looked at applicable financial mechanisms to satisfy the diversified financial needs of Article 5 countries in achieving ODS phase out targets. However, it did not address the political acceptability of concessional lending within the Montreal Protocol framework.
4. Participants from Implementing Agencies and Article 5 countries presented and discussed 10 case studies on Innovative Financing and Concessional Lending, including cases of ODS phase out and also the financing of sustainable development projects outside the UN system, and other than ODS phase out.
5. The workshop discussions focused on the remaining areas under the Multilateral Fund, i.e. SMEs, large projects in "residual" sectors that have not yet been fully addressed (e.g. end user sector), and sectors that are only eligible for partial funding (e.g. aerosols, solvents). Further, it included projects that, though eligible, did not come forward due to eligibility and financial reasons such as a lack of counterpart funding or the nullification of incremental costs due to operational savings.
6. The objectives of the workshop were to:
  - Promote the exchange of views on the objectives and modalities of concessional lending, including pros and cons, among Article 5 countries members of the Executive Committee;\*
  - Deepen the understanding of operations of any practical and workable concessional lending schemes available within the United Nations system;\*
  - Review relevant experience of the Fund and the Implementing Agencies, as well as Article 5 countries, in innovative financing in this field;\*
  - Financing issues under the Multilateral Fund; and
  - Practical examples of what types of concessional lending/innovative financing could be considered for Article 5 countries under the Multilateral Fund.

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\* Explicitly required as per Decision 35/61.

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## OPENING REMARKS

7. H.E. Tadanori Inomata, Ambassador of Japan to Costa Rica and Vice Chairman of the Executive Committee, welcomed the participants. In his opening remarks (see Annex I), he emphasised the importance of identifying and examining practical examples of viable concessional and innovative financing both inside and outside of the Multilateral Fund. He stressed the need to promote active exchange of views on the objectives and modalities of concessional lending including pros and cons to Article 5 countries among the Member Governments of the Executive Committee as called for in Decision 35/61 of December 2001.
  8. H.E. Tadanori Inomata also emphasised that since the beginning of the compliance period for Article 5 countries on 1 July 1999, countries have to target increasingly diverse groups such as SMEs, end-users and farmers. In order to meet diversified financial needs of Article 5 countries, the financial mechanism of the Montreal Protocol, including the Multilateral Fund, should be able to provide a variety of flexible financial modalities to help respond to those needs.
  9. He outlined the financing challenges ahead, including for example, that the Fund is expected to finance projects with lower cost effectiveness from now on and often expected to fund projects to which the precise criteria for determining eligible incremental costs are hardly applicable. Yet, as we move forward for 100% phase-out in the remaining sectors in developing countries, such a situation will be more evident where there exists a pressing need for phasing out ODS to comply with the control schedules. There is an urgent need for funding relevant projects but having low cost effectiveness or having net incremental savings. Obviously, such projects are not technically eligible for funding by the Multilateral Fund. This may call for a review of the concept of “agreed incremental cost”, which originally meant additional expenses that Article 5 countries are supposed to bear in implementing the control measures.
  10. Mr. S. S. Lang, Deputy Chief Officer of Multilateral Fund Secretariat, provided the brief background on the Decisions of the Executive Committee related to the issue of concessional lending. He also outlined the expectation of the Executive Committee in the form of outputs of the workshop as contained in the Decision 35/61 of December 2001.
  11. Mr. R. M. Shende, Head of Energy and OzonAction Branch, UNEP DTIE, explained the objectives of the workshop. In his opening remarks (see Annex I), he explained the appropriate mix of experts who have contributed to the case studies that would be presented in the workshop. He emphasised UNEP’s global mandate of facilitating dialogue by providing the platform to exchange lessons and experiences. In this context he informed the participants about UNEP-World Bank joint initiative “Financing for Sustainable Development” intended to transform the plans for sustainable development into realities through innovative financing.
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## CONTENTS

12. The workshop was structured around two main sessions (Workshop Agenda in Annex II).
13. The first session included case studies and discussion related to the projects based on innovative financing to phase out ODS. This session provided the inputs which was of direct relevance to the implementation of the Montreal Protocol in developing countries. The second session was built around case studies related to innovative financing of the sustainable development projects outside the Montreal Protocol regime. Following the two sessions, there was a round table discussion moderated by H.E. Tadanori Inomata.
14. Session 1, chaired by H.E. Mr. Tadanori Inomata, included presentations and discussions on the following case studies:

- Innovative Financing for ODS Phase-out (Montreal Protocol Unit, World Bank).

**Description:** The World Bank described the challenges under the Multilateral Fund (MF), and the ways to fill in the gap between MF financial resources and increasing global, national and private sector demand. It focused on the importance of leveraging the financing. The obstacles such as lack of concrete project experiences, lack of concrete national regulations to support CFC phase out in many developing countries, and the possibilities of additional foreign debt burden, were stressed. After detailed explanation on the case studies of Chile and India, the specific roles of the Bank in innovative financing were described.

**Main points:** (a) Financial mechanism should be adaptable in customizing financial approach to country and sector needs. (b) ODS phase out has accelerated by ensuring cost-effectiveness. (c) Flexible design and simple implementation process enhances the successful implementation of the project.

**Discussion points:** (a) It is important to make the distinction between innovative financing and concessional lending. (b) There are shortfalls and difficulties for small companies in developing countries to receive funds. (c) Large companies were the main target group for MF assistance. Small and Medium-sized Enterprises should receive greater assistance. (d) Uniform interest-rates should not be applied. They should be driven by the financial conditions in the individual country.

- Thailand's Experience from Chiller Replacement (Industrial Finance Corporation of Thailand).

**Description:** The Royal Government of Thailand had received a total amount of approximately US\$ 5 million in the form of loan from the Multilateral Fund (MF) and Global Environment Facility (GEF). The objectives of the project are to assist Thailand to (1) improve energy efficiency and reduce greenhouse gas emissions in the chiller sector, and (2) reduce consumption of ODS in the same sector. The Industrial Finance Corporation of Thailand (IFCT) was appointed by the Government to be an executing agency, and the Ministry of Industry and Ministry of Science was appointed as the main focal point. To date, 11 chiller conversions are underway. Five chillers are technically approved and are in the process of financial appraisal. Twenty more prospective chillers are in the process of initial study, that is, measuring power consumption etc. in order to proceed with conversion.

**Main points:** (a) Program design should be feasible, simple and easy to implement. (b) Provision of technical assistance funding is necessary for successful implementation of the project.

**Discussion Points:** (a) The acceptability of the chosen financial mechanism depends on the economic situation of the country. (b) It is important to provide right incentives for the private sector.

- Mexico's Chiller Project (Fideicomiso para el Ahorro de Energia Electrica: FIDE).

**Description:** FIDE was established in 1990 as part of the strategy to assure a sufficient and timely supply of electric energy. FIDE's programs and projects range from financing the sale of compact fluorescent lamps in the residential sector, to the promotion and commercialization of high

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efficiency equipment such as motors, air compressors and lineal T-8 fluorescent lamps. The objective of the program under the MF was to demonstrate that chiller substitution is profitable based on the savings of electric energy obtained. The objective was to replace 10 chillers in Mexico, with an average capacity of 400 kg of CFCs each. The close collaboration between the World Bank specialists, USAID, manufacturers and FIDE allowed a successful implementation mechanism to develop.

**Main points:** (a) A simple evaluation scheme promotes alliances between energy saving consultants and manufacturers. (b) Provide financing with a constant interest rate depending on financial expectation is vital. (c) Involving manufacturers in financing projects is vital to successful implementation of the project. (d) Targeted financing should extend to corporate groups, industries, commercial chains and hotels.

**Discussion points:** (a) The importance of promoting commercial financing in cooperation with manufactures was emphasised. (b) The issue of pay-back duration was raised. (c) The need to utilise already existing institutional structures within the country.

- Turkey's Experience in Revolving Fund Mechanism (Technology Development Foundation of Turkey: TTGV).

**Description:** TTGV was established on 1 June 1991 as a non-profit organization to raise the industrial sector's awareness of research and development and to support the technology development projects of Turkish industry through funds provided by the Undersecretariat of Treasury with the resources of the World Bank. To date, approximately 35% of the amount has been allocated as credit and of the 95% of the loans have been paid back. The rest will be paid by 2003. To continue phase-out activities for the elimination of HCFCs and other ODSs, a revolving fund was established by giving partial loans and partial credits to the enterprises.

**Main points:** (a) Detailed evaluation by external technical experts was a key factor for the successful implementation of the project. (b) Legislative support of the government is beneficial. (c) NGO-type local executing agencies could provide quick response to the needs of industry.

Discussion points: (a) The lack of qualified capacity in the country to implement projects can be a problem. (b) The importance of providing management skills together with the loans. (c) Directly assisting loan recipients via e-mail or phone to provide guidelines on project implementation was a success feature.

- Concessional Loan Program for Earlier Retirement of CFC-based Domestic Refrigerators with Poor Energy Efficiency in the Autonomous Palestinian Territories (Agence Française de Développement).

**Description:** The French GEF (FGEF) has established a concessional loan program for improving energy efficiency in the domestic refrigeration sector in the Autonomous Palestinian Territories. The project was based on technical and financial assistance which aimed at: (1) Improving existing regulations to encourage energy efficiency, (2) assisting in setting up a Palestinian Department in charge of energy standardisation in refrigeration sector, and (3) promoting better practices in the refrigeration servicing sector.

**Main points:** (a) Awareness about alternatives to improve energy efficiency is a necessary precursor to implementation. (b) High electricity prices and consumers located in remote area make projects related to energy efficiency attractive. (c) As incremental cost born by the FGEF grant, more sustainable financing need to be explored.

**Discussion points:** (a) Providing the grants to distributors or country banks (not to end-users) was a key feature of the project. (b) The importance of including appropriate policy measures (e.g. stakeholders to avoid future use of CFC refrigerants) with the loan programme.

15. Session 2, chaired by Mr. Rajendra Shende, presentations and discussions on following case studies:

- Extending the Frontiers of Microfinance: Grameen Bank Experiences with Microcredit (Grameen Bank).

**Description:** Grameen Bank was established as a full-fledged bank under a special law passed by Bangladesh's Parliament in 1983. Since its creation, it has developed a unique banking system to provide credit to the "poorest of the poor" in the villages of Bangladesh to help them out of poverty. Up to April 2002, the Bank has disbursed more than US\$ 3.61 billion as loans on a cumulative basis, of which US\$ 3.29 billion dollars has been repaid. Grameen Bank's experiences reinforce the fundamental hypothesis that by harnessing the enterprise of the poor, it is possible to find a cost effective solution to poverty.

**Main points:** (a) Investment proposals under the Grameen Bank are appraised by taking into consideration the market criteria. (b) New financial management systems are required to attract large amounts of private funds to meet the very small investment needs of micro-enterprises. (c) Raising productivity through the application of new technologies is important. (d) Although all government policies need reappraisal, governments have a significant role to play in supporting the development of micro-enterprises such as providing guarantees to the micro-lending programmes and encouraging linkages between the formal financial institutions and NGOs.

**Discussion points:** (a) Microfinance is a cost-effective approach in Bangladesh, and it could be an efficient mechanism to be introduced where a banking systems do not work, e.g. in rural areas. (b) It is important to introduce "enterprise designing" which satisfies both development objectives and business objectives.

- Innovative Financing and Structuring of Environmental Projects: Some Nordic Experiences (Swedish EPA).

**Description:** The Nordic Environmental Finance Corporation (NEFCO) was established in October 1995 after a trial period. Its objectives are to complement and supplement other financing organisation for the realization of environment projects in central and east European countries. Funds are provided as grants for the procurement of goods or services (cash subsidies) and to reduce the borrower's debt services costs. A specific case study was made on NEFCO's Cleaner Production (CP) facility. Overall investments have yielded a relatively quick and high leverage for enterprises. NEFCO's operation has so far been restricted to Russia and some East/Central European countries. Possibilities of cooperating with other organisations are being considered.

**Main points:** (a) The regulatory framework should facilitate the investments. (b) Technical assistance and financial training should be provided together with financial assistance.

**Discussion points:** (a) Issues of expanding the assistance to other regions and other environmental problems were raised.

- UNDP/GEF Experience with Innovative Financial Mechanisms for Environmental Projects (UNDP GEF).

**Description:** UNDP has built up its experience with innovative financing mechanisms, including concessional lending, through the UNDP Global Environment Facility (GEF) programme. UNDP/GEF's experience focuses mainly on climate change projects, which concentrate on two key mechanisms: (1) funds established as part of UNDP projects (e.g., revolving funds), and (2) risk mitigation mechanisms (e.g. partial guarantee facilities, contingent loans). Such funds and mechanisms are not managed directly within UNDP. The usual modality is for these types of non-grant mechanisms to be set-up through local governmental and non-governmental bodies. UNDP's network of Country Offices have facilitated the execution of the UNDP/GEF climate change projects, as they have been involved in the day-to-day management of the projects, and have assisted with setting up non-grant mechanisms that are appropriate to the developing countries contexts.

**Main points:** (a) The quality and sustainability of the local counterpart involved in project implementation is key to a successful implementation of the project. (b) A minimum level of profitability required for successful project investment. (c) The project should make use of pre-existing capacity of institutions and groups. (d) To encourage market transformation, fund should be provided with appropriate technical assistance to ensure the sustainability of the project objectives.

**Discussion points:** The importance of using existing funds and institutions. (b) The appropriateness of applying innovative financing elements into all projects were raised.

- UNIDO's Experience on Concessional Lending within the Regional Africa Leather Development Scheme (UNIDO).

**Description:** UNIDOs' technical assistance targeted at the private sector was for a large-scale leather and leather products development in Eastern and Southern Africa. The Revolving Fund Operations (RFO) was created under the circumstances when the major UNIDO donors insisted that UNIDO should increase its assistance to the private industry. At that time, however, there was no mechanism available to provide such assistance except through African commercial banks, which had lending interest rates of upwards of 25–30%. The total contribution were approximately US\$ 27 million funded from multilateral sources through Special Purpose Contributions of donors to the UNIDO Industrial Development Fund. Targeting the private sector as the main beneficiary of the programme, it assured ownership, and in the long-term, through the creation of the RFO mechanism had built on its self-sustainability. The RFO has played a catalytic role in the further development of the sector assuring its continuation.

**Main points:** (a) The programme supported small-scale industry by providing easier access to the credit (no collateral required) and accompanying advisory and training services free of charge. (b) Directly supported industry by establishing new associations, strengthening pre-existing associations and creating the RFO. (c) Sectoral associations could become reliable partners for non-traditional donors to channel technical cooperation funds. (d) Markets may already be distorted in developing countries which may cause operational difficulties when implementing the projects.

**Discussion points:** (a) Issues of net incremental cost and incremental net savings were raised. (b) Issues of market distortion and equity were raised.

- Experience of Burkina Faso with Concessional Lending Mechanisms.

**Description:** Burkina Faso's Support Fund to the Remunerative Activities of Women (SFRAW) is a governmental organisation placed under the supervision of the Ministry of Economy and Finance. Since its creation, the objectives of the organisation have been to promote access to credit for women working in the informal sectors and provide them with loans and guaranty. After ten years of activities, SFRAW has allocated US\$ 10.5 million to 300,411 women.

**Main points:** (a) New financial mechanisms should involve various organisations and groups. (b) Group and peer pressure may promote reimbursements of the funds. (c) There is no stereo-typed financing approach for informal sectors.

**Discussion points:** Different financial mechanisms should be applied to the informal sector.

16. Participants expressed that they have now clearer technical picture of the innovative financing experiences for the projects in the developing countries. UNEP thanked the participants and particularly the presenters of the 10 case studies, Implementing agencies, bilateral agencies and the Secretariat of the Multilateral Fund.
17. The workshop did not consider any conclusions. At the close of the meeting, H.E. Tadanori Inomata summed up the following points to conclude the workshop on the understanding that they were made on his on his perspective of the workshop discussions and do not represent binding conclusions for any participant (See Annex I).

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## PRESENTATIONS

### A. SESSION 1: CASE STUDIES RELATED TO OZONE DEPLETING SUBSTANCES

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WORLD BANK

# FINANCE Matters

Innovative Financing  
for effective ODS phase-out



THE WORLD BANK

Concessional Lending Workshop

July 22, 2002

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## Outline

- *Questions*
- **Obstacles** to Innovative Financing (IF)
- **Objectives** of IF
- **Big picture** in IF
- **Lessons learned + Opportunities**
- **WB's role** in IF
- **Challenges**

## *Questions*

- *What is the best option for countries to utilize **limited financial resources** for an accelerated phase-out of **remaining ODS**?*
- *How do we **assist** countries and enterprises bridge **financial gaps**?*
- *What are the **benefits** and **costs**?*
- *Does **innovative financing** = **loans**?*



## Today and Tomorrow

- **Gap between MLF financial resources and increasing global, national and private sector demand (MP-targets)**

- ◆ Limited funds within country

- ◆ Increasing demand for **co-financing** (e.g. by enterprises after '95)

➔ **Need to leverage funding (MLF + other)**

## Tomorrow

➔ Remaining ODS-phase out / sectors

➔ Significant potential for projects with good return on investment (potentially high incremental operating savings)

➔ Impact of production closure

## Today: Obstacles to Innovative Financing (IF)

- Cost-Benefit analysis: **negative ROI** for most conversions (grants)
- Current approach set up : “**grant culture**”
- Eligible cost regime results in complete separation of grant funding and counterpart funding, not **total project financing**
- Lack of information about **capital markets**, in particular, which are targeted for SMEs

## Today: Obstacles to IF (2)

- Lack of concrete **project experiences**
- Additional foreign debt burden (guarantee)
- **Time** left (targets / repayments)
- Administrative/transaction **costs**
- **Regulation** to support CFC phase-out not in place in many countries

## Tomorrow: Objectives of IF

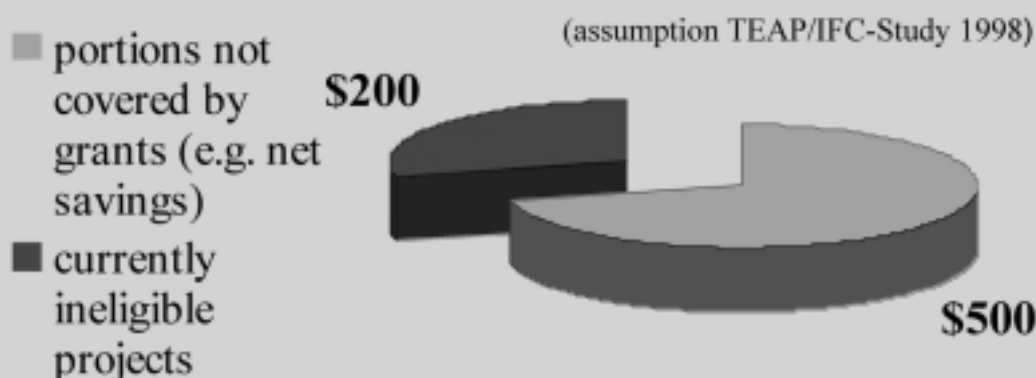
- Maximize **outreach, increase and complete ODS phase-out (use)**
- Meet **needs of private sector**
- **Leverage financial resources** in cost-effective way
- Stimulate, mobilize and direct **private investments for new project types**

## Big Picture in IF

- **Market** (global potential deals, country and sector level, institutional framework, MP)
  - **Supply** of funds for IF
  - **Demand** for IF
  - **Basic Approaches**
-

## Market: Potential Deals

**\$ 700 million demand for non-grant financing**  
 out of **\$ 1,500 million total requirement**



## Supply of Funds for IF

- **MLF** : traditionally, **provides financial and technical assistance** through “conventional” projects

**New** : **MLF (IAs)** acts as facilitator to enhance co-financing (hybrid instruments) for projects

- **Provider of private capital (banks, funds...)**

**New** : Untapped market (e.g. to SMEs) due to lack of specific information, capacity, type of projects, high costs, governmental regulations, ...

## Demand for IF

**Relevant sectors:** chillers, commercial and domestic refrigeration, methyl bromide...

**Clients:** searching for co-financing (e.g. SMEs)

- Depends on **availability of capital/funds** (own, national, international)
- Depends on **government incentives and political priorities**
- Depends on **new services : TA** (e.g. management training, energy audits)

## Basic Approaches

- **On-lending facility** within a country (flexible revolving fund system)
- **Contingent financing**



**Menu of financial instruments**  
to use in both approaches  
**(country/case-by-case)**

## Definition of Financial Terms

*Conventional grant* = buy-down incremental costs

*Contingent financing* = variable discount rates for different risks over time

- **Contingent grant** = IR free loan, repaid if successful e.g. Thailand Chiller project
- **Contingent or concessional loan**
  - a) lower cost of capital than commercial loan
  - b) risk or credit guarantees (venture capital)

## Financial Instruments for IF

### Loans

- + Co-Financing
- + Leverage effect MLF
- + Projects financially sustainable
- ? Guarantees
- ? Transaction costs
- ? Grant-Loan mix

### Revolving Fund

- + Flexible mechanism
- + Sector approach
- + Leverage effect
- ? Grant-Loan Mix
- ? Institutional capacity to administer RF
- ? Time horizon

## Financial Instruments for IF

### Grants (IC)

- + higher cash flow/liquidity
- + Technical assistance
- + Institutional strengthening
- Cost-efficiency thresholds

### IR Buy-down Grants

- + If access to loans exists
- + Easy to implement
- + Demonstration for private investors
- + Incentive for enterprises
- Additional costs to MLF
- ? Competitive auction model possible

## Financial Instruments for IF

### Leasing-component

- + Flexible
- + Short-term
- + No need for collateral
- + Repayments if beneficial

### Guarantees

- + If loan in local currency
- ? Export credit agencies/government
- ? Debt burden

## Lessons Learned + New Projects

### Customized “conventional” grant programs

- Turkey - revolving fund
- Chile - grant-auction
- China - halon-phase out - bidding mechanism

### Innovative financing in new projects

- Thailand chiller - contingent grant
- Mexico chiller - revolving fund\*

## Financial Mechanism Turkey

Grant  $\Rightarrow$  Country  $\Rightarrow$  RF  $\Rightarrow$  Grants/Loans

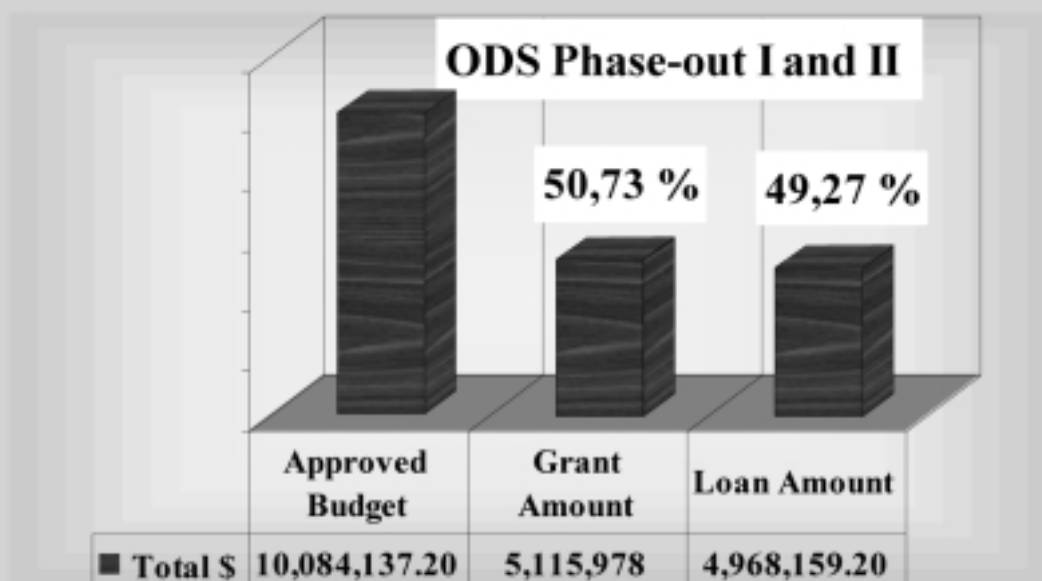
Sector	Grant component	Loan component
Refrigeration/AC	Safety, test + training costs. <i>If project budget &lt; \$100,000 then 100 % grant.</i>	Remaining costs (equipment, civil work)
Foams, solvents, aerosols, halons	Costs up to \$ 500,000	Remaining costs



## Financial Mechanism Turkey

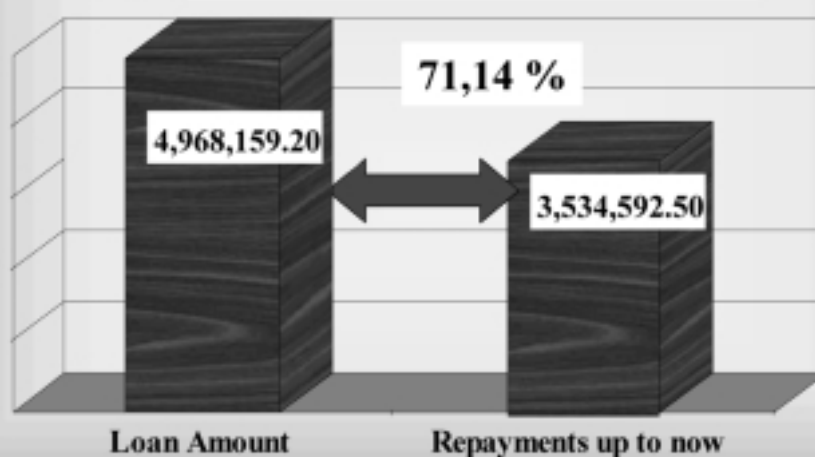
Interest Rate:	0 %
Currency:	USD
Maturity period:	2 years from completion
Terms of payment:	4 equal installments
Management costs:	3 % (for all projects)

## Turkey: Revolving Fund



## Turkey: Revolving Fund

### Loans and Repayments (\$)



## Chile Auction Program

### Market-Based-Grant program

- |   |                                   |
|---|-----------------------------------|
| + <b>SME</b> with low ODS consumption attracted | -/? Regulation in place           |
| + <b>Higher cost-efficiency</b> of projects     | -/? Co-financing                  |
| + Administrative costs to MLF reduced           | ? Complexity of project procedure |
| + <b>Lower delays in implementation</b>         |                                   |

## Thailand Chiller CL

- Joint financing **GEF 50 % and MLF 50 %**
- **Contingent financing**
- **Revolving fund based on energy savings**
- **Quota systems** to control CFC imports and energy consumption standards for chillers
- + Energy efficient chillers expected to **payoff by themselves**
- + **FCCC/KP + MP issues jointly addressed**

## Mexico Chiller RF

- **Joint financing** UK-bilateral, local partner institution and chiller owners
- Grant to country
- **Test menu of financial options in phase I**
- **0 % IR and 3.5 year loans**
- **Packaging of contractor services**
- **+? Demonstrate benefits for private investors**

## Source of Opportunity

- Opportunity arose from the findings of a comprehensive sector-wide strategy for the phase-out of CFC from *India's chiller sector*

## India Chiller Sector Strategy Study Objective

- The principal question sought to be answered by the sector strategy study, and the supporting cost model, is what are the costs and benefits of the range of intervention options open to India to phase-out of CFC-based chillers

## India's CFC/ODS Phase-out Strategy

- ODS Rules Limit Use in New Equipment Beginning 1 January 2003
- Shift from ODS Phase-out in Manufacturing Sector to Managing Residual Consumption in Servicing and Maintenance Applications
- Efforts Focus on 2005 Consumption Target
- World Bank Assisting India with Sector Strategies for Chiller Sector, Process Agents and CTC Production

## Key Chiller Population Characteristics identified through the sector strategy...

- overall population count;
- size distribution, in terms of tonnage of refrigeration (TR);
- distribution according to type of compressor (centrifugal, reciprocating, scroll, screw) used;
- age distribution (determined by year of purchase/installation);
- life distribution of chillers per "manufacturers' recommended life", or current industry expectations and practice;
- associated with the above, the base-line phase-out profile of the existing stock of CFC chillers in the absence of any Protocol requirements;

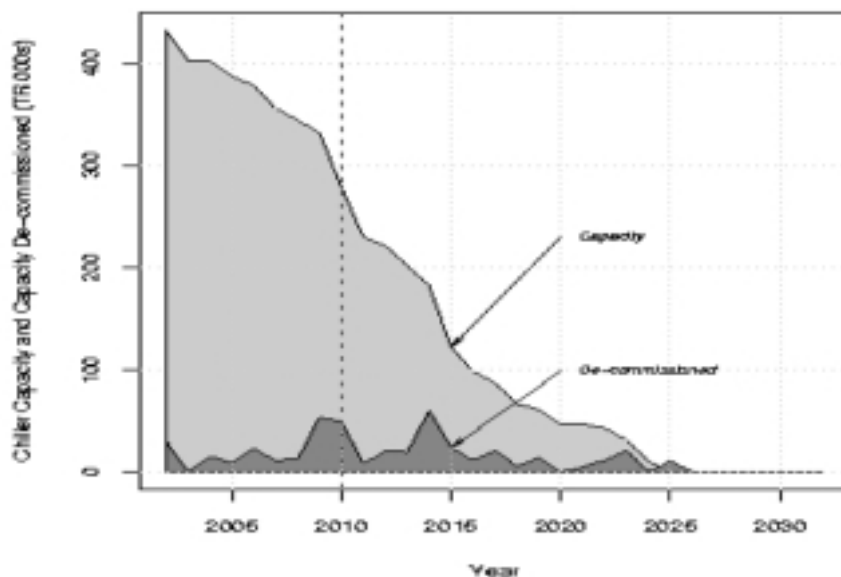
## Key Chiller Population Characteristics (continued)

- the distribution of usage, i.e the number of hours of use per year desired. This would vary depending primarily on application (comfort vs. process vs refrigeration) and on location/climate;
- the distribution according to refrigerant used (CFC-11, CFC-12). While the focus is on CFC-based units, data have been obtained also on non-CFC units, more specifically for addressing the performance issues that will govern the choice of transition;
- the distribution according to application, that is air conditioning vs. refrigeration, and air conditioning for comfort vs. air conditioning for process applications.

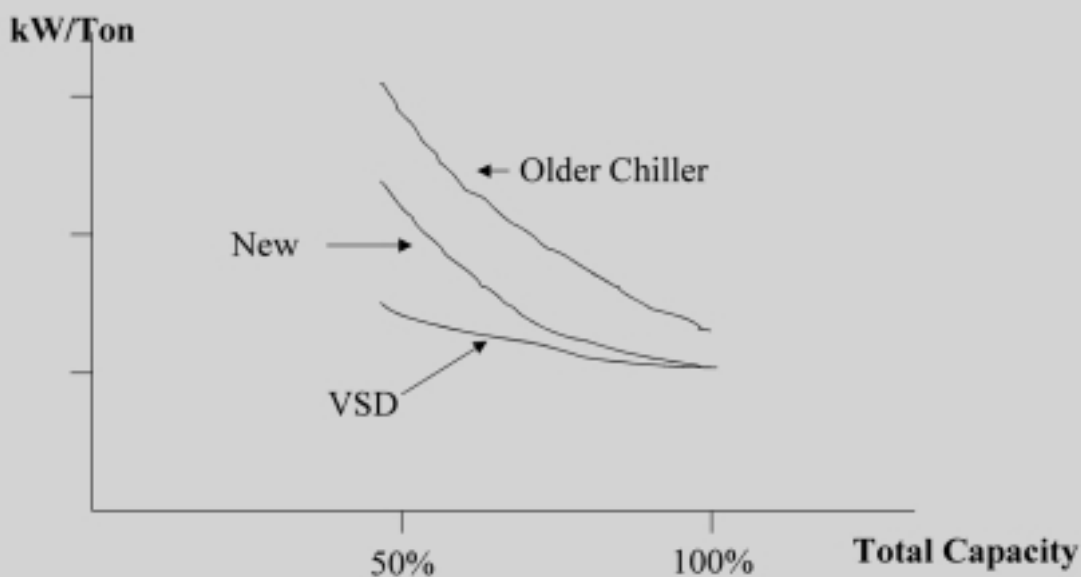
## Key Findings

- Baseline CFC Phase-out Profile Does not Meet 2010 Phase-out Schedule
- There is an Incremental Cost (Barriers) for CFC Phase-out at the Sector Level
- The Feasibility and Effectiveness of a Recovery and Recycling Program Is a Key Variable in Sector-Wise Cost Effectiveness
- Chiller Population is Large and Refrigeration Capacity is Significant
- Non-CFC Technologies Are Readily Available

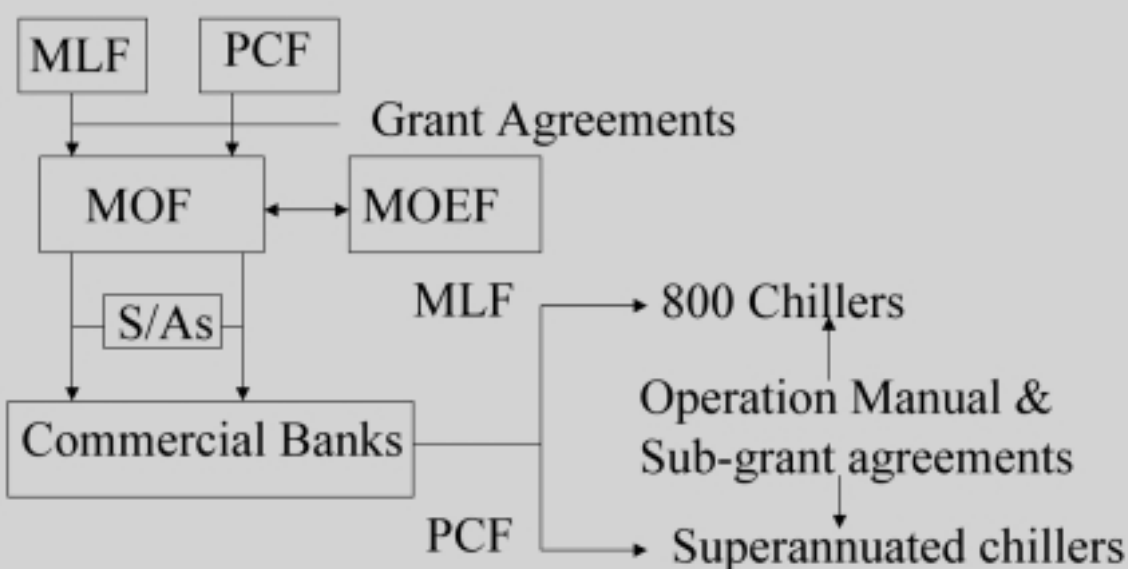
## Baseline Chiller Capacity Phaseout



## Energy Consumption Performance Characteristic of Centrifugal Chillers



## Possible Implementation Arrangement



## World Bank's Role in IF

- Inclusion in **National Phase-Out Strategy** and **umbrella projects** (target group e.g. SMEs)
- Assistance in establishment and use of **financial instruments** (WB's expertise)
- Consistency and use of **synergies** with other (Bank) programs (e.g. PCF) for sustainable development



## “Innovative” Challenges

- Being **adaptable** : **Customize financial approach** to country and sector needs
  - Being **efficient** : ODS phase-out increased and accelerated in cost-efficient way
  - Being **flexible** : **Design and implementation of new projects**
  - **Enhance new partnerships**
  - **Future direction** and support from Parties
-

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## THAILAND: BUILDING CHILLER REPLACEMENT PROJECT

### Mr. Anat Prapasawad

VP, Environment and Energy Conservation Center the Industrial Finance Corporation of Thailand

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## INTRODUCTION

The Royal Government of Thailand has received two loans from the Multilateral Fund for the Implementation of the Montreal Protocol (MLF) and Global Environment Facility (GEF) in the amount of US\$ 4.975 million equivalent toward the costs of the Building Chiller Replacement Project, and it intends to apply the proceeds of this loan to payments for goods, works and related services to be procured under this project.

The overarching objectives of the proposed project are to assist Thailand to (I) improve energy efficiency and reduce greenhouse gas emissions in the building chiller sector, and (II) reduce consumption of ozone depleting substances (ODS). Specifically, this project will establish favorable conditions that will facilitate early replacement of poorly energy efficient chillers using CFCs as refrigerant with highly energy efficient non-CFC chillers and demonstrate actual energy savings from replacing about 20-24 old CFC chillers.

The Industrial Finance Corporation of Thailand (IFCT) is appointed by the Government to be an executing agency for this project. In addition, the Ministry of Industry and Ministry of Science will be the focal point for the MLF and GEF respectively.

### Why is the Program consider innovative ?

1. It combines 2 funds with 2 objectives which are ODS phase out and CO<sub>2</sub> reduction.
2. It is demonstration program aiming to create investment demand by proving that replacing the new chiller is financial viable.
3. It provides a performance guarantee for the new chiller.
4. The Thai government has committed to provide 3000 million Baht soft loan for follow on projects.

## TERMS AND CONDITIONS

### Technical Criteria:

1. Existing chillers are centrifugal type and use CFCs as refrigerant.
2. New chillers are non-CFC screw or centrifugal type.
3. Power consumption of new non-CFC chillers should be lower than 0.63 kW/RT.
4. The cooling capacity of existing chillers should be higher than 250 RT.
5. The existing chillers shall be disposed properly following the Department of Industrial Works "Codes of Good Practice".

### Financial Criteria:

1. Interest 3.5% p.a. will be charged monthly on the outstanding loans after the commissioning date with 48 months payback periods.
2. Monthly repayment shall be depended on expected energy savings.

### Advantages of this Program:

1. Enterprise can choose a supplier out of seven.
  2. No letter of credit is required.
  3. There is a guarantee for technical short fall.
  4. A maintenance contract for a period of two years, in addition to a one-year manufacturer warranty, from the commissioning date is mandatory for all chiller replacement under this project.
  5. No currency risk.
-

**Disadvantages of this Program:**

1. Enterprise has to dismantle the compressor of the old chiller, scrap value needed to be disposed.
2. New non-CFC chillers must be equipped with a data recording system which will be used for monitoring power consumption of the new chiller.

**Project Status:**

1. 16 chillers are technically and financially approved by IFCT with 4 chillers having signed sub-loan agreements. However, 5 chillers have been canceled after approval. Therefore, only 11 chillers are in progress.
2. 5 chillers are technically approved which are in the process of financial appraisal. Three of these chillers are expected to pass through financial appraisal.
3. We still have at least 20 prospect chillers as of August 21, 2002 which are in the process of measuring power consumption.

**Summary of key issues and actions**

1. Capacity Expansion

Some building owners have redesigned load management to suit their existing load demand due to energy efficiency reasons. Therefore in some cases where they would like to increase the size of cooling capacity for energy efficiency reasons which clearly have nothing to do with production capacity will not be eligible for this program because of capacity expansion as stated in the EXCOM policy.

**Action**

For helping building owners join this program, IFCT decided to provide loans for increasing capacity cost using its sources of available funding. However, in our opinion and experiences concerning this issue, since this is not a grant program but rather a 100% loan program with a little bit lower interest rate and higher cost as explained later more flexibility is needed. In other similar programs, it may allow building owners to expand capacity up to 50%. In many cases where the increased capacity has no relation to production capacity this will not be an issue.

2. Higher cost

Cost of participated building owners are \$13,000 higher than normal project due to requirements;

- data locker	\$9,000
- scrapped value of compressor	\$4,000
(Excluding cost for dismantle chiller \$8,000)	

**Action**

IFCT tried to convince building owners to accept in performance guarantee in compensation of additional cost, the usefulness of the data logger and environment protection reasons. In their opinion, this cost must be born by the fund as a grant.

3. Limited type of old and new chiller technology

Over 50% of building owners who would like to join the program but they are not eligible because of different chiller technology as designed.

**Action**

According to our designed program, old chiller must be centrifugal chiller only. But from field survey, we found that there are numbers of screw and reciprocating chillers using CFC as refrigerant too. Therefore, we sought World Bank approval on the issue and it was agreed later. However, most of the chillers as discovered are not eligible for the program.

4. Power consumption measurement

There are a number of chillers which cannot be measured at 80-100% load of capacity as designed for many reasons; chillers are often too big, or in many cases, such as the hotel business, the capacity load cannot be forced to 80% because of low occupancy rate.

**Action**

Nothing could be done.

## 5. Supplier Reluctance

In commercial practice, after receiving the purchase order, the supplier will receive a down payment from the buyer. But in our program, the supplier will be able to disburse at full amount after commissioning is complete. Therefore, in many cases, suppliers preferred building owner to abandon the project and proceed with business as usual. For good customers, suppliers will not try to convince them to join the program.

**Action**

IFCT called a meeting among suppliers and asked if this was the case. All suppliers have submitted request letter to IFCT to allow some deposit. The World Bank had no objection to our request to pay an advance payment to suppliers with no interest charging to building owners as incentive for supplier to proceed the program faster.

## 6. High Interest Rate

At the time when the program was designed, the market interest rate was as high as 10-12%. Therefore, the interest fee of 4.5% being charge to IFCT was considerable low then. However, lately the market interest rate has been declined to as low as 5-6%. The 4.5% interest rate is not an incentive to building owners and as a result, some of them canceled the project to invest by themselves or delay their decisions.

**Action**

IFCT is now on the process of lowering the interest rate even though the new interest rate may not cover our costs.

## 7. Equipment Disposal

As initially agreed, the equipment will be disposed by destroying the compressors and dismantling all parts. However, in cases where the building owner would like to keep them as spare parts for existing CFCs chiller, they will have to bear very high costs for dismantling properly as spare parts. Instead they would like to keep the equipment as it is or unstripped so that if they need spares they can use it piece by piece without paying the dismantling cost.

**Action**

Depending upon policy.

## 8. Limited Timeframe

As compared to other loan programs which will allow the financial intermediary 3 years for disbursement after the fund becomes effective, we are allowed to identify customers within 3-4 months and disburse within 1 year.

**Action**

Depending on policy.

## 9. Technical Assistance

The fund has been approved without providing budget for technical assistance (TA). This program is different than normal concessional loan programs because it is a demonstration program with performance guarantee. In our case, since we are financial institution TA is needed to help us during the project preparation and monitoring stages. However this issue has been solved using advance payments from other Special Accounts and they will be paid back when the project Special Account has earned enough interest. Moreover, initially we thought that if we could identify 40-50 chillers it would be enough to meet the target of 20 chiller replacements. Later we found that the project identification number should be around 150 chillers in order to meet the target. This again come back to TA issue.

**Action**

We agree with the World Bank to let our in-house engineers and suppliers perform the work. However, in many cases it took longer to do because we had to consult with World Bank and experts with which we have connections.

## *Thailand: Chiller Replacement Project*

**Speaker:**        **Mr. Anat Prapasawad**  
**Vice President**

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1

## *Thailand: Chiller Replacement Project*

### **Introduction**

- **Innovative Project:**
  1. **Combination of GEF and MLF with 2 objectives**
  2. **Concessional Loan**
  3. **Seed fund with Thai government commitment for contribution in phase II**
  4. **Demonstration Project**
  5. **Compensation for technical shortfall (ESCO)**

2

## *Thailand: Chiller Replacement Project*

### **Background**

- **2 funds from GEF and MLF in the amount of USD 4.975 Million**
- **2 objectives**
  - **phase out of CFCs refrigerants**
  - **Reduce GHG emission**

3

## *Thailand: Chiller Replacement Project*

### **Baseline Information**

- **Economic hardship**
- **> 1,500 centrifugal chillers needed to be replace**
- **No existing investment demand**
- **7 chiller suppliers**
- **Lack of incentives**
- **Lack of confidence in technology**

4

## *Project Designed*

- **Aiming to demonstrate 20-24 chillers as viable and efficient project in the first phase which may expand to another 420 chillers replacement**
- **Providing low interest rate as incentive**
- **Providing compensation for technical shortfall**

5

## *Terms and Conditions*

### **Technical Criteria**

- **Existing chiller must be centrifugal type using CFCs refrigerant**
- **New chiller must be centrifugal or screw**
- **Power consumption of existing chiller > 0.8 kW/RT**
- **Power consumption of new chiller < 0.63 kW/RT**
- **Cumulative operating hours < 15 years**
- **Disposal of existing chiller acceptable to DIW**

6

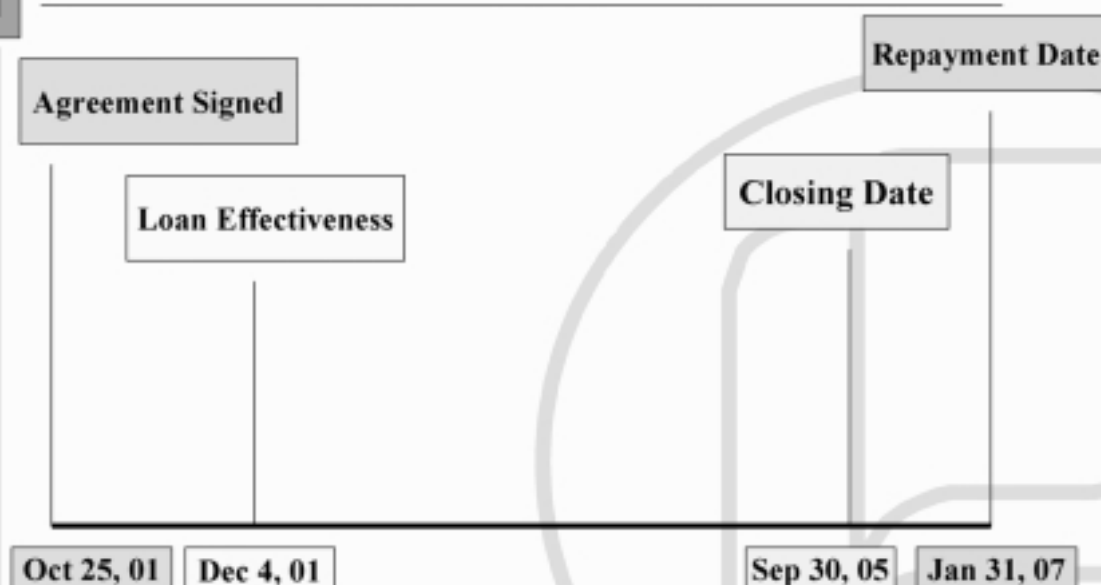
## *Terms and Conditions*

### **Financial Criteria**

**Budget : USD 4.975 Million**  
**Currency : Local currency**  
**Interest : 4.5% per annum**  
**Repayment Period: < 48 months**  
**Repayment Installment: every month from  
90% of saving**  
**Compensation : up-front payment**

7

## *Implementation Plan*



8



## *Project Status*

<b>Already Installed</b>	<b>3</b>	<b>Chillers</b>
<b>During Installation</b>	<b>2</b>	<b>Chillers</b>
<b>Loan Agreement Negotiation</b>	<b>8</b>	<b>Chillers</b>
<b>Financial Analysis Stage</b>	<b>5</b>	<b>Chillers</b>
<b>Technical Analysis Stage</b>	<b>9</b>	<b>Chillers</b>
<b>TOTAL</b>	<b>27</b>	<b>Chillers</b>

9

## *Barriers in implementing of project*

### **Project Designed Period**

- **No Technical Assistance budget provided**
- **No Interest Spread fee provided**
- **SDR currency**
- **Clause of Default**
- **Private Loan Scheme was new to WB then**

10

## *Barriers in implementing of project*

### **Implementation Period**

- **Limited target group due to;**
  - low operating hours
  - limited chiller technology
  - limited target sectors
  - power consumption criteria for existing and new chiller
  - power consumption measurement constraint
  - definition of capacity expansion
  - No clear definition on how to scrap and /or dismantle existing chiller

11

## *Barriers in implementing of project*

### **Implementation Period**

- **Cost of participants are \$13,000 higher than normal project due to requirements;**
  - data locker \$9,000
  - scrap value of compressor \$4,000

**(Excluding cost for dismantle chiller \$8,000)**
- **Participant uncertainty due to failure of similar program**
- **Suppliers not giving full support**
- **Tight schedule for FI**

12

## *Barriers in implementing of project*

### **Implementation Period**

- **Economic hardship**
  - declining interest rate
  - Baht devaluation
  - NPL
- **Unlike providing grant, loan program needs more flexibility**
- **No investment demand at all**
- **Energy Efficiency will also depend on appropriate size of chiller**
- **Chiller Replacement is considered as second priority**

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## *Barriers in implementing of project*

### **Implementation Period**

- **Building Owner(BO) may try to do preventive maintenance before making decision**
- **BO who has waste heat will invest in absorption chiller instead**
- **In order to push them to make decision not only technical management will be convinced but also top administration management**
- **Cost of FI is very high so as to BO**
- **Many BO canceled because terms, condition and procedure are complicated**

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## *Recommendation*

- **Providing more flexibility to loan program if objectives are met**
- **Program Designed should be simple and easy to implement following commercial practice**
- **Provision of Technical Assistance cost is a must for this type of project**
- **As a loan program, Fund should consider to provide any additional cost compare to normal project such as scrap value, data locker etc.**

## **INNOVATIVE IMPLEMENTATION BY “TECHNOLOGY DEVELOPMENT FOUNDATION OF TURKEY- (TTGV)”**

**Speaker: Senol ATAMAN, Project Coordinator Environmental and Energy Projects Group**

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### **1. BACKGROUND**

TTGV was established on June 1, 1991 in order to raise the industrial sector's awareness of R&D and to support technology development projects of the Turkish Industry through the funds provided by The Undersecretariat of Treasury from the resources of the World Bank.

- TTGV is an independent non-profit organisation established jointly by the private and public sectors.
- TTGV is a non-governmental organization with a special status that has undertaken a national mission of fostering the continuous and effective technology development activities of companies in the industrial sector.
- TTGV serves all companies in the industrial and information technology sectors.
- TTGV is the only organisation in Turkey that can truly be said to demonstrate all of the characteristics of similar organisations in developed countries.
- TTGV is an open, transparent organisation that is accessible and presents a minimum of red tape and bureaucratic procedures.
- TTGV has 30 number of permanent staff and; a pool of experts with nearly 1,500 people,
- TTGV has a proven track record that demonstrates the success of its support for the projects of industrial sector companies.
- TTGV has proven its international credibility through its representation of Turkey at TAFTIE, a grouping of European organisations involved in similar activities.
- TTGV has an independent monitoring and evaluation of activities; auditing according to IAS

### **Vision**

To strengthen and contribute to boosting Turkish Industry's competitiveness in international markets to develop Turkey's technological infrastructure.

### **Mission**

- To demonstrate to Turkish Industry the benefits of investing in research and development to improve competitive position and encourages industrial companies in the private sector to undertake and pay for technology development and innovation.
  - To stimulate and support the development, funding and infrastructure needed to commercialize competitive technologies.
  - To facilitate and financially support technology development by Turkish Industry, particularly activities expected to lead to rapid and widespread enhancement of Turkey's competitive advantage.
  - To encourage the development, application and exploitation of new technologies, particularly, to achieve upgrading from low-quality, labour-intensive products and processes towards higher value-added goods and services.
-

- To target products and services with which Turkey can achieve increased presence in export markets with some consequent import substitution.
- To work to improve the competitive environment, regulatory and institutional framework, and fosters further increases in the demand for technology, innovation and technology finance.

## Founding Members

Include 26 private sector firms, 6 public institutions, 10 umbrella organisations and 14 individuals.

## Board of directors

6 out of 9 TTGV Board members are from industry and 3 members are one each from The Undersecretariat of Treasury, The Small and Medium Industry Development Organisation (KOSGEB) and The Scientific and Technical Research Council of Turkey (TÜBİTAK).

## Financial Sources

For Technology Development projects financing:

Undersecretariat of Treasury/World Bank

*Technology Development Project (1991-1998)*

Undersecretariat of Foreign Trade (UFT)

*Product Development R&D Financing Support (1995-...)*

Undersecretariat of Treasury/World Bank

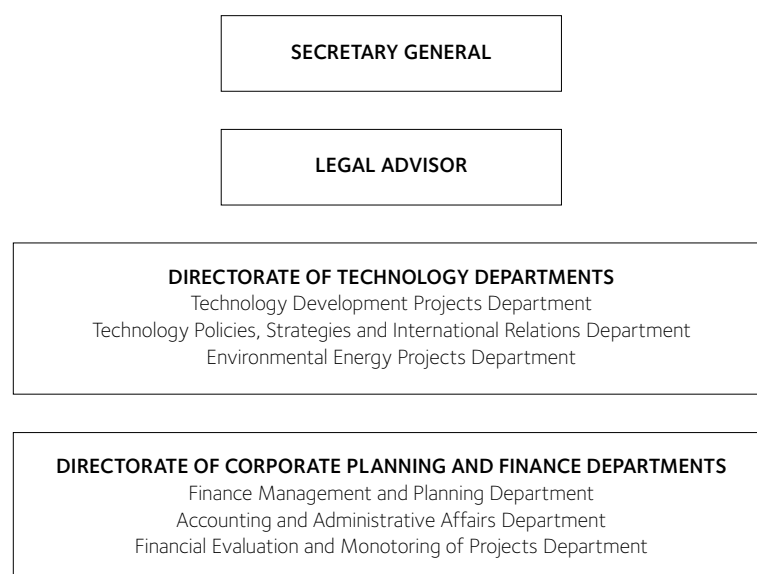
*Industrial Technology Project (1999-2003)*

For Phase-Out Of Ozone-Depleting Substances project:

Undersecretariat of Treasury/World Bank

*Montréal Protocol Multilateral Fund (1994-...)*

## Organization Chart



## 2. MAIN ACTIVITIES

### 2.1 Technology Development Projects

Technology Development Projects Support Program, that is the core business of TTGV, is being implemented through the funds provided by The Undersecretariat of Treasury from the resources of The World Bank and through The Foreign Trade Undersecretariat.

The program has been designed depending on the fact that in order for Turkish industry to gain and maintain a competitive edge in today's highly competitive environment, it is imperative that it develops new products and processes and/or improves existing products and processes. TTGV provides technical and financial support for companies to implement their technology development projects and to carry out technological product and process innovation activities in order to compete in the tough market conditions brought about by globalisation.

Since 1991, TTGV has provided financial support, which has secured a national industrial R&D volume of 227 million US dollars for 293 projects run by private sector firms, 73 percent of which are SMEs. Of this amount, TTGV financed 109 million US dollars.

TTGV contributes up to 50% of the total project budget while the rest should be financed by the firm being supported. The timeframe for the support is maximum 24 months. The amount provided by TTGV is maximum US\$ 2 million, with no minimum amount stipulated.

The project proposals are evaluated by the Field Committee Members, who are the experts on the subject of the proposal and chosen from the universities, research centers and industry. While the projects are being implemented, TTGV designates a Project Supervisor for each project to follow-up progress and guide the firms. Project Supervisors are generally drawn from academia so that a linkage between university and industry is established.

TTGV's technology development project support program is monitored and evaluated independently every two years. Some of the results of recent evaluation are given below:

- All SMEs and 80% of large firms consider the support of TTGV to be an important vehicle for the financing of projects.
- 73% of product development projects and all of process development projects attained pre-planned technical targets.
- Half of those companies that set a target of entering new markets have succeeded in doing so.
- Of all companies supported by TTGV, 88% plan to embark on new R&D projects, with 63% of those companies are planning to apply once again to TTGV.

### 2.2 Phase-out of Ozone-depleting Substances Project (PODS)

#### ODS Phase-Out Initiatives/ Strategies/ Policies In Turkey

In 1992, the Government of Turkey (GOT) with the assistance of the World Bank, developed a strategy for the phase-out of ODS as part of the Country Programme. Although Turkey is an Article 5 country, the GOT has decided to phase-out ODS usage in manufacturing sector by year 2000.

The strategy calls for policy actions and investments to achieve the effective phase-out of ODS. The implementation of the strategy has started and is being supported through the Phase-out of Ozone Depleting Substances (PODS) Project.

The development of policy actions under the ODS phase-out strategy is the responsibility of the Ministry of Environment (MOE) whose jurisdiction includes legislation, policy development, and enforcement of environmental protection activities. Specific duties related to the Ozone issue are to supervise and coordinate international and national activities related to the Montreal Protocol and to enforce the Government's Action Plan for the phase-out of ODS.

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The major regulation is the Turkish National Ozone Policy, which was published in the official gazette by the end of July 1999. However, the National Ozone Policy actually came into force in 1998, where a quota system for import of ODS and ODS containing equipment was introduced. The import quota's have been adjusted on a regular basis and latest adjustment was in July 1999. The import quota's have significant impact on prices of ODS.

The National Ozone Policy banned the import of ODS and ODS containing equipment by January 1, 2000. Exemptions are made for essential use (laboratories) and for servicing of existing ODS containing appliances. The quantities allowed for service purposes are determined and adjusted on a regular basis.

The Technology Development Foundation of Turkey (TTGV) has been given the responsibility for identifying and preparing investment projects for ODS phase-out in all of the ODS consuming sector; informing, particularly small and medium sized enterprises (SME's), of the requirement to phase-out ODS use and the technology options and assistance available to them to switch to alternatives; prepare demonstration projects to further assist in providing information on phase-out possibilities in each sector; supervising and monitoring the sub-projects.

*In 1997 Turkey received an award from the United Nations for being among nine countries, out of 49, to most successfully implement the Montreal Protocol. The award was accepted on behalf of Turkey by the Ministry of Environment.*

### **ODS Phase-Out Activities of TTGV**

The aim of this project is to assist ODS using industries to effective and efficient phase out of ODS through the adoption of policy, technological and monitoring measures. In order to achieve such objectives, TTGV is responsible on one hand, for the selection of demonstration projects to develop alternatives to enhance a smooth transition for small and medium enterprises to non-ODS using technologies, and on the other, to develop country projects for large scale ODS users.

TTGV supported 28 non-ODS projects as country projects with a total amount of \$24.3 Million USD. Of these projects, \$15.4 Million committed for 27 sub-projects and \$9 Million approved for "Refrigeration ODS Phase out Sector Plan" (RSP) by MPEC. \$13.4 million has already been disbursed for 21 completed and 7 running sub-projects. Distribution of the projects on sectors is like 9 from refrigeration, 12 from foam, 3 is from MeBr (agriculture), 3 from solvent and 1 from Aerosol sectors. Of this project, RSP covers full conversion of refrigeration sector which is highly important for future phase-out activities.

For efficient use of financial resources, a revolving fund was established by giving partly loans and partly credits to the enterprises. Criteria were set for different sectors to determine the grant-credit ratios of approved projects. As of today, approximately 35% of the amount allocated as credit and 95% loans paid back up to know. Rest will be paid till 2003. The 19 firms has been supported as grant and 8 firms as partial loan. The RSP project is planned \$3.4 million loan \$5.6 million grant basis as future activity. The main purpose of this revolving fund is to continue phase-out activities for the elimination of hydrochloroflorocarbons and other ODSs which is not supported through Multilateral Fund. Revolving fund is also important for continuation of ODS phase-out activities after the Multilateral Fund ceased.

Under the PODS Project, following coordinating and information dissemination activities have been performed;

- In 1995, a detailed survey was made in order to identify the consumers of ODS's in Turkey. Target sectors were determined for further project development activities.
- In 1996, seminars in Ankara, Istanbul and Izmir have been performed to the refrigeration, foam, solvent, aerosol and fire extinguishing sectors. The contents of these seminars were Ozone Depletion, Ozone friendly alternative technologies, Multilateral Fund of Montreal Protocol and criteria for project appraisal and approval.
- In 1997, two seminars have been performed to the foam producers and Association of Automotive Parts Manufacturers in Istanbul. The preparation of "Turkey-Halon Sector Assessment Report" which is funded by UNDP, has been coordinated in order to identify National Strategy for fire extinguishing sector.



- In 1998, "Halon Banking Assessment Report" was prepared and a seminar has been performed in May to the fire extinguishing sector.
- For refrigeration sector, a highly detailed survey was made covering more than 300 small and medium enterprises. Survey results were incorporated into Refrigeration Sector Plan.
- For Methyl Bromide, which is a pesticide used in Agriculture, 4 Workshops was organised to prepare "National Strategy and Action Plan" and to trigger the preparation of projects in agriculture. A survey to the farmers has made to determine the profile of Methyl Bromide consumption on different crops. 3 MeBr projects are already running by TTGV.
- In first half of 1999, detailed survey for foam producers was made. An umbrella project has been prepared based on the results of this survey.

### Conditions of Funding

Sector	Grant Portion	Loan Portion
Refrigeration/Air Conditioning	Safety, prototype, test and training related costs (If the project budget is smaller than USD100.000, it is 100% grant)	Other Costs
Foam, solvent, aerosol, fire extinguishing	Cost up to 500,000USD dollars	Remaining Cost

### Backpayment of Loan

Interest	0%
Currency	USD
Duration	2 Years from completion of Project
Term of Payment	4 Equal installment

### Key factors for successful implementation

- Expert Evaluation: Detailed evaluation of the project by external technical experts (private/university/public), Detailed financial audit of the company by external financial experts
- No-objection by the WB-UFT/Approval by MLF
- Contract Signing: Guarantee letter, mortgage, cheque, etc. in need
- Supervision by TTGV project expert, external technical expert and supervision by WB team (See Fig. 1)
- Monthly evaluation of expenditures and disbursement
- Progress reports, Final report
- Repayment period (Zero interest rate, Long-term period (2-3 years), 1 year grace period if needed, Tight follow-up

### Difficulties

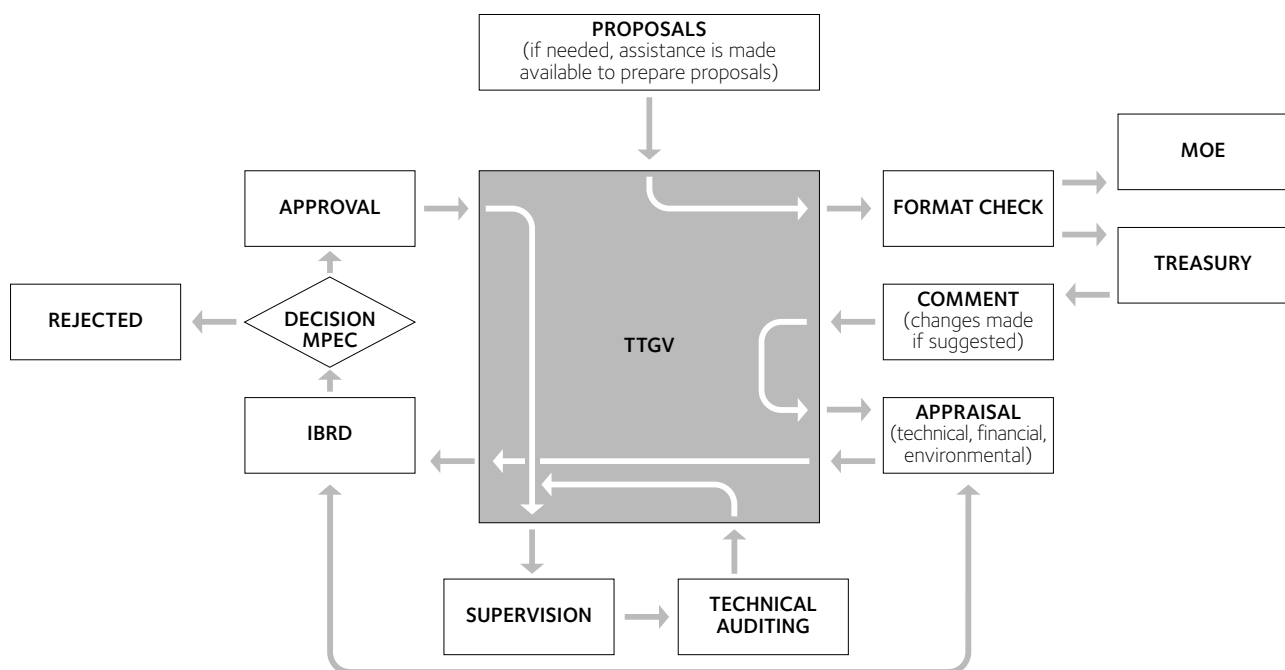
- Long evaluation period and process before approval of Fund
- Late decision for approving of Fund
- Insufficient fund approval for projects
- Inflexibility on the project budget during implementation
- Insufficient own resources of companies
- Economical problems of the Country
- Lack of qualified personnel and management capacity of SME's

## Lessons Learned

- Private sector, including SME's, highly interested with a fund implemented by a non-governmental organisation (NGO)
- Fund implementation through local executing agency is important for success.
- NGO type local executing agencies have no red-tape, so that, they can give quick response to the needs of industry.
- Very lean organisational structure supported by a large pool of consultants reduces office cost and service expenditures.
- For LSE's, establishing a revolving fund with medium return period and no interest are accepted.
- Clearly defined role and mechanisms for a local executing agency important for success.
- Tailor-made products and services is more important working with different sectors. (project design, support, guidelines, for procurement, monitoring, reporting and certification)
- Legislative support of government is very beneficial for the successful implementation of a project

With an *innovative implementation procedure*; robust partnership has been build with the World Bank in environmental management and 70% of ODP has been phased out in 7 years & zero ODS consumption has been aimed at the end of 2005.

**Figure 1. TTGV's Procedure in use for the Assessment, Selection and Administration of PODS projects**





**“INNOVATIVE IMPLEMENTATION by TTGV”**

**SENOL ATAMAN**

**Technical Workshop on Concessional Lending**  
**22 July 2002, Montreal**

## Background & Objective

TTGV was founded

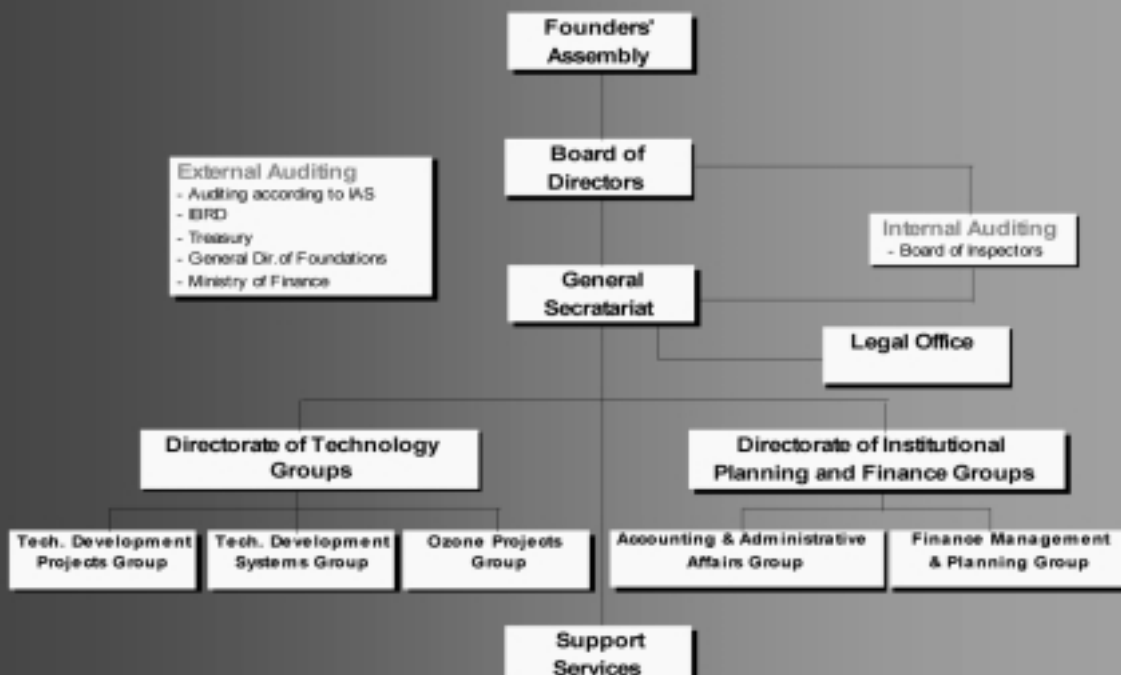
- by the joint efforts of private and public sectors
- on June 1, 1991
- through a Loan Agreement signed between the Republic of Turkey and the World Bank (WB) on April 5, 1991
- to strengthen and contribute to boosting Turkish Industry's competitiveness in global market through technological innovation.



## Structure

- An independent, non-profit organization,
- 6 out of 9 Board members are from industry, 3 members are the presidents of Undersecretariat of Treasury (UT), KOSGEB and TUBITAK (chairman should be from industry),
- Founders include 26 private companies, 6 public institutions, 10 NGOs and 14 individuals,
- Number of permanent staff is 30; a pool of experts with nearly 1,500 people,
- Has an international Advisory Board formed by the experts from the USA, UK, S. Korea, Taiwan and Turkey,
- Independent monitoring and evaluation of activities; auditing according to IAS.

## Organization Chart



## Main Activities & Finance

- Supporting technological product and process innovation projects of the industry
- Stimulating and supporting establishment of technoparks, technology centers and technology-oriented venture capital companies
- Technology support services for SMEs
- Phasing out of ozone-depleting substances (PODS)

### Financing through

- Undersecretariat of Treasury through the resources of the World Bank
- Undersecretariat of Foreign Trade (UFT) through State Budget
- TTGV's own resources



## Technology Project Supports

- Technological innovation projects (**max.50% soft loan**)
  - 287 projects (TTGV support amounts to \$104 million, contribution by the companies \$110 million)
- Technoparks and Technology Centres (**max. 50% soft loan**)
  - Technical assistance on international best practices and business planning for 6 technopark initiatives.
  - \$12 million for two of them.
  - 4 technology centres on R&D, testing, and training for different industrial sectors
- Venture capital (**Equity participation**)
  - A VCC was established with a financial contribution of \$3.4 million. The second one will be established with a \$3.1 million contribution.
- Technology support services (**max.75% grant**)
  - \$3 million for around 1000 SMEs for training and TA



## PODS Project Supports

- Phase out of ozone-depleting substances (**Grant+soft loan**)
  - Projects: 9 refrigeration, 12 foam, 3 MeBr, 3 solvent and 1 Aerosol sectors.
  - \$15.4 Million committed for 27 sub-projects. \$9 Million approved for RSP. Total Budget \$24.4 Million.
  - \$13.4 million has been disbursed for sub-projects
  - 21 completed, 7 in progress
  - Grants: 19 firms, Partial loans: 8 firms
  - 35% is loan, 65% grant of the committed amount.
  - 95% loans paid back up to know. Rest will be paid till 2003
  - RSP project planned \$3.4 million loan \$5.6 million grant basis



## Background-PODS

- 1992-Turkey's Strategy and Action Plan prepared by the WB.
- 1994-1995- OTF Grant Agreements were signed with the WB.
- TTGV-MoE partnership was build; responsibilities were shared.
- The major regulation is the Turkish National Ozone Policy (NOP), which was published in the official gazette by the end of July 1999.
- The NOP actually came into force in 1998, where a quota system for import of ODS and ODS containing equipment was introduced.
- The NOP ban import of ODS and ODS containing equipment by January 1, 2000.
- Exemptions are made for essential use (laboratories) and for servicing of existing ODS containing appliances.



## Responsibilities of TTGV

- To act as a financial intermediary for the disbursement of funds to the single private sector.
- To inform, particularly SME's, about the requirement of phasing out ODS in use, alternative technologies and financial assistance.
- To prepare demonstration projects to assist in providing information on phase-out possibilities.
- To help enterprises prepare investment project for funding from the OTF.
- To review each sub-project's eligibility under the MP.
- To carry out environmental, technical and financial appraisals of each sub-project.
- To supervise and monitor the sub-projects
- To administer the rollover of the loan component of the fund provided to the sub-projects.

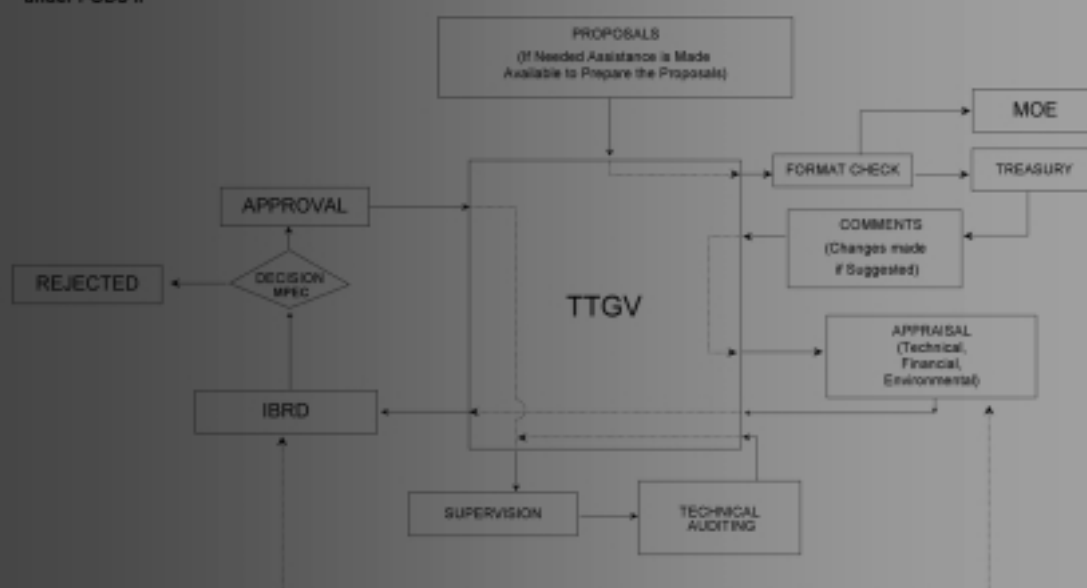
### Extent of Support

Sector	Grant	Loan
Refrigeration/ Air conditioning	Safety, prototype & testing, training costs If project budget < US\$ 100,000 then 100 % grant	Other costs
Foam, solvent, aerosols, fire extinguishing	Cost US\$ 500.000 project costs	Remaining amount

### Reimbursement of Loan

Interest Rate	0%
Currency	US Dollars
Duration	2 years from completion of project
Installments	4 equal installments

TTGV's Procedure in use for the Assessment, Selection and Administration of projects under PODS II



## Key factors for successful implementation

- Expert Evaluation
  - Detailed evaluation of the project by external technical experts (private/university/public)
  - Detailed financial audit of the company by external financial experts
- No-objection by the WB-UFT / Approval by MLF
- Contract Signing
  - Guarantee letter, mortgage, cheque, etc. if needed



## Key factors for successful implementation

- Supervision by
  - TTGV project expert
  - external technical expert
  - Supervision by WB team
- Monthly evaluation of expenditures and disbursement
- Progress reports, Final report
- Repayment period
  - Zero interest rate
  - Long-term period(2-3 years)
  - 1 year grace period if needed
  - Tight follow-up



## Difficulties

- Long evaluation period and process before approval of Fund
- Late decision for approving of Fund
- Unsufficient fund approval for projects
- Unflexibility on the project budget during implementation
- Unsufficient own resources of companies
- Economical problems of the Country
- Lack of qualified personnel and management capacity of SME's



## Lessons Learned (1)

- Private sector, including SME's, highly interested with a fund implemented by a non-governmental organization (NGO)
- Fund implementation through local executing agency is important for success.
- NGO type local executing agencies have no red-tape, so that, they can give quick response to the needs of industry.
- Very lean organizational structure supported by a large pool of consultants reduces office cost and service expenditures.



## Lessons Learned (2)

- Clearly defined role and mechanisms for a local executing agency important for success.
- Tailor-made products and services are important working with different sectors. (project design, support, guidelines, for procurement, monitoring, reporting and certification)
- Legislative support of government is very beneficial for the successful implementation of a project



**In 1997, Turkey received an award from the United Nations for being among 9 countries, out of 49, to most successfully implement the Montreal Protocol.**

**WITH AN INNOVATIVE  
IMPLEMENTATION PROCEDURE**

- Robust partnership has been build with the World Bank in environmental management
- 70% of ODP has been phased out in 7 years & zero ODS consumption has been aimed at the end of 2005



**TTGV**  
TECHNOLOGY DEVELOPMENT FOUNDATION OF TURKEY

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## FIDEICOMISO PARA EL AHORRO DE ENERGÍA ELÉCTRICA MEXICO'S EXPERIENCE ON CHILLERS

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### FOREWORD

In order to present a general outline of the development of this program by FIDE, the origin of this institution, how it is organized, its mission, main projects developed and results obtained, are hereafter summarized.

FIDE was constituted in 1990 as part of the strategy to assure a sufficient and timely supply of electric energy. The constitution of FIDE was possible through an initiative of Comisión Federal de Electricidad (CFE) (demand utility in México), that established it as a private non profit organism. In addition to CFE, the following institutions participate in FIDE: Luz y Fuerza del Centro, (the second utility in Mexico, that provides electricity to the central region of the country), the main industrial, construction and consulting firms, plus manufacturers of electric equipment and some national chambers.

The mission of FIDE's is: To show and promote the overall advantages as well as the economic and social benefits of electric energy saving through actions and specific results, in order to encourage their application.

The actions of FIDE are applied in the main consumer sectors; residential, industrial, commercial, services and municipal.

FIDE programs and projects range from finance for the sale of compact fluorescent lamps in the residential sector, to the promotion and commercialization of high efficiency equipment such as motors, air compressors and lineal T-8 fluorescent lamps; in addition FIDE has undertaken important actions for promotion of electric energy saving, through dissemination of information on labelling standards and educational programs for children.

In the following chart are shown different actions carried out by FIDE and savings obtained.

### Actions Carried Out Up to the First Four Months of 2002

SECTOR/PROGRAM	NUMBER OF ACTIONS	SAVINGS		
		MW	GWh/YEAR	
RESIDENTIAL	ILUMEX	2 454,923	72	137
	CFL'S PILOT PROJECTS	908,643	63	54
	AIR CONDITIONERS	19,600		
	THERMAL INSULATION OF HOUSES	74,033	18	77
	ELECTRICITY AUDITS	10,939	10	28
MICRO AND SMALL COMPANIES	PYME PROJECTS	560	13	14
PROJECTS ON INDUSTRY,	INDUSTRIAL PROJECTS	696	160	776
MUNICIPALITIES, COMMERCES	COMMERCES AND SERVICES PROJECTS	345	26	82
AND SERVICES	MUNICIPAL PROJECTS	201	27	77
SUMMER TIME	APPLIED FROM 1996		908	933
INCENTIVES AND MARKET DEVELOPMENT	CFLS INSTALLED	5 694,237	136	161
	HIGH EFFICIENCY MOTORS	115,936	76	281
	T-8 LAMPS	2 937,703	41	64
	COMPRESSORS	1,109	11	34
AGRICULTURE AND LIVESTOCK	CFLS IN POULTRY FARMS	1 184,000	213	776
	WATER PUMPS FOR AGRICULTURE	12,624		
<b>TOTAL</b>			<b>1,774</b>	<b>3,494</b>

## BACKGROUND OF THE PROGRAM

FIDE was chosen to receive a grant from the Montreal Protocol through the World Bank for development of a "Chiller replacement program", because of its experience in development of projects.

The objective of this pilot program is to demonstrate that chiller substitution is profitable based on savings of electric energy obtained; the goals are: replacement of 10 chillers in Mexico, with an average of 400 kg of CFC's each and to diminish electric energy requirements in kW and power consumption in kWh.

This pilot program is designed for application in the commercial and industrial sectors, the first stage is for one year and the revolving fund will be used for an unlimited period.

The criteria for eligibility are:

- The chiller to be replaced must operate as a primary equipment
- The chiller to be replaced must use R11 or R12 coolant
- The new chiller will have to comply the following conditions:
  - 341 USD/R.T. for chillers  $\leq$  350 R.T.
  - 290 USD/R.T. for chillers  $\geq$  350 R.T.
- Maximum 6 months of installation
- End user pays the difference of equipment cost + complementary actions, because the maximum value is \_ USD \$120,000.00

### Guarantees

- Equipment itself with insurance naming FIDE as beneficiary.
- Loan conditions

20 year old or older chiller	Less than 20 year old chillers
DOLLARS 2%	UDI's 2%
DOLLARS 0%	UDI'S 0%

Investment units to be paid

### Terms of the loan

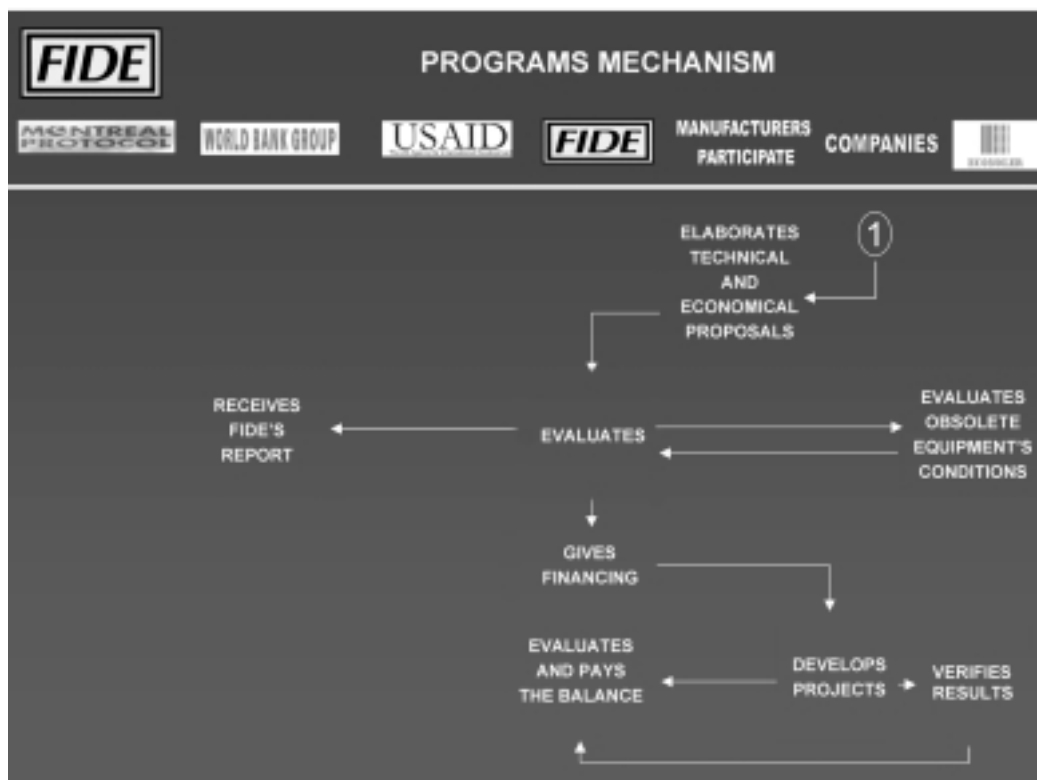
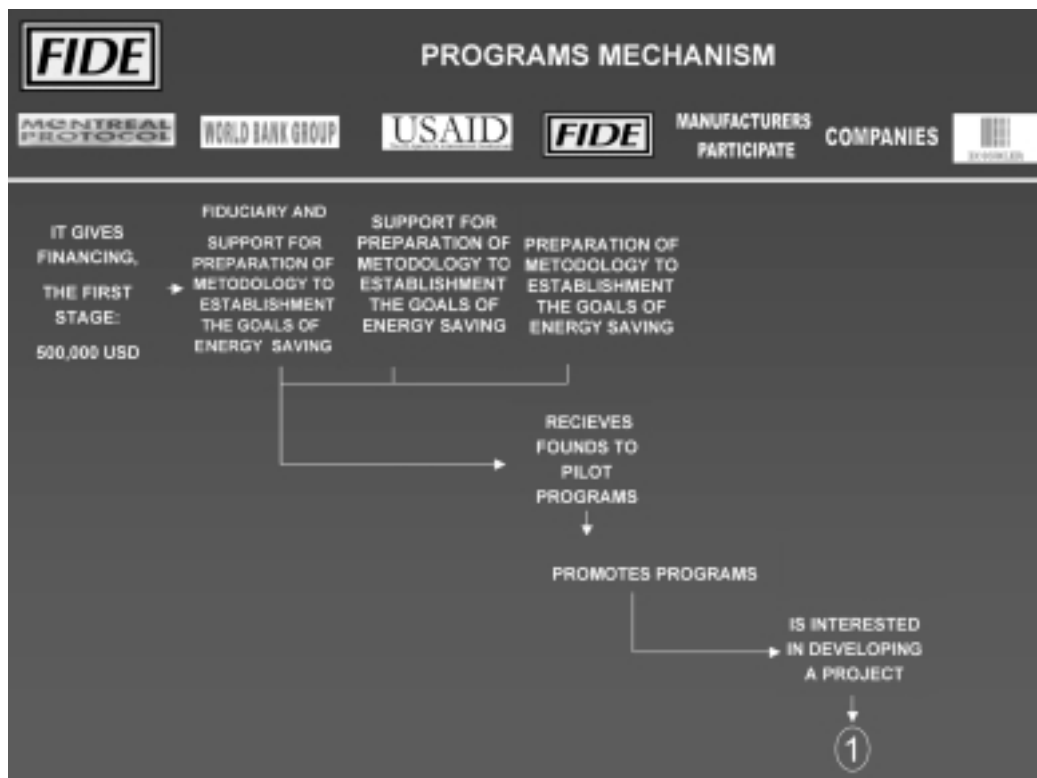
The loans will be paid in three years maximum, including a 6 month grace period in capital and interest.

Expenses to be covered by the end user

- a) Installation, taxes, insurance and freight related to the acquisition of the goods.
- b) The expenses related to the disinstallation of the system substituted.
- c) The differential cost between the new system and the old system, when the new one has more refrigeration capacity (refrigeration tons).
- d) Maintenance expenses for the new equipment.

## IMPLEMENTATION OF THE PROJECT

The following pictures show the mechanism of the program and the different participating agents:



The main element of support in convincing the company to participate in this program is the evaluation of the performance contracted because, if the finished project doesn't produce the energy savings that were offered by the manufacturers, FIDE applies a discount to the manufacturer's invoice and the user receives a discount on his outstanding debt.

## OBSTACLES AND BARRIERS FACED

The main problems to be faced in this program are:

- To convince the manufacturers to establish projects with guaranteed electrical energy savings.
- To convince the end user of the advantages of chiller replacement.
- The authorization process of the loan and the delivery of financial statements
- Little experience in chiller destruction and processing of residuals.
- Problems of manufacturers for application of the methodology to demonstrate savings of electricity.

## LESSONS LEARNED

The program needs to apply new criteria for finance of projects.

- There's no comparison among given projects
- The projects can be presented at any time as long as the funds are available.

Minimum efficiency:

Screw compressors: 0.67 KW/R.T.

Centrifugal compressors 0.64 KW/T.R.

Maximum price of the chiller:

341 USD/R.T. (capacity up to 350 R.T.)

290 USD/R.T. (capacity 350 R.T. and higher)

Maximum execution time:

24 WEEKS (from contracting to chiller startup)

New Financing opportunities with manufacturers

York has given credit to its customer Condominio Acero Monterrey, through its program codorus, in order to install the equipment and pay for the part that was not covered by FIDE.

Trane is interested in starting the "performance contracting", that nowadays is a financial tool in the U.S. Trane Companies.

- In order to make easier the evaluation process, it's necessary to make alliances of energy saving consultants with manufacturers.
- It is required that the finance covers in addition to equipment replacement, shipping, insurance, installation, destruction and CFC's processing.
- To offer financing with constant interest rates, according to the financial expectations.
- To involve the manufacturers in financing projects
- Extend the finance to corporate groups, industries, commercial chains and hotels.

## APPLICABILITY OF THE MEXICAN MODEL TO OTHER COUNTRIES UNDER DEVELOPMENT

- Although Mexico has had considerable development on electric energy saving, the financial conditions are very similar to those of other countries.
- The sale of contracting performance projects with simplified schemes, contributes to encourage companies and organisms to contract chiller replacement.
- The alliances with manufactures are a fundamental strategy to develop this type of programs.



## RESULTS

In the first stage of this program it was possible to finish 10 projects with the following results.

PROJECT	SAVINGS		ECONOMIC SAVINGS	SIMPLE PAYBACK	REFRIGERANT RECOVERED	REFRIGERANT LEAKS AVOIDED
	KW	KWH/YEAR	USD/MONTH	YEARS	KG	KG
La Campiña I y II	97.75	499,500	8,732	1.3	357	360
Cond. Acero Monterrey	131.96	674,292	5,882	1.7	40	1,600
Cancún Palace	223.06	1 953,970	12,014	0.8	502	
Sun Palace I y II	249.15	2 182,511	13,731	0.7	504	1,800
Beach Palace	78.01	683,383	3,433	1.4	251	
CETYS-Universidad	41.97	214,448	4,545	2.2	249	0
ITESM-Campus Monterrey	70.90	362,279	3,571	2.8	345	0
IQUISA	143.54	628,687	4,902	1.7	315	0

## CONCLUSIONS

- In Mexico, close collaboration between World Bank specialists, USAID, manufacturers and FIDE, allowed development of a successful implementation mechanism.
- The great potential of this program has been demonstrated since the demand of projects has surpassed available finance.
- To promote the participation of more countries and users, would be convenient, now that the Montreal Protocol recognizes the success of these projects.



**FIDEICOMISO PARA EL AHORRO DE ENERGIA ELECTRICA**



**TECHNICAL WORKSHOP ON CONCESSIONAL LENDING**  
22 JULY 2002, MONTREAL CANADA

**“MEXICO’S EXPERIENCE FROM CHILLERS REPLACEMENT”**

**JOSE ANTONIO URTEAGA DUFOUR**  
PROGRAM DIRECTOR  
[jose.urteaga@cfe.gob.mx](mailto:jose.urteaga@cfe.gob.mx)























IN ORDER TO ASSURE ELECTRIC ENERGY SUPPLY STARTING IN 1990, BASIC STRATEGIES WERE APPLIED:



1st

ACCELERATION OF THE PROCESS OF CONSTRUCTION AND COMING IN LINE OF NEW GENERATING UNITS



2d

MODIFICATION OF THE PUBLIC SERVICE LAW OF ELECTRIC ENERGY

3d

PROMOTION OF SAVING AND EFFICIENT USE OF ELECTRIC ENERGY



## ORIGIN AND ORGANIZATION OF FIDE

FIDE IS A PRIVATE NON PROFIT TRUST FUND

CREATION OF FIDE AS INITIATIVE OF:



THE FEDERAL ELECTRICITY COMMISSION



CENTRAL LIGHT AND POWER



ELECTRIC WORKERS' UNION OF THE MEXICAN REPUBLIC



MAIN INDUSTRY AND CONSTRUCTION CHAMBERS, CONSULTANT FIRMS AND ELECTRIC EQUIPMENT MANUFACTURERS



## FIDE'S MISSION

TO SHOW AND PROMOTE THE OVERALL ADVANTAGES AS WELL AS ECONOMIC AND SOCIAL BENEFITS OF ELECTRIC ENERGY SAVING THROUGH ACTIONS AND SPECIFIC RESULTS, IN ORDER TO ENCOURAGE THEIR APPLICATION BY END USERS



## CARRIED OUT ACTIONS UNTIL THE FIRST QUARTER OF 2002

SECTOR/ PROGRAM	NUMBER OF ACTIONS		SAVING	
			MW	GWh/AÑO
RESIDENTIAL	ILUMEX	2'454,923	72	137
	PROJECTS PILOT CFL'S	908,643	63	54
	AIR CONDITIONING EQUIPMENTS	19,600		
	HOUSES WITH THERMAL INSULATION	74,033	18	77
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	COMMERCES AND SERVICES PROJECTS	345	26	82
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	WATER PUMPS FOR AGRICULTURE	12,624		
TOTAL			1,774	3,494



## COMPLEMENTARY ACTIONS

- MORE THAN 50 MILLION DIFFERENTS PRINTED AND DISTRIBUTED MATERIALS, BETWEEN ISSUES PUBLICATIONS, FASCICULES, CASE SPECIFIC AND DIVERSE PAMPHLETS.
- THROUGH PROGRAM EDUCAREE THERE HAVE FORMED 24,938 TEACHERS AND MORE THAN 1 MILLION STUDENTS, IN 20 ORGANIZATIONS OF THE COUNTRY.
- 25 EXHIBITIONS IN MUSEUMS AND SCIENCE AND TECHNOLOGY CENTERS.
- 950 COURSES DEVELOPED
- MORE THAN 20 THOUSAND ELEMENTS TRAINED.
- 2.041 MODELS OF EQUIPMENTS LABELED WIHT "SELLO FIDE"
- TECHNICAL ASSISTANCE HAS BEEN OFFERED TO DESIGN NATIONAL PROGRAMS OF ENERGY SAVING TO:  
COSTA RICA, EL SALVADOR, ARGENTINA, COLOMBIA, PERU, PANAMA AND THAILAND





## BACKGROUND

FIDE WAS CHOSE TO RECIEVE A GRANT FROM THE MONTREAL PROTOCOL THROUGH THE WORLD BANK TO DEVELOP A "CHILLER'S REPLACEMENT PROGRAM", BECAUSE ITS EXPERIENCE ON DEVELOPING PROJECTS

### INITIAL AMOUNT OF THE ROTATING FUND

1 <sup>st</sup> stage		PURCHASE OF EQUIPMENT	OPTIMIZATION OF SYSTEM*	TOTAL
WORL BANK	USD	500,000	0	500,000
FIDE	USD	500,000	200,000	700,000
Total	USD	1,000,000	200,000	1,200,000

\* THE MEASURES TO CONSIDER CAN BE INVERTERS CONTROL FOR AUXILIARY PUMPS, INSULATING FOR WINDOWS, AUTOMATIC CONTROL SYSTEMS, EFFICIENT LIGHTING AND THERMAL INSULATION, THEY DON'T HAVE EXCEED MORE THAN 20% THE CHILLER'S VALUE

MONTREAL  
PROTOCOL

THE WORLD BANK GROUP

A World Free of Poverty



## OBJECTIVE

DEMONSTRATE THAT CHILLERS' SUBSTITUTION IS PROFITABLE WITH BASE ON THE OBTAINED SAVINGS OF ELECTRIC ENERGY

REPLACING 10 CHILLERS  
IN MEXICO, WITH  
400 CFC'S KG  
AVERAGE EACH

GOALS

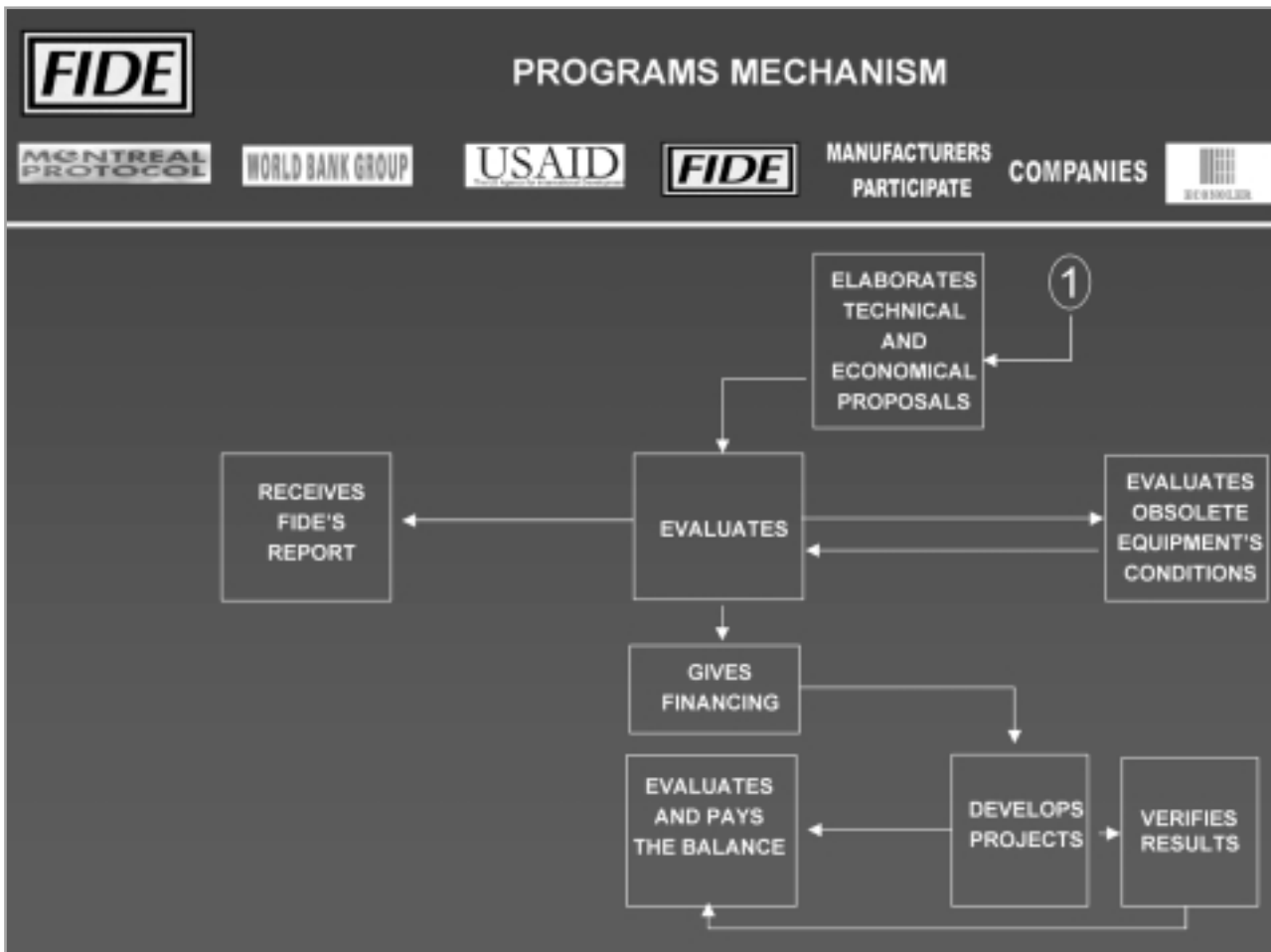
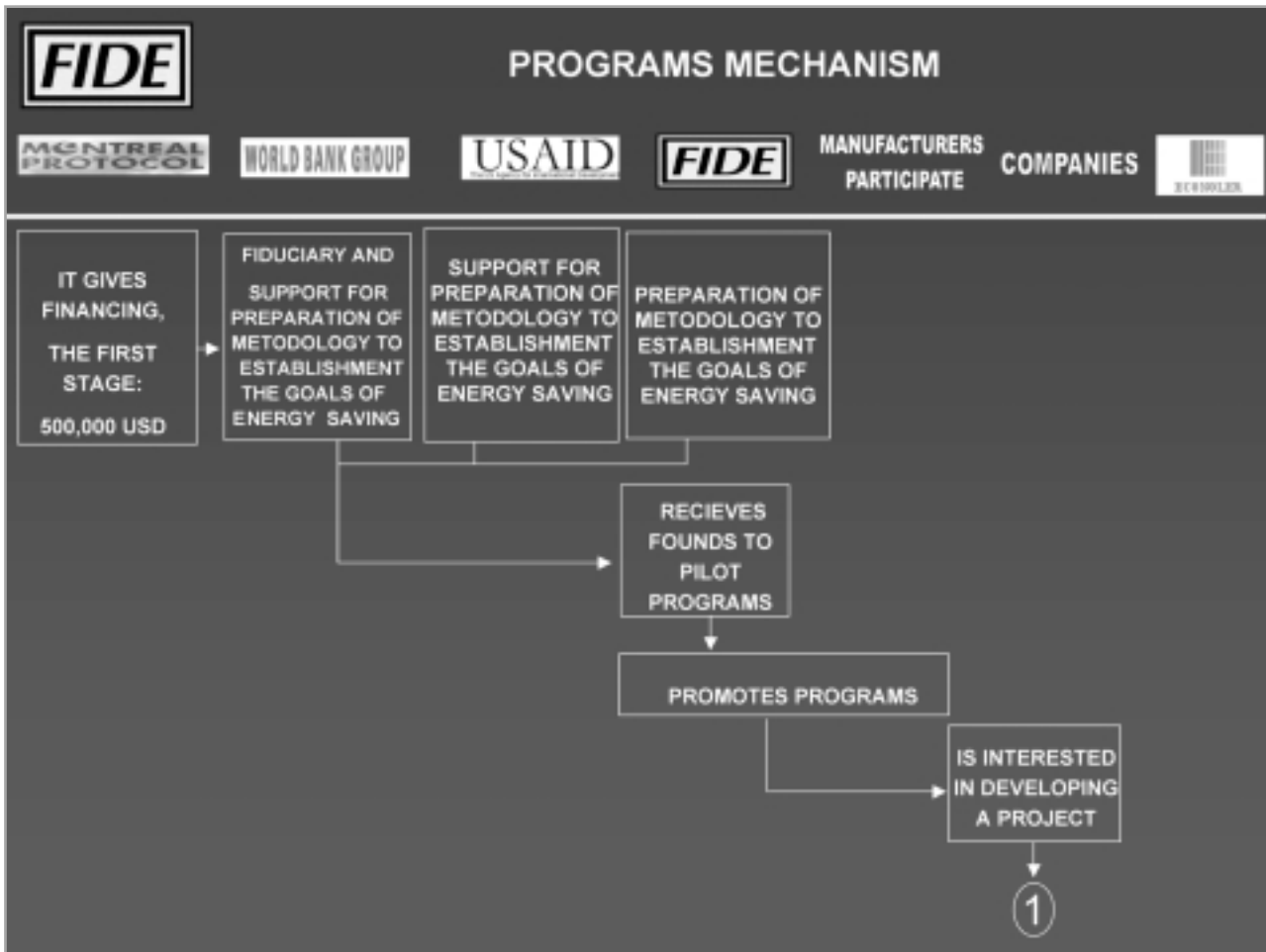
DECREASE ELECTRIC  
ENERGY  
REQUIREMENTS IN KW  
AND POWER  
CONSUMPTION  
IN KWH

MONTREAL  
PROTOCOL

THE WORLD BANK GROUP

A World Free of Poverty







## ELEGIBILITY CRITERIA

- THE CHILLER TO REPLACE MUST OPERATE AS A PRIMARY EQUIPMENT
- THE CHILLER TO REPLACE MUST USE R11 OR R12 COOLANT
- THE NEW CHILLER HAS TO COMPLY THE NEXT CONDITIONS:  
341 USD/T.R. FOR CHILLERS  $\leq$  350 T.R.  
290 USD/T.R. FOR CHILLERS  $\geq$  350 T.R.
- MAXIMUM 6 MONTHS OF INSTALATION
- THE END USER PAYS THE DIFFERENCES OF EQUIPMENT COST + COMPLEMENTARY ACTIONS = USD \$120,000.00

## GUARANTEES

- EQUIPMENT ITSELF WITH INSURANCE IN FAVOR OF FIDE

## LOAN CONDITIONS

20 YEARS OLD CHILLER OR OLDER	LESS THAN 20 YEARS OLD CHILLERS
DOLLARS 2%	DOLLARS 0%
UDI'S 2%	UDI'S 0%

INVESTMENT UNITS TO BE COVER  
THE INFLATION

## TERM OF THE LOAN

THE LOANS WILL BE PAID IN THREE YEARS AS A MAXIMUM, INCLUDING A 6 MONTH GRACE PERIOD IN CAPITAL AND INTERESTS.



## EXPENSES TO BE COVERED BY THE END USER.

- A) INSTALLATION, TAXES, INSURANCE AND FREIGHTS RELATED TO THE ACQUISITION OF THE GOODS.
  - B) THE EXPENSES RELATED TO THE UNINSTALLATION OF THE SUBSTITUTED SYSTEM.
- THE DIFFERENTIAL COST BETWEEN THE NEW SYSTEM AND THE OLD SYSTEM, WHEN THE NEW ONE HAS MORE REFRIGERATION CAPACITY (REFRIGERATION TONS),
- D) MAINTENANCE EXPENSES FOR THE NEW EQUIPMENTS.



**MANUFACTURERS PARTICIPATING**

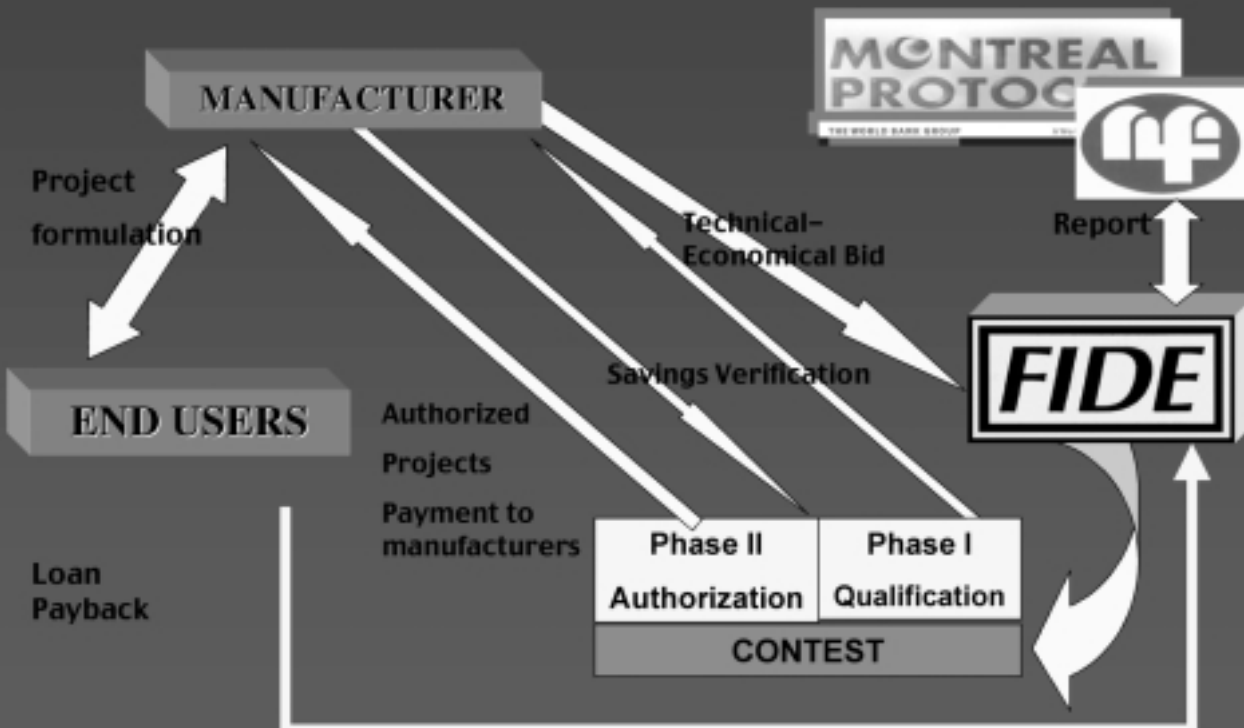


THE WORLD BANK GROUP

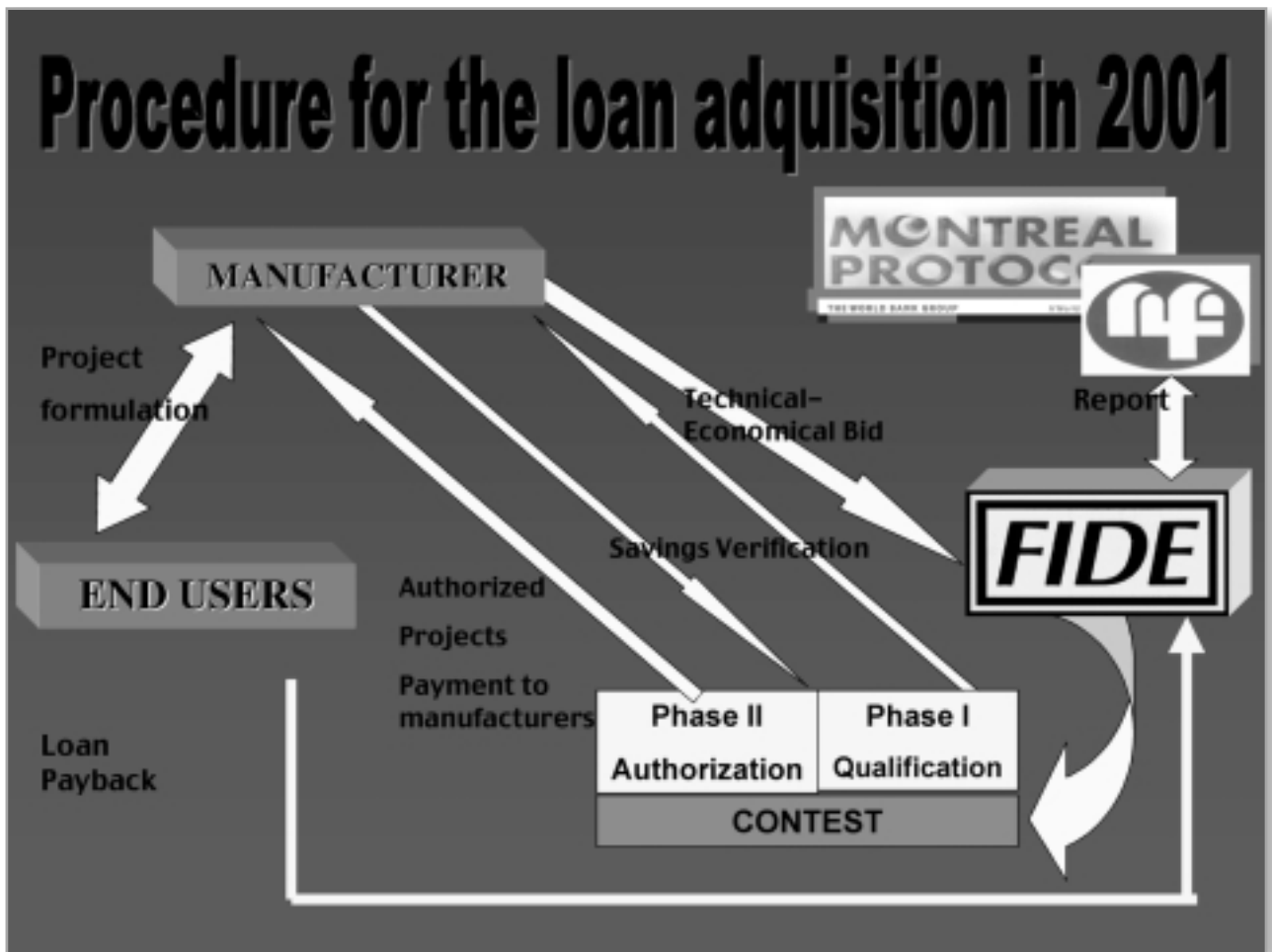
A World Free of Poverty



# Procedure for the loan acquisition in 2001







## **FIDE** EXAMPLES OF PAYBACK IN 2001 PROJECTS

BIUILDING, ADMINISTRADORA LA CAMPIÑA 1.9 YEARS  
 BIUILDING, CONDOMINIO ACERO MONTERREY 2.8 YEARS  
 HOTEL, SUN PALACE 1 1.5 YEARS  
 HOTEL, SUN PALACE 2 1.3 YEARS  
 HOTEL, BEACH PALACE 2.6 YEARS  
 HOTEL, CANCUN PALACE 1.5 YEARS  
 UNIVERSITY, CETYS 2.9 YEARS  
 UNIVERSITY, ITESM 2.8 YEARS  
 MALL, LA CAMPIÑA 1 1.9 YEARS  
 MALL, LA CAMPIÑA 2 1.9 YEARS  
 INDUSTRY, IQUISA 3.0 YEARS

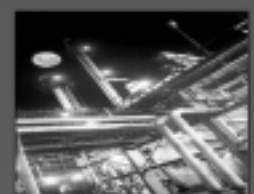
**PAY BACK OF PROGRAM  
FROM 1.5 TO 3 YEARS**



**HOTELS**



**COMMERCIAL &  
EDUCATIVE CENTRES**



**INDUSTRIAL**



## RESULTS OF THE PROGRAM IN 2001

**2,563 Kg. HFC's Refrigerant Recovered**  
**3,760 Kg. HFC's Refrigerant leaks avoided**  
**1'073,000 KW in demand avoided**  
**780,885 KWh avoided**



**MONTREAL  
PROTOCOL**

THE WORLD BANK GROUP

A World Free of Poverty



## NEW CRITERIA FOR FINANCING PROJECTS

- THERES NO COMPARATION AMONG THE PROJECTS GIVING FINANCING
- THE PROJECTS CAN BE PRESENTED AT ANY TIME AS LONG AS THE FUNDS ARE AVAILABLE.

### MINIMUM EFFICIENCY:

SCREW COMPRESSORS: 0.67 KW/R.T.  
 CENTRIFUGAL COMPRESSORS 0.64 KW/R.T.

### MAXIMUM PRICE OF THE CHILLER:

341 USD/R.T. (CAPACITY UP TO 350 R.T.)  
 290 USD/R.T. (CAPACITY 350 R.T. AND HIGHER)

### MAXIMUM EXECUTION TIME:

24 WEEKS (FROM CONTRACTING TO CHILLER STARTUP)





## CONCLUSIONS

- IN MEXICO, NARROW COLLABORATION WITH WORLD BANK SPECIALISTS, USAID, MANUFACTURES AND FIDE, ALLOWED TO DEVELOP A SUCCESSFUL IMPLEMENTATION MECHANISM.
- A GREAT POTENTIAL OF THIS PROGRAM HAS BEEN DEMONSTRATED SINCE THE DEMAND OF PROJECTS HAS SURPASSED THE SUPPLY OF FINANCING
- TO PROMOTE THE PARTICIPATION OF MORE COUNTRIES AND USERS, WOULD BE SO CONVENIENT THAT MONTREAL PROTOCOL RECOGNIZES SUCCESSFUL PROJECTS

**MONTREAL  
PROTOCOL**

THE WORLD BANK GROUP

A World Free of Poverty



[www.fide.org.mx](http://www.fide.org.mx)

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## FRANCE



- **French Bilateral Fund since 1995**
  - **About Euro 17 millions per year,**
  - **Managed by a Steering Committee composed of:**
    - **Ministry of Finances (Chair),**
    - **Ministry in charge of Environment,**
    - **Ministry in charge of Foreign Affairs,**
    - **French Development Agency**
  - **Assisted by a Advisory Technical and Scientific Group**



## TOPICS

- **MAIN TOPICS**
  - **BIODIVERSITY,**
  - **CLIMATE CHANGE,**
  - **INTERNATIONAL PROTECTION WATER**
- **ADDITIONAL ACTIVITIES**
  - **OZONE PROTECTION LAYER,**
  - **JOINT IMPLEMENTATION AND CLEAN DEVELOPMENT MECHANISM**
- **UNDER CONSIDERATION:**
  - **PERSISTANT ORGANIC POLLUTANT**



## AFD EXPERIENCE

- **TOTAL FUNDING : EUR 1 Billion,**
- **EUR 230M from Government,**
- **EUR 770M from financial market,**
- **EUR 600M for Developing Countries,**
- **EUR 150 M ON GRANT BASIS,**
- **EUR 450 M ON CL BASIS**



## **Energy efficiency in the domestic refrigeration sector in APT**

- **FINDINGS,**
- **BARRIERS,**
- **PROJECT DESIGN,**
- **IMPLEMENTATION ARRANGEMENT**
- **LESSONS LEARNT**



## **FINDINGS**

- **ELECTRICITY POWER PRODUCED MAINLY BY ELECTRICITY GENERATORS IN REMOTE AREAS,**
- **USE OF CFC BASED LARGE REFRIGERATORS (US STANDARD) WITH POOR ENERGY EFFICIENCY,**
- **UP TO 50% HOUSEHOLD INCOME USED FOR ELECTRICITY BILL,**
- **FUEL BILL REPRESENTS A HEAVY CHARGE FOR THE GOVERNEMENT BUDGET**



## BARRIERS

- LACK OF AWARENESS AMONG POPULATION,
- NO NATIONAL STANDARD EXISTING,
- INCREMENTAL COSTS OF NEW EQUIPMENT,
- IMPROVMENT OF TECHNCIANS WITH RESPECT TO ENGERGY AND ODS ISSUES



## PROJECT DESIGN

- MIX OF TECHNICAL AND FINANCIAL COMPONENTS
- INCREMENTAL COST FOR CONSUMMERS BORN BY A FGEF GRANT THROUGH THE DISTRIBUTION AND/OR COMMERCIAL BANK,
- 20 000 UNITS (Class A and B according to EU standard and using HC) GRANTED
- ASSISTANCE FOR A PROGRAM OF AWARENESS AND INFORMATION FOR GENERAL PUBLIC,



## PROJECT DESIGN (continued)

- ASSISTANCE IN IMPROVING EXISTING RULES TO ENCOURAGE ENERGY EFFICIENCY,
- ASSISTANCE IN SETTING UP A PALESTINIAN DEPARTMENT IN CHARGE OF ENERGY STANDARDIZATION IN REFRIGERATION SECTOR,
- PROMOTION OF BETTER PRACTICES IN REFRIGERATION SERVICING SECTOR



## PROJECT IMPLEMENTATION ARRANGEMENT

- MAIN PALESTINIAN ORGANIZATIONS:
  - MINISTRY OF PLANNING AND INTERNATIONAL COOPERATION,
  - PALESTINIAN ENERGY COMMITTEE: ONG,
  - PALESTINIAN STANDARD ORGANIZATION
  - CAIRO-AMMAN BANK,
  - PALESTINIAN ENERGY AUTHORITY
  - REFRIGERATION SERVICING SECTOR



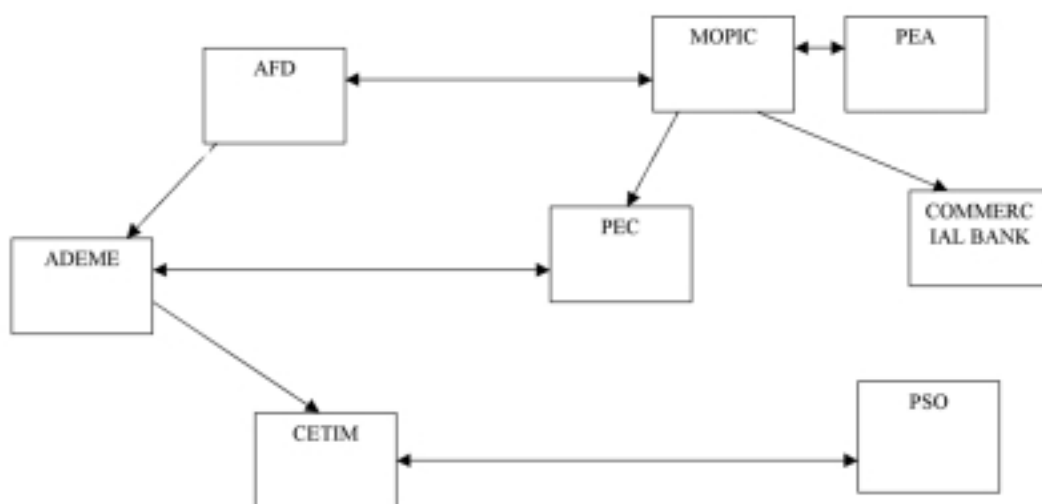


## PROJECT IMPLEMENTATION ARRANGEMENT (continued)

- MAIN FRENCH ORGANIZATIONS:
  - SPONSOR OF THE PROJECT : MINISTRY OF ECOLOGY AND SUSTAINABLE DEVELOPMENT,
  - IMPLEMENTING AGENCY : AFD
  - ADEME : IN CHARGE OF ENVIRONMENT AND ENERGY,
  - CETIM : TECHNICAL CENTER OF EXPERTISE ASSISTING INDUSTRIES, INCLUDING REFRIGERATION INDUSTRY



## PROJECT IMPLEMENTATION ARRANGEMENT (continued)





## LESSONS LEARNT

- ASSESSEMENT OF BENEFITS
- FINANCING TOOLS TO BE CONSIDERED
- IMPLEMENTATION ARRANGEMENT
- SHOULD BE LIMITED : FIRST COME FIRST SERVED

## **B. SESSION 2: CASE STUDIES IN AREAS OTHER THAN OZONE DEPLETING SUBSTANCES**

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### **EXTENDING THE FRONTIERS OF MICROFINANCE Grameen Bank Experience with Microcredit**

**M. Khalid Shams**

Grameen Bank

#### **ENSURING POOR PEOPLE'S RIGHT TO CREDIT**

Providing access to credit without any collateral can be a powerful and cost effective weapon to fight poverty. Grameen Bank, however, is not about concessional lending at all; rather it is about ensuring poor people's basic right to credit. Since 1976, the bank has been directly concerned with financing micro-enterprises in the rural areas of Bangladesh. After pilot testing successfully microlending programs targeted exclusively at the rural poor, it was established as a fullfledged bank under a special law passed by the Parliament in 1983. Since then, it has developed a unique banking system that provides credit to the bottom poor in the villages of Bangladesh and help them move out of poverty. Grameen today is not only reaching out to more than two million rural customers, but as pointed out by a World Bank study, it is a financially strong and sustainable institution. Many of its branches have already broken even and are now earning enough to meet all costs.

Most important of all, the bank has acquired a strong institutional identity. The bank is today owned by the borrowers themselves, ninety five percent of whom are women from the poorest households in rural Bangladesh. Grameen members have bought up shares worth two dollars each. Their elected representatives make up majority of the board of directors who run the bank. It has gradually developed a very big lending programme that caters to various credit needs of a very special, but a largely dispersed clientele. It gives millions of small loans every year, without any collateral, to its borrowers for self chosen investments that help to quickly raise their income. The borrowers have invested in many different types of household enterprises ranging from paddy husking, to modern technology based business operations.

#### **PRO POOR LOAN PORTFOLIO**

Grameen Bank has over the years evolved a diversified loan portfolio to meet the growing credit needs of its borrowers. These loans enable the borrowers to invest in assets that can quickly raise their income, through self employment and business activities that will involve other family members as well. First, the most important credit window that has been opened is the *basic loan*. It can be of varying duration, ranging from three months to three years. The amount of weekly repayment can vary during the loan period according to the seasonal income of the rural customers. If the repayment is on time, the borrower can expect to get a bigger loan at the end of the year. Second, the *flexible loan* has been introduced for borrowers who may face temporary difficulties due to a disaster or illness in the family. The borrower, having started with a *basic loan*, may renegotiate the contract, when there is a crisis to cope with. And the poor have to cope with many risks, including disasters, some natural and some that are man made in our turbulent society. The flexible loan offers a more realistic and easier repayment schedule. Once the difficulty has been overcome and the loan repaid, the borrower moves back to the basic loan. A third major window of Grameen is the *housing loan* which provides the much needed financing for building a new and safe shelter for the rural poor who live in dilapidated homes. A new house, built with reinforced concrete pillars, a sanitary latrine and access to safe drinking water, brings about a qualitative change in the life of the rural poor. The new house is also a place of work, a place of storage, and a shelter that is conducive to good health and hygiene. Fourthly, Grameen has also introduced *special project loans* for bigger investments, for more mature borrowers who can scale up their business operations. This has usually taken the form of equipment leasing for the more successful borrowers, enabling them to invest in new technologies. Small irrigation pumps, power tillers, rice mills, portable generators, refrigerators, washing machines and now even mobile phones, have proved to be very popular investments.

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Until April, 2002, Grameen Bank has disbursed more than US\$ 3.61 billion as loans on a cumulative basis. Until then the Grameen borrowers have repaid to the bank US\$ 3.29 billion dollars. This is by any account, an extraordinary repayment record, while the conventional banks in Bangladesh that lent to the rich, till today remain burdened with very big defaults and non-performing assets. An update on Grameen's credit operations is given at Appendix-A.

## THE BASIC HYPOTHESIS

Why has Grameen's credit delivery system succeeded in reaching the bottom poor considered to be the untouchables of the banking world? How did Grameen manage to recover such large volumes of loans in a society that is plagued with a default culture? The reasons are not very hard to establish, because Grameen's operating system is now well defined and well documented. It is easy to understand and can be quickly implemented. The primary hypothesis or the starting assumption is that each human being, however poor, would have the essential enterprise as well as some productive skills to ensure his or her survival. He or she would have the entrepreneurial capacity as well as the skills for producing goods and services for which there is a demand in the locality. What is urgently required is a credit delivery system that provides the poor with easy access to the much needed financial resources. The traditional banks have altogether failed to provide the poor with such an access. Hence for Grameen, access to credit is the most fundamental of all human rights – one can meet the other basic needs like food, shelter, schooling etc, if one has ready access to credit.

## FEATURES OF ESSENTIAL GRAMEEN

The principal features of Grameen's credit delivery system are the following:

- **exclusive targeting** of the bottom poor, to fully capitalise the productive potential of very large numbers of poor people. Priority is therefore, given to women from the poorest households, representing the most vulnerable segment of our society;
- **organisation of borrowers** into small homogeneous credit receiving groups and building group solidarity through a participatory process. This ensures a self supervised credit system;
- **loan conditionalities are made particularly suitable for the poor** i.e. very small loans without collateral, payable in easy weekly installments; timely but regular repayment by the borrowers creates entitlement for subsequent loans;
- **strict credit discipline is enforced through peer group pressure** and close supervision;
- **realistic interest rates** are charged to ensure a financially viable system that can meet the cost of funds as well as all other operational expenses;
- **compulsory and optional saving schemes** which help mobilise individual savings and at the same time enable the borrowers to cope with risks to which the poor are particularly vulnerable i. e. illness in the family, a natural disaster like the flood, which can quickly destroy their fragile asset base.
- **a social development mandate** as reflected in Grameen's *Sixteen Decisions*, which urge the borrowers to meet basic needs like sanitation, housing, healthcare, nutrition and children's education. These decisions which were formulated by the borrowers' representatives themselves are shown in Appendix-C.

## HEDGING RISKS THROUGH SAVINGS

Grameen has from the very outset stressed the need for mobilisation of own savings by its borrowers to meet not only the funding requirements of the bank, but also for promoting group solidarity and social security. A number of savings schemes have been introduced. Every member has to save on a weekly basis, which is deposited into the personal account. Each borrower member must also make compulsory contributions amounting to 5% of the loan amount, half of which goes into a special savings fund, the remaining half is deposited into the personal savings account which is at the disposal of the individual. However, funds deposited in the special savings are allocated for purchase of shares, on which Grameen Bank pays 8.5 percent guaranteed return. This is an in built device to expand the equity base of Grameen

Bank which no longer depends on any donor assistance. Still another very attractive instrument for savings by borrowers is the *Grameen Pension Scheme* which has greatly enhanced the financial resilience of the bank. It is obligatory for all basic loanees with loans above Tk5000, to contribute a minimum of Tk50 every month to the pension fund, which will ensure close to 90% return on the deposit after ten years. Many borrowers find it so attractive that they have opened pension accounts with much bigger monthly deposits. Many Grameen Bank branches have now the capacity to expand their lending operations with savings mobilised from within the local community and from their own customers. At the end of April 2002, total amount of savings accumulated at the branch level would account for 67% of the outstanding loans and this ratio will continue to rise in the near future.

## REPLICABILITY OF ESSENTIAL GRAMEEN

After successful pilot testing, Grameen's microcredit programme expanded rapidly during the 80s and the 90s all over Bangladesh (see Appendix-B). Grameen's experience has clearly demonstrated that micro-enterprises, often euphemistically called the informal sector by economists, donors and policy makers, have a tremendous potential for growth. They can very quickly alleviate poverty, rapidly raise income, savings and investments by the targeted clientele and most important of all, initiate a process of self reliant and sustainable development. It is also evident that financing modalities of microenterprises would be quite different from the more conventional small and medium enterprises. Grameen Bank has gradually designed and developed a credit delivery system which is cost effective and easy to replicate. **Grameen Trust** set up at the initiative of Grameen Bank, has been entrusted with the task of supporting the growing global network of projects, trying out the essential Grameen approach to microcredit that aims at alleviation of poverty. As many as 105 start up projects in such diverse socio-economic milieu as Bolivia, China, India, Indonesia, Lesotho, Malaysia, Mexico, Nepal, Nigeria, Philippines, Tanzania and Vietnam, have now received technical assistance as well as small amounts of seed capital from **Grameen Trust**. These microcredit initiatives at the end of November, 2001, have already disbursed more than 309 million US dollars amongst 883,000 borrowers, with average repayment rate of 95 percent. There are hundreds of similar credit programmes both in developing as well as the developed countries which have incorporated the essential features of Grameen with their own funding. Some like the **Amanah Ikhtiar Malaysia**, are large national programmes and have already created a big impact in terms of national efforts towards poverty alleviation. The **Microcredit Summit** held in February in 1997 in Washington DC, has launched a global campaign aiming to reach 100 million households, specially the women of these families, with credit by the year 2005. They represent roughly one half of the world's poor, majority of whom are living in densely populated countries of south and south east Asia.

## NEED FOR NEW FINANCIAL INTERMEDIARIES

What is the main impediment against rapid expansion of microcredit programme globally? There is a growing consensus that a new generation of financial intermediaries would be required firstly, to attract large amounts of private funds that are available currently in the industrial economies, or even within the financial institutions of developing countries themselves. Secondly, they need to meet the very small investment needs of millions of micro-enterprises, dispersed in towns and villages of developing and developed countries alike. New financial management systems have to be developed that can cost effectively, "link savings, credit and social progress through a radically innovative instrument, while targeting those far beyond the frontiers of formal finance, primarily the women from the poorest households." Financial intermediation at three different levels could be envisaged:

**First**, *non-government organisations* as well as *community based savings and loans associations, credit unions and co-operatives*, funded by the existing financial institutions, could retail credit and related financial services to the rural and urban poor. But the existing institutions would require a complete reorientation to understand the new credit delivery system; they would need to build up professionally trained staff who can deliver. NGOs have already demonstrated their comparative advantage in providing such services door to door. However, the task will be to design and develop specialised delivery systems capable of reaching the targeted clientele. In particular, they need access to low cost funds to meet start up as well as the scaling up costs.

**Second**, *specialised financial institutions* like **Grameen Trust**, clearly have a role to play in providing the much needed start up financial support to NGOs and other microcredit programmes. CASHPOR in Asia and the Pacific region is another example of a regional network that has provided valuable financial and technical support to microcredit initiatives in Asian countries. PKSF in Bangladesh, is still another example of a wholesale fund set up at government initiative that provides large amount of funds to microfinance programmes in particular the NGOs at the grassroots. But these wholesale financial institutions themselves require low cost loan funds, which are difficult to find at present.

**Third**, at *regional and global levels new intermediaries of financial services* are needed to mobilise funds to lend to the national institutions for micro-enterprise development. As the experience shows, the initial requirement is in terms of either equity financing or soft loans. Credit costs can be substantially reduced if low cost funds from the World Bank, the Asian Development Bank, the African Development Bank or other donors, could be blended with funds obtained from the market. Private social investors could also be attracted by (a) the assured repayment of their loans because of high repayment performance; (b) close to market rates of interest; (c) potential for rapid scaling up of investments and, (d) the social development objectives embodied in the micro-enterprise ventures i.e. poverty alleviation, protection of environment.

## **GOVERNMENT ROLE IS STILL VITAL**

In spite of marketisation of the economies, governments would still have a significant role to play in supporting the development of micro-enterprises. It would require decisive shifts in government's macro policies that can provide direct and very strong support to the hitherto untouchables of the financial world. This would also require a thorough reappraisal of all the existing government policies, the fiscal and monetary policies, the trade and industrial policies, the credit policies, the various sectoral policies, to see which ones adversely affect the enterprises of the poor and which ones support or reinforce them. New policies have to be framed and new incentives have to be provided to the financial institutions so that they are strongly encouraged to initiate microcredit operations targeting on the poor and the specially disadvantaged. This would involve deregulation of interest rates so that financial intermediaries are able to cover all costs and become institutionally sustainable in small loans operations. Still another direct incentive would be for the government to provide guarantees to the micro-lending programmes at least during the start up period. New performance as well as accounting standards would have to be established to determine eligibility of financial intermediaries to access government owned or other private funds. Governments should also encourage linkages between the formal financial institutions and NGOs in leveraged bank-NGO-client credit lines, in joint training and in other collaborations that mobilise bank resources for micro-entrepreneurs.

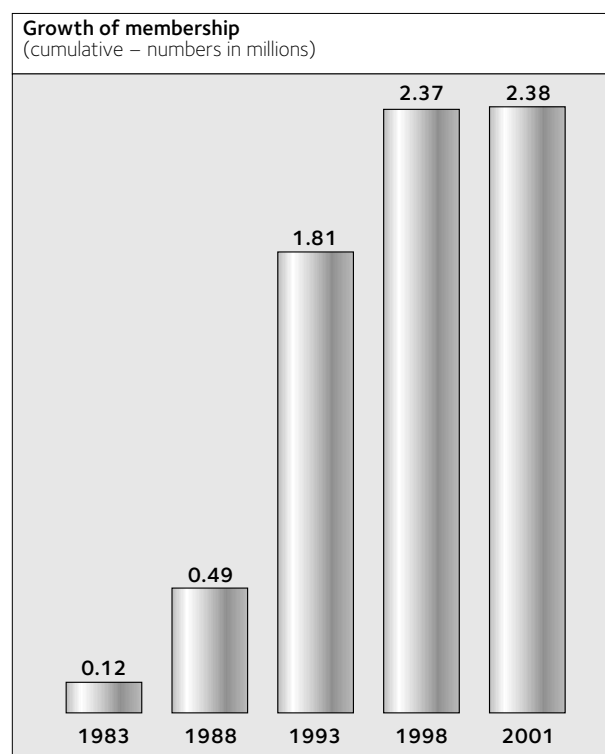
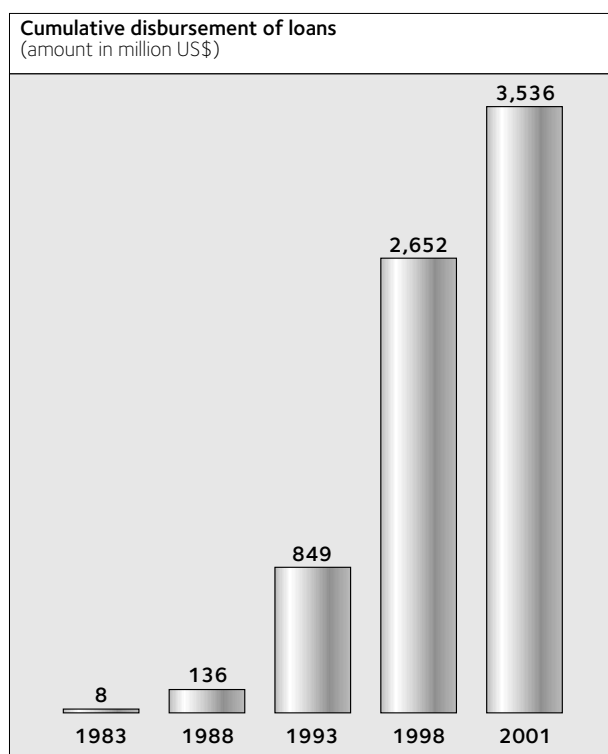
## **A NEW VISION OF TOMORROW'S WORLD**

Grameen believes in a bold vision of our common future which can effectively overcome poverty – a problem that is the root cause of almost every other problem which we face in our societies today. We now know for certain that poverty largely accounts for the hunger and malnutrition which still haunt hundreds of millions of people, in particular women and children, around the world; whether it is illiteracy, disease and hunger, burden of overpopulation or degradation of the earth's fragile environment, poverty remains the overarching cause. Grameen's experience to date reinforces the fundamental hypothesis that by harnessing the enterprise of even the poorest of the poor, it is possible to find a cost effective solution to this age old problem. The easiest way to accomplish this is to provide the poor with easy access to credit, which has been hitherto denied to him. As Professor Yunus who founded the Grameen Bank puts it so succinctly, the poor had remained in poverty, not because they wanted to remain that way, but because of the many barriers which have been deliberately built around them by those who benefited from poverty. The task is now for us to decide whether we would like to break down these barriers and devise and develop new institutions that will enable the poor to finally come out of poverty and attain economic and social development on a sustainable basis.

## APPENDIX A: GRAMEEN BANK UPDATE: APRIL, 2002

Item	Nos.	Million (Taka)	Million (US\$)
1. Number of Branches	1,175		
2. Number of Villages	40,541		
3. Number of Centres	68,923		
4. Number of Members	2,367,460		
Women	2,247,119		
Men	1,20,341		
5. Cumulative number of houses built with Grameen housing loans	5,48,225		
6. Cumulative amount disbursed		158,840.32	3,618.92
7. Amount disbursed during this month		1,161.47	20.06
8. Cumulative amount of Housing Loans disbursed		7,594.19	188.33
9. Total savings(balance)		4,329.91	74.78

## APPENDIX B



## APPENDIX C: THE SIXTEEN DECISIONS

1. We shall follow and advance the four principles of Grameen Bank – Discipline, Unity, Courage and Hard work – in all walks of our lives.
2. Prosperity we shall bring to our families.
3. We shall not live in dilapidated house. We shall repair our houses and work towards constructing new houses at the earliest.
4. We shall grow vegetables all the year round. We shall eat plenty of them and sell the surplus.
5. During the plantation seasons, we shall plant as many seedlings as possible.
6. We shall plan to keep our families small. We shall minimize our expenditures. We shall look after our health.
7. We shall educate our children and ensure that we can earn to pay for their education.

8. We shall always keep our children and the environment clean.
9. We shall use proper latrine.
10. We shall boil water before drinking or use alum to purify it. We shall use Pitcher Filter to remove arsenic.
11. We shall not take any dowry at our sons' weddings, neither shall we give any dowry at our daughters wedding. we shall keep centre free form the curse of dowry. We shall not practice child marriage.
12. We shall not inflict any injustice on anyone, neither shall we allow anyone to do so.
13. We shall collectively undertake bigger investments for higher incomes.
14. We shall always be ready to help each other. If anyone is in difficulty, we shall all help him or her.
15. If we come to know of any breach of discipline in any centre, we shall all go there and help restore discipline.
16. We shall take part in all social activities collectively.

## APPENDIX D: GRAMEEN FAMILY OF BUSINESS ENTERPRISES

### For Profit

Name of Company	Year of Establishment
Grameen Bank	1983
Gonoshasthaya Grameen Textile	1995
Grameen Cybernet	1996
Grameen Phone	1996
Grameen Knitwear Ltd.	1997
Grameen Bitek	1998
Tulip Dairy	1998
Grameen Software Ltd.	1999
Grameen IT Park Ltd	2000
Grameen Information Highway	2001
Grameen Star Education Ltd.	2001

### Not – For – Profit

Name of Company	Year of Establishment
Grameen Trust (Technical & financial support for replication of Grameen approach worldwide)	1989
Grameen Agriculture Foundation	1991
Grameen Uddog (Production, marketing and export of hand woven fabrics i.e. Grameen Check)	1994
Grameen Fund (A social venture fund for new entrepreneurs)	1994
Grameen Fisheries Foundation	1994
Grameen Telecom (Providing cellular phone and telecom services in rural areas)	1995
Grameen Shamogree (Marketing of Grameen products)	1996
Grameen Shakti (Pilot testing and marketing of renewable energy products i.e. solar pv, wind power and biomass)	1996
Grameen Kalyan (Welfare programmes for GB members and staff)	
Grameen Shikkha (Educational programmes)	1997
Grameen Communications (Nationwide network for internet, data processing services)	1997
Grameen Securities & Management	1998
Grameen Business Promotion	2001



# Microcredit

**A  
Powerful  
Weapon  
to  
Fight  
Poverty**



**Grameen  
Bank's  
Operating  
System**

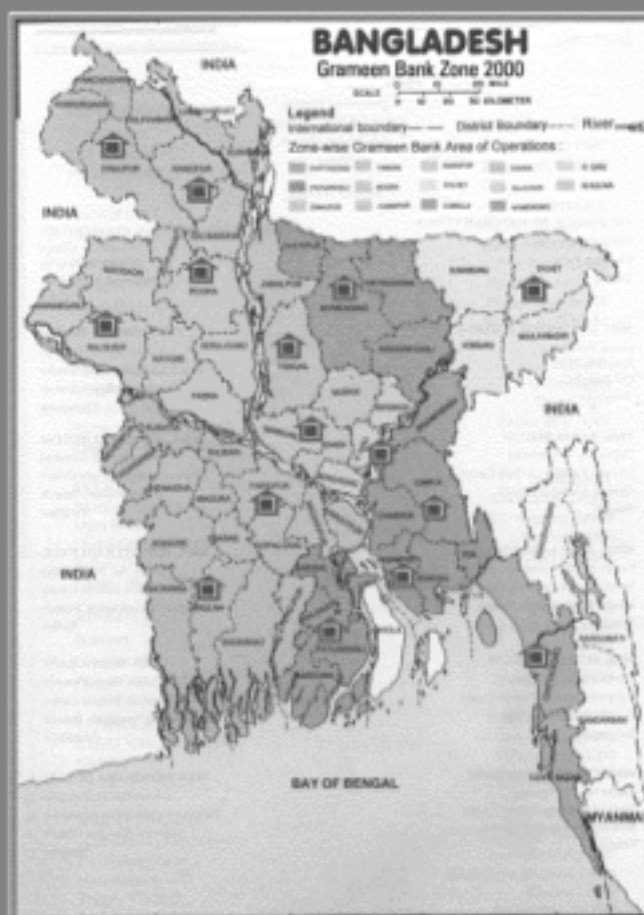
## WHAT IS GRAMEEN BANK ?

**Grameen bank, means the rural or the village bank**

*It provides credit and financial services :*

- exclusively to the rural poor in Bangladesh.
- without any collateral to break through the vicious cycle of poverty.
- for creating self employment opportunities.
- to quickly increase income and empower the poor.

# Grameen Bank Covers almost the Whole Country



## Three Essential Elements of the Operating System

**First: A credit delivery & financial management system**

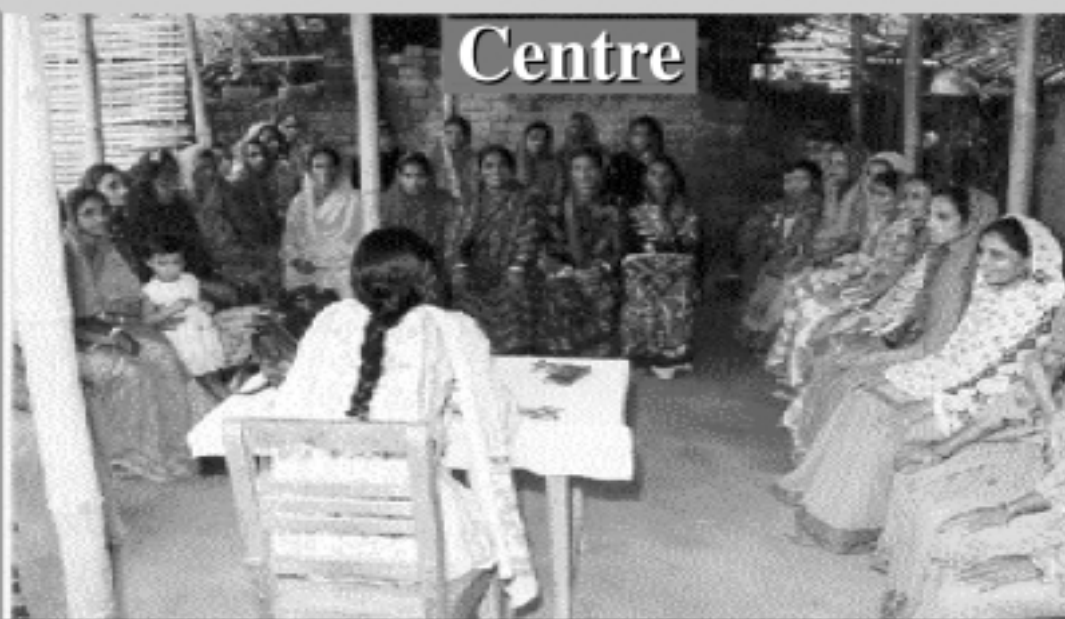
**Second : A receiving system for informal organisation of the targetted clientele**

**Third : Generation of new income opportunities leading to socio-economic development of the poor**

# The Receiving System



# The Receiving System



□  
**GRAMEEN BANK WAS ESTABLISHED IN 1983**

Today it is  
 one of the  
 largest  
 financial  
 institutions  
 in the  
 country



## The Delivery System Organisational Structure of Grameen Bank



**Grameen Bank  
 Head Office**



**15 Zonal  
 Offices**

**1,175 Branch Offices**



**123 Area  
 Offices**



**50-60 Centres per Branch**



**2.4 million members**



**Each Centre  
 made up of 6-8  
 Groups of 5  
 borrowers each**

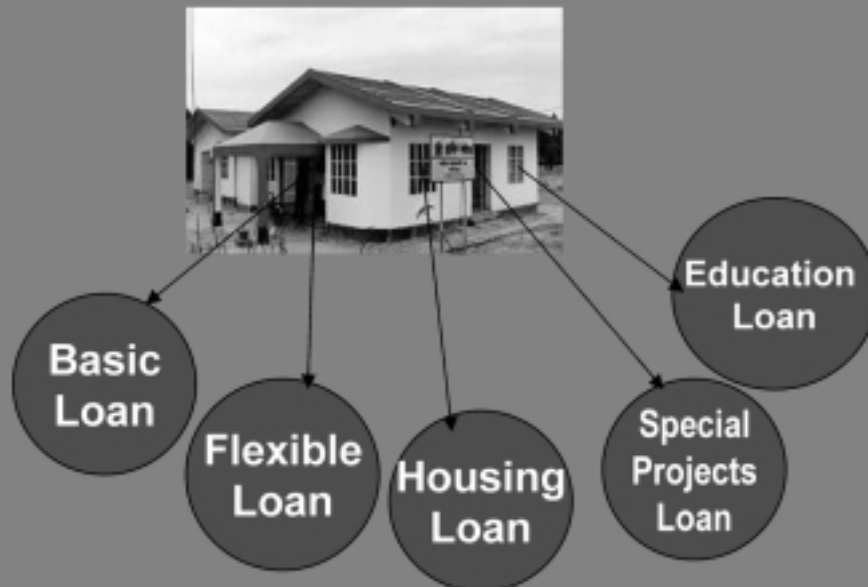
## Grameen Bank is owned by the poor people themselves



## Grameen Bank Share Capital Distribution

I.	Authorized Capital	Tk. 500 million
II.	Paid up Capital	Tk. 400 million
III.	Subscribed Capital	
	a. Govt. Share	Tk. 18.00 million (7%)
	b. Borrower member's share	Tk. 254.50 " (93%)
	Total	Tk. 272.50 million
IV.	Composition of Board of Directors	
	a. Government Nominees	3
	b. Elected Represented of Borrowers	9
	c. Ex-Offico (Managing Director)	1
	Total=	13

**It is now operating a diversified loan portfolio**



**Shopkeeping**



## Milch Cow



## Fisheries



## Poultry Farm



## Nursery





# Embroidery



# Food Processing



# Basket Making



# Box Making



# Mat Making



# Leasing - Three Wheeler



## Leasing - Mobile Phone



## Essentials Features of Grameen's Credit Delivery System

- 1** Exclusive focus on bottom poor.
- 2** Borrowers organised into small homogeneous groups.
- 3** Loan conditionalities specially suitable for the poor.



**1. WE SHALL FOLLOW AND ADVANCE THE FOUR PRINCIPLES OF GRAMEEN BANK --- DISCIPLINE, UNITY, COURAGE AND HARD WORK --- IN ALL WALKS OF OUR LIVES.**



**2. PROSPERITY WE SHALL BRING TO OUR FAMILIES.**



3. WE SHALL NOT LIVE IN DILAPIDATED HOUSES . WE SHALL REPAIR OUR HOUSES AND WORK TOWARDS CONSTRUCTING NEW HOUSES AT THE EARLIEST.



4. WE SHALL GROW VEGETABLES ALL THE YEAR ROUND. WE SHALL EAT PLENTY OF THEM AND SELL THE SURPLUS.



5. DURING THE PLANTATION SEASONS, WE SHALL PLANT AS MANY SEEDLINGS AS POSSIBLE.



6. WE SHALL PLAN TO KEEP OUR FAMILIES SMALL. WE SHALL MINIMIZE OUR EXPENDITURES. WE SHALL LOOK AFTER OUR HEALTH





**7. WE SHALL EDUCATE OUR CHILDREN  
AND ENSURE THAT WE CAN EARN  
TO PAY FOR THEIR EDUCATION.**



**8. WE SHALL ALWAYS KEEP OUR CHILDREN  
AND THE ENVIRONMENT CLEAN.**

**9.  
WE SHALL  
BUILD USE  
PROPER  
LATRINES.**



10. WE SHALL BOIL WATER BEFORE DRINKING OR USE ALUM TO PURIFY IT. WE SHALL USE PITCHER FILTER TO REMOVE ARSENIC.



11. we shall not take any dowry at our sons' weddings, neither shall we give any dowry at our daughters wedding. We shall keep our centre free from the curse of dowry. We shall not practice child marriage.



12. WE SHALL NOT INFLICT ANY INJUSTICE ON ANYONE, NEITHER SHALL WE ALLOW ANYONE TO DO SO.

**13. WE SHALL COLLECTIVELY UNDERTAKE BIGGER INVESTMENTS FOR HIGHER INCOMES.**



**14. WE SHALL ALWAYS BE READY TO HELP EACH OTHER. IF ANYONE IS IN DIFFICULTY, WE SHALL ALL HELP HIM OR HER.**



**15. IF WE COME TO KNOW OF ANY BREACH OF DISCIPLINE IN ANY CENTRE, WE SHALL ALL GO THERE AND HELP RESTORE DISCIPLINE.**

**16. WE SHALL TAKE PART IN ALL SOCIAL ACTIVITIES COLLECTIVELY.**



## Grameen Saving Schemes

(June'02)

### New Savings Schemes

Balance (In Million Tk.)

Personal Savings Schemes	2775.12
Grameen Pension Schemes	1995.95
Special Savings Schemes	1726.80
Fixed Deposits	107.89
Seven Years Deposits	367.10
Other Savings Schemes	824.00
<b>Total :</b>	<b>7796.86</b>



## GRAMEEN FAMILY OF BUSINESS ENTERPRISES

### FOR PROFIT

Name of Company	Year of Establishment
Grameen Bank	1983
Gonoshasthaya Grameen Textile	1995
Grameen Cybernet	1996
Grameen Phone	1996
Grameen Knitwear Ltd.	1997
Grameen Bitek	1998
Grameen Software Ltd.	1999
Grameen IT Park Ltd	2000
Grameen Information highway	2001
Grameen Star Education Ltd.	2001

## GRAMEEN FAMILY OF BUSINESS ENTERPRISES

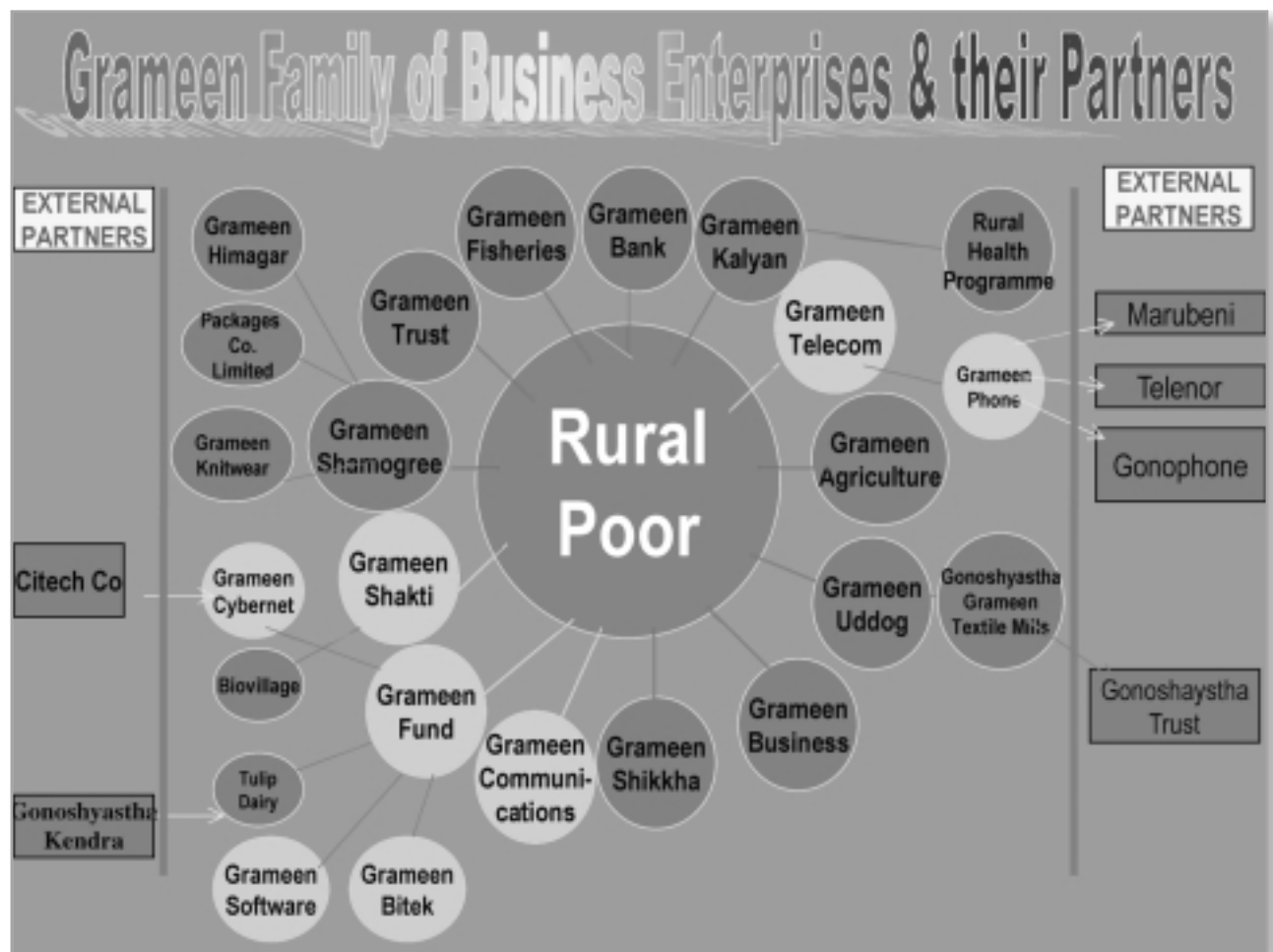
### NOT- FOR- PROFIT

<b>Grameen Trust</b> (Technical & financial support for replication of Grameen approach worldwide)	<b>1989</b>
<b>Grameen Agriculture Foundation</b>	<b>1991</b>
<b>Grameen Uddog</b> (Production, marketing and export of hand woven fabrics i.e. Grameen Check)	<b>1994</b>
<b>Grameen Fund</b> (A social venture fund for new entrepreneurs)	<b>1994</b>
<b>Grameen Fisheries Foundation</b>	<b>1994</b>
<b>Grameen Telecom</b> Providing cellular phone and telecom services in rural areas)	<b>1995</b>

## GRAMEEN FAMILY OF BUSINESS ENTERPRISES

### NOT- FOR- PROFIT

<b>Grameen Shamogree</b> (Marketing of Grameen products)	<b>1996</b>
<b>Grameen Shakti</b> (Pilot testing and marketing of renewable energy products i.e. solar pv, wind power and biomass)	<b>1996</b>
<b>Grameen Kalyan</b> (Welfare programmes for GB members and staff)	<b>1996</b>
<b>Grameen Shiksha</b> (Educational programmes)	<b>1997</b>
<b>Grameen Communications</b> (Nationwide network for internet, data processing services)	<b>1997</b>
<b>Grameen Securities &amp; Management</b>	<b>1998</b>
<b>Grameen Business Promotion</b>	<b>2001</b>



## Guiding Principles of Social Venture Enterprises

1. New enterprises are set up in sectors of the economy where the poor is likely to have a comparative advantage i.e. Agriculture, Fisheries, Rural Textiles
2. Investment proposals are appraised taking into consideration the market criteria; equity participation by private entrepreneurs

## **Guiding Principles of Social Venture Enterprises**

3. Funds for investment, both equity and loan funds, are raised from the market. Grameen Fund, Grameen Kalyan can provide additional leverage.
4. New enterprises are incorporated either as profit or not for profit companies.
5. Grameen Bank borrowers or the Grameen enterprises will become the owners of new business ventures.

## **Main Issues Before GB Today**

1. Issue of Attaining Full Financial Viability
  - Viability at borrowers level
  - Viability of branch level operations
  - Viability of GB as a whole
2. Issue of Macro Policy (i.e. Government policies) support to micro level credit for poverty alleviation.



## **Main Issues Before GB Today**

- 3. Issue of raising productivity through application of new technologies.**
- 4. Issue of improved co-ordination with government and non-government institutions/ programs.**

**Thank you**

**SWEDEN**

# Innovative Financing and Structuring of Environmental Projects: Some Nordic Experiences

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# Introduction

- Overview: The Nordic Finance Group



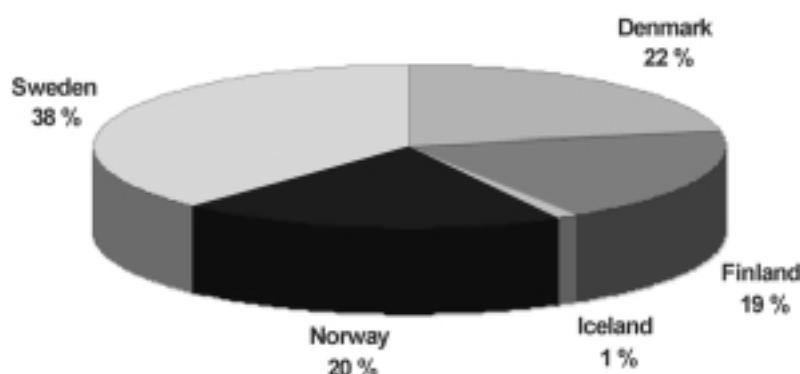
# Nordic Countries

## The Stakeholders



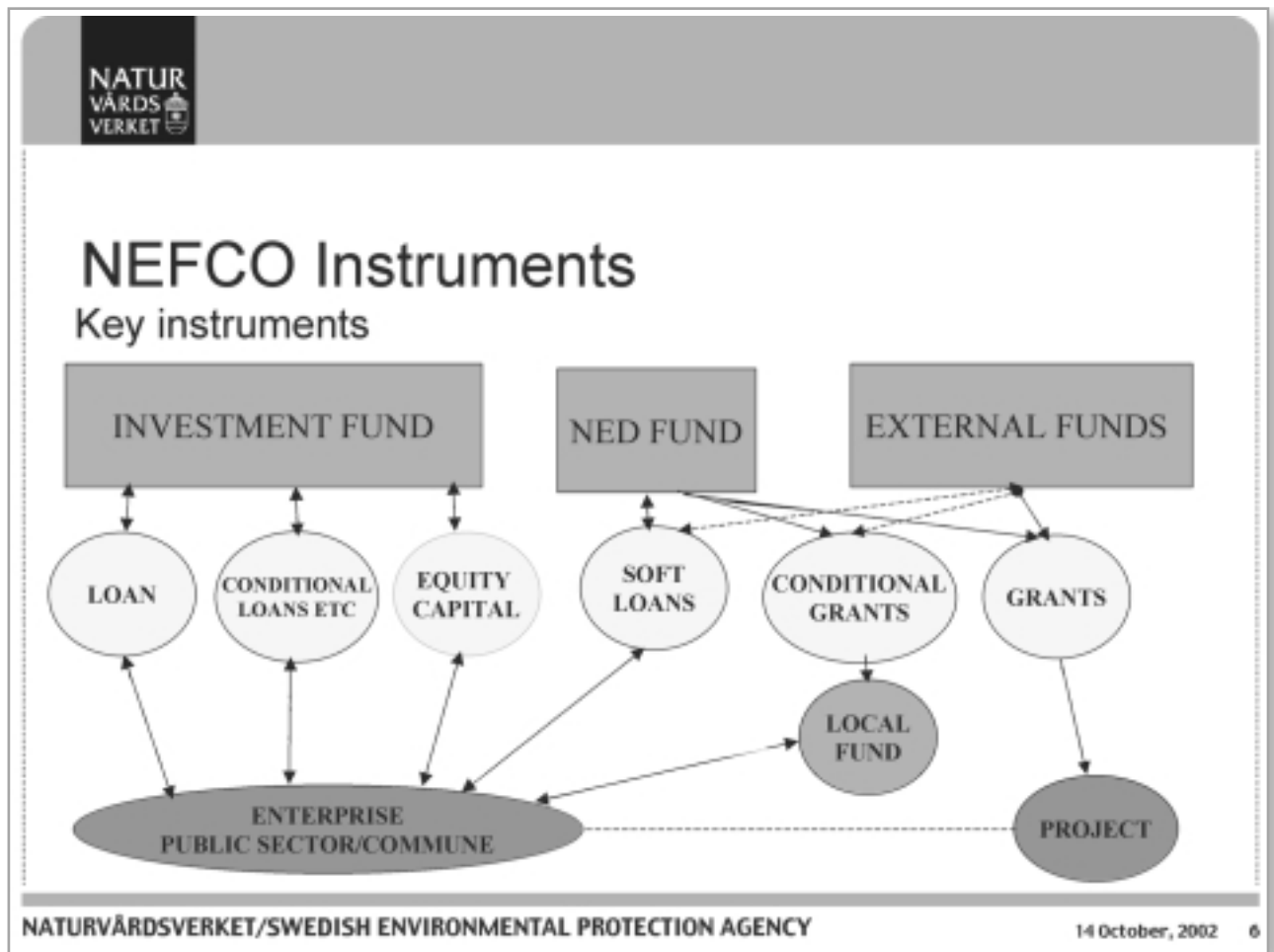
## Nordic Countries

Member countries subscribe to authorised capital in portion to their gross national products



## Nordic Institution: The Nordic Environment Finance Corporation (NEFCO)

- NEFCO: Nordic Environment Finance Corporation: An International Finance Institution (IFI). NEFCO Finances environmental projects in central and east European countries. Based in Helsinki, Finland
  - Web address: <http://www.nefco.fi>



**NATUR VÄRDS VERKET**

## Case: The Nordic Environmental Development (NED) Fund at NEFCO

- Nordic Environment Development (NED) Fund administered by NEFCO
- NED Fund Sectors:
  - Industry, energy, clean production, waste water treatment, waste, products, services etc
- Established in October 1995 at NEFCO for a trial period 1996-1998

**NATURVÄRDSVERKET/SWEDISH ENVIRONMENTAL PROTECTION AGENCY** 14 October, 2002 7

## Case: The Nordic Environmental Development (NED) Fund at NEFCO

- An evaluation of the Fund made 1998 proposed continuation which was approved for 1999-2003
- Approx. 5 M USD/year is granted for the NED Fund, totally 33 M USD
- 37 projects have been approved for approx. 27 M USD.
- "Soft" financing of environmental projects in the Nordic immediate surroundings. The geographical area of operation coincides with NEFCO's area of operations

## The Nordic Environmental Development (NED) Fund

### PURPOSE of the Fund

- To complement and supplement other financing organization
- Local participation is required

## The Nordic Environmental Development (NED) Fund

- Supporting the realization of projects that otherwise would not materialize or could be realized only later in the future;
- Contribution can be provided:
  - as grants for the procurement of goods or services (cash subsidies)
  - to reduce the borrower's debt service costs
  - Example: The Revolving Cleaner Production Facility

## Revolving Cleaner Production Facility of the NED Fund

### Objective and criteria

- The Cleaner Production (CP) Facility finances, on favourable terms implementation of cleaner production investments with criteria of rapid payback (not more than three years) that yield environmental and economical benefits ("win-win projects")
- Such investments that provide enterprises with encouraging model projects to upgrade business and environmental performance through low-cost measures

# Implementation

- Recovery of Loans:
  - Cash flow from savings
  - Corporate/project risk, Securities
  - Loan recovery usually within the specified time (e.g. 3 years)
  - Repatriation risk negligible when the alternative is grant financing

# Implementation

- Owner driven
- Flexibility in procurement, justification
- Monitoring and supervision mechanism needs to be established up front
- Tapping of local expertise
- Follow-up reporting
- Exit



## Barriers (1/2)

- CP Project preparation capacity:
  - Poor at enterprise level. Good technical know-how but financial and environmental knowledge needed.
  - Investment needs to be self-bearing.
  - Calculation and capturing of the positive effects.
  - External sources are need to ensure that the project is viable.
  - Technical assistance is essential for capacity building.
- Projects are relatively small size undertakings.

## Barriers (2/2)

- Generally not acceptable for large institutions such as the International Finance Institutions (IFIs)
- Regulatory hinder
- Local banks unaccustomed

## Lessons Learnt

- Swift start in some countries, slower in others
- Regulatory framework needs to facilitate
- Technical **and** financial training **is vital**
- A full project cycle requires time
- Sometimes unrealistic expectations

## Applicability to Others

- Additional but tangible measures should be addressed, e.g. energy/climate/resource efficiency/products
- Secure co-financing
- Flexibility is key for success
- Transparent routines and quick response
- Testing window

## Conclusion (1/2)

- Our experience of concessional and innovative financing is positive hitherto
- Currently overall investments have yielded a relatively quick and high leverage for enterprises
  - 1 to > 10 financial leverage
  - Tangible environmental return and resource efficiency
  - A good tool for technology transfer
  - Good business sense

## Conclusion (2/2)

- Strategic testing ground
- Limited geographic area(s)
- Stakeholders facilitate success
- Post-evaluation

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# UNDP/GEF EXPERIENCE WITH INNOVATIVE FINANCING MECHANISMS FOR ENVIRONMENTAL PROJECTS

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## INTRODUCTION

UNDP has built up its experience with innovative financing mechanisms, including concessional lending, through the UNDP Global Environment Facility (GEF) programme. UNDP/GEF relevant experience as outlined in this paper focuses mainly on climate change projects, which concentrate on two key mechanisms: (i) funds established as part of UNDP projects (e.g., revolving funds), and (ii) risk mitigation mechanisms (e.g. partial guarantee facilities, contingent loans). It is important to note that such funds and mechanisms are not managed directly within UNDP. The usual modality is for these types of non-grant mechanisms to be set-up through local governmental and non-governmental bodies. UNDP's network of Country Offices have facilitated the execution of the UNDP/GEF climate change projects, as they have been involved in the day-to-day management of the projects, and have assisted with setting up non-grant mechanisms that are appropriate to the developing countries contexts.

To meet the GEF's global objective of achieving measurable reductions in greenhouse gas (GHG) emissions, UNDP/GEF's climate change portfolio focuses primarily on removing barriers to energy conservation, energy efficiency, and renewable energy, while providing the required technical assistance to ensure the sustainability of project objectives. UNDP/GEF's approach to climate change is to provide GEF grants as "*smart subsidies*" that do not undermine the market but, rather, encourage market transformation through industry driven initiatives.

This paper highlights five UNDP/GEF climate change project case studies, representing projects that are completed or are currently under implementation (as well as details on other relevant climate change projects) that serve to illustrate the geographic diversity of UNDP/GEF experience and the range of "smart subsidies" and financing mechanisms that have been used.

## BACKGROUND

The UNDP/GEF climate change projects in this paper focus primarily on two of the GEF operational programs: (i) removing barriers to energy conservation and energy efficiency; and (ii) promoting the adoption of renewable energy by removing barriers and reducing implementation costs. The duration of these full projects (i.e., greater than \$1 million of GEF funding) averages five years. A wide variety of stakeholders are targeted under UNDP/GEF programs and have included low-income groups, private sector entrepreneurs, and municipalities.

The selected case studies met the following GEF eligibility criteria:

- produce measurable reductions in greenhouse gas emissions;
  - remove barriers to energy conservation, energy efficiency, or renewable energy – these elements often form the major components of GEF projects;
  - consistent with the UNFCCC national/regional initiatives;
  - driven by national priorities, and endorsed by the government;
  - engage broad participation of stakeholders in project decision making; and,
  - cost effective, replicable, and include a design for financial sustainability at the conclusion of GEF support.
-

## IMPLEMENTATION EXPERIENCE

UNDP/GEF has designed a number of projects with innovative financing mechanisms. Five case studies are discussed below. In addition, Table 1 has additional details on the case studies and other ongoing UNDP/GEF climate change projects, while Table 2 covers other projects that have recently been approved or are under early stages of implementation.

### **Case Study 1: Zimbabwe: Photovoltaics for Household and Community Use Project**

UNDP/GEF and the Government of Zimbabwe engaged in this pilot project to help overcome the numerous barriers to widespread adoption of small-scale photovoltaic technology in rural areas. The project's primary effort was to install 9,000 solar lighting systems in rural homes, schools, and clinics during 1993–97. The project was also targeted at strengthening the weak indigenous solar manufacturing and delivery infrastructure through technical assistance, training, and alleviation of constraints on manufacturing.

The project established a revolving finance facility that allowed end-users to pay a 15 percent deposit on installation; the balance was payable over three years at a 15 percent annual interest rate. A Credit Support Fund (CSF) was established at the Agriculture Finance Corporation (AFC), encompassing an appropriate legal framework, management procedures and financial regulations. While the AFC had some of these mechanisms already in place, it adjusted its normal lending procedures to fit this project, including extending the loan period beyond the normal one year period that is linked to the agricultural season. Low-income rural farmers benefited from installing systems using the national utility and/or nongovernmental organizations. Loan repayment periods on these systems were 3 years and covered a range of hardware, including low-cost, one- or two-light systems, solar kits, and mobile lanterns.

This project was designed and funded under the GEF Pilot Phase and, as such, the project did not focus on sustainability beyond the project's lifetime. The revolving fund, as established, ended up operating essentially as a sinking fund. While the project was considered very successful in that 10,000 PV systems were installed, rather than the targeted 9,000 systems, the sinking fund was not designed to be sustainable. In addition, AFC could not ultimately be convinced to on-lend their own resources given the profitability of the investments, which would have been required to make this a truly sustainable initiative.

### **Case Study 2: Sudan: Community Based Rangeland Rehabilitation for Carbon Sequestration and Biodiversity Project (CBRRP)**

The Community Based Rangeland Rehabilitation Project (CBRRP) was a carbon sequestration pilot project, the first of its kind in the Sudan. It was formulated during the GEF Pilot Phase and was approved prior to the GEF 1995 Operational Programs being formulated. The development objective was twofold: (a) to sequester carbon through the implementation of a sustainable, local-level natural resources management; and (b) to reduce the risks of production failure in a drought-prone area by providing alternatives for sustainable production, so that out-migration would decrease thereby stabilizing the population.

Revolving fund activities focused on promotion of two community-based micro credit institutions, and development of arrangements for credit fund operation and management. This latter activity was meant to include loan processing and delivery mechanisms, developing linkages with the Agricultural Bank of Sudan, and helping to build repayment discipline. Members of the credit sub-committees received training in credit fund management, simple bookkeeping and clerical work. The level and quality of account bookkeeping and clerical work system varied significantly from one Village Development Committee (VDC) to another though, in general, the terminal evaluation team considered it adequate.

The total loan portfolio in the first cycle of the revolving funds was approximately \$360,000 for the direct economic benefit of 3,820 beneficiaries. The budget figure represents the monetary value of all the credit-based inputs extended by the project to the concerned communities since its inception. Data is not yet available to show how these revolving funds have revolved or to show if there is any tendency for capital growth or financial resource regeneration. The revolving fund component of the project was established in the context of two slow-onset disasters, namely recurrent drought and acute food shortages. Confronted with this persistent disaster context, the revolving funds component was clearly effective with its limited funding level in meeting a near-term disaster-mitigation/management need.

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The very limited data available shows that the overall repayment percentage rate is 62%. Given the region's fragile economy (characterized by high risk, widespread vulnerability, poor resource endowment, and low income), this percentage appears reasonably good according to independent evaluations of the situation in the Sudan. It is noteworthy that the two banks that are operational in the area do not have average loan collection rates of more than 45%, even though they do enjoy legal enforcement options.

### **Case Study 3: Pakistan: Fuel Efficiency in Transport Sector (FERTS) Project**

For the FERTS Project, an Energy Conservation Fund (ECF) was established to finance purchase of transportation related tune-up equipment by private sector entrepreneurs. The ECF was established in December 2001, after extensive stakeholder consultation. It has a nine member Board of Directors, which include the UNDP Resident Representative and senior officials from the Government of Pakistan, NGOs and the private sector.

The Fund began disbursing loans during 2002 to auto workshop owners and mechanics, who are using this facility to obtain low-cost loans for the purchase of instrumented tune-up systems that will be used to increase the efficiency of fuel use of vehicles. It is envisaged that, through this facility, over 180 new tune-up stations will be set up in the country within the next 12 months. Since the Fund has only recently begun implementation, the funds (or percentage) disbursed and annual recovery, and the number of potential loan defaulters, cannot be estimated at this time.

The project set up a legal structure for the management of the fund, and setting up this legal structure took considerable time and involved the use of significant international and national expertise. One of the major lessons learned relates to the complicated system of financial recoveries required to deal with the repossession of equipment from owners who default on payments, which was not envisaged in the design of the project.

### **Case Study 4: Hungary: Public Sector Energy Efficiency Programme**

The project aims to improve the energy efficiency in the Hungarian public sector by removing the barriers to a sustained market of energy efficiency services and promoting the implementation of energy efficiency projects in municipalities, hospitals and other public institutions. It is estimated that the project will directly help to generate 45-75 energy efficiency projects that will result in mitigating carbon emissions.

To help provide support for cost-sharing feasibility studies and energy audits undertaken by Hungarian municipalities, the project set up a fund in March 2002. "Letters of approval" are granted to municipalities that plan to undertake such feasibility studies and energy audits. The agreement is that the fund will pay over 70% of the grant when the energy efficiency projects are actually implemented, and up to 30% if they are not fully implemented (thus providing some incentive for municipalities to cover certain costs). The financing mechanisms will complement the government's energy efficiency credit program in such a way that the benefits from the use of GEF resources are maximized.

### **Case Study 5: Thailand: Removal of Barriers to Biomass Power Generation and Cogeneration**

This project aims to reduce greenhouse gas emissions by accelerating the growth of biomass co-generation and power generation technologies to replace current fossil fuel consumption. One project objective is to facilitate implementation of biomass power plants through support of partial risk guarantees to help reduce technical risks associated with the use of this new technology in Thailand. Private sector companies and financial institutions are working with bilateral and multilateral funding agencies to establish a risk guarantee mechanism for on-grid power sector investment.

The project covers two plants that will pilot cogeneration from rice husks and sawmill waste. The capital investment costs were expected to be funded through direct loans from the Japan Bank for International Cooperation (JBIC). Since the project is not a conventional investment, JBIC required a risk guarantee that was to be shared by both the GEF and the Industrial Finance Corporation of Thailand (IFCT). The GEF contribution was initially to cover fuel supply and technological risk, and the IFCT contribution was to cover the currency risk. However, before project implementation started, the arrangement with JBIC was changed due to JBIC's concern on funding one of the two plants and JBIC's direct loan agreement has been replaced by a commitment to support IFCT's generic Energy Protection Programme (EPP) activities.

Another challenging feature of this project is the management of payments covering the partial risk guarantee fees, on behalf of UNDP/GEF on a yearly basis. While most of the barrier removal and capacity building activities are to be completed within 7 years, the same is not true of the partial guarantee mechanism wherein payments must continue for the duration of the loan. The project is currently exploring whether IFCT will manage these payments on behalf of UNDP/GEF during the life of the demonstration plants, or if a trust fund should be established.

## IMPEDIMENTS AND BARRIERS FACED

UNDP/GEF projects, that have innovative financing elements, have faced a number of impediments and barriers to successful completion including currency risk, quality and suitability of local financial partners, and the profitability of the projects' investments. Specifically:

- **Currency risk** Currency risk can lead to insufficient funds at hand for the purchase of project materials and resources. For example, for the Zimbabwe photovoltaic project described above, currency depreciation occurred between the time the materials were ordered and when payment was due. This necessitated a reallocation of funds within the project budget. The Thailand Biomass project required some redesign after the South-East Asian currency and economic crisis, when the direct loan envisaged from JBIC was transformed into a two-step guarantee scheme. This redesign required new negotiations with project partners regarding legal, institutional and implementation agreements, and the signing of memoranda of understanding between project partners.
- **Quality and suitability of local financial partners** The quality and suitability of the local counterpart involved in executing the innovative financing mechanism is key to a successful project. The setting-up of innovative financing mechanisms is more complicated in countries that have little experience with these mechanisms. And in countries without appropriate legal structures, substantial efforts may be necessary to create the appropriate legal framework for the project. The assessment of time and resources (both human and financial) required to set up a smooth and functioning implementation mechanism is often underestimated. For example, Pakistan's FERTS project did not anticipate the complicated system of financial recoveries required to deal with payment defaults. In the case of the Thailand Biomass Cogeneration project, the strong commitment of the IFCT enabled the re-design of the financial loan guarantee scheme. However, in a country with a less evolved financial structure, a similar solution might not be possible.
- **Investment profitability of the project** The implementation of innovative financing mechanisms requires that the project investments achieve a minimum level of profitability. For example, in the case of the Zimbabwe PV project, the local financial partner successfully adjusted its traditional lending mechanisms and practices to fit the GEF project by extending its normal loan period. However, the AFC ultimately found that they could not continue to on-lend its own resources over the long-term, under the terms demanded by the project, and still achieve the expected returns.

## LESSONS LEARNED

At least six key lessons have been learned through the execution of UNDP/GEF climate change projects that have an element of innovative financing, as outlined below.

- **Consider the appropriateness of setting-up new financial mechanisms, including the associated legal and administrative burdens** Substantial efforts are required to ensure that the appropriate legal structures and administrative mechanisms are established to support the funds and related loan guarantee mechanisms. One way of minimizing the legal and administrative design cost and delay issues is to establish innovative financing mechanisms within already existing funds or institutions, such as was done in the UNDP/GEF Slovenia Biomass Project. However, not all countries have the existing capacity to deal with innovative financing mechanisms, therefore it is not appropriate to require an innovative financing element in every project.
  - **Recognize the benefits of establishing loan funds at the local level** Sudan's CBRRP project, for example, was originally designed to have two community-based revolving loan funds. Due to modifications introduced in the institutional set-up, ultimately 17 community-based revolving loan
-

funds were established. It was found that the establishment of an autonomous revolving loan fund for each Village Development Committee (VDC) would be more effective. Given the greater potential for close coordination with the other ongoing project activities, this proved to be a successful strategy.

- **Design projects for sustainability with time-delimited “smart subsidies”** UNDP/GEF experience with climate change projects has been to provide GEF grants as “smart subsidies” that do not undermine the market but, rather, encourage market transformation through industry driven initiatives. Such market transformation initiatives are coupled with appropriate technical assistance to ensure the sustainability of the project’s objectives beyond the project’s lifetime. The early experience with the Zimbabwe PV project’s sinking fund demonstrated that a greater number of PV installations could be covered than if straight grants had been provided under the project. This project also highlighted the need to set-up financial mechanisms that are appropriately time-delimited to ensure that the market transformation is achieved and maintained.
- **Provide for capacity building and training in fund management under the project** In the Sudan CBRRP project, training in credit fund management, simple bookkeeping and clerical functions was provided to members of the credit sub-committees. Within the villages covered by the project, training was provided to help the members of the Village Development Committees (VDC) become acquainted with techniques of loan repayment in times of inflation. These included: (a) conducting loan transactions in kind and keeping repayment in cash to the minimum; (b) diversifying investment mechanisms and sectors as a risk hedging practice; and (c) promoting the delivery of credit based on a realistic economic price to avoid the erosion of the revolving credit fund. The training resulted in varied but adequate skills required to manage the funds. Without this focused training, the initial capacity of the local community would have been unsuitable to deal with the innovative financing mechanism introduced under the project.
- **Provide guarantees of support, rather than cash up front, to promote action** The Hungarian project on energy efficiency in the public sector was designed to provide incentives for cost-sharing feasibility studies and energy audits undertaken by municipalities. To provide a built-in incentive to implement follow-on energy efficiency projects, “letters of approval” or guarantees of reimbursement are granted to municipalities that plan to undertake such feasibility studies and energy audits. Fuller reimbursements are made to municipalities only when the energy efficiency projects are actually implemented, with only partial reimbursements in other cases. This approach is termed the “incentive to succeed” method..
- **Improve the speed of implementation by fully designing the financial mechanisms upfront** The more recently approved UNDP/GEF projects (i.e., those detailed in Table 2) have been allocated resources that are devoted to designing innovative financing mechanisms that are appropriate to the country and the project context. While it was originally considered acceptable to design the financing mechanisms during project implementation, it is now standard UNDP/GEF practice to have the financing mechanisms completely designed before the project begins implementation to avoid delays that occurred in the past.

## APPLICABILITY

In all the UNDP/GEF project case studies mentioned in this paper, funds used for innovative financing have not been managed directly by UNDP. In most cases UNDP received the money as a GEF grant and the government then used the grant money to set up an innovative financing mechanism through either a local government institution or a commercial bank. In addition, UNDP’s extensive network of Country Offices has facilitated the execution of the projects by allowing for close monitoring and evaluation of the management of the projects, identifying appropriate local counterparts, and advising on the establishment of innovative financing mechanisms that are appropriate to the particular developing country context.



## CONCLUSION

UNDP/GEF experience relates primarily to the establishment of funds and loan guarantee programs. When considering the inclusion of an innovative financing mechanism in a UNDP/GEF project, the primary concerns include currency risk, the quality and suitability of the local financial partners, and the profitability of the project. Given the complexity of setting up innovative financing mechanisms in developing countries, it is recommended that UNDP continue to offer selected innovative financing modalities that have been already designed and are well tested.

**Table 1 UNDP/GEF Ongoing and Completed Projects Involving Innovative Financing Mechanisms**

Country	Region	Project Title	Non-Grant Financing Mechanism	Implementation Status	GEF Funding (US\$ million)
Zimbabwe	Africa	Photovoltaics for Household and Community Use	fund established	Completed	4.563
Sudan	Arab States	Community Based Rangeland Rehabilitation for Carbon Sequestration and Biodiversity	revolving fund established	Completed	1.500
Pakistan	Asia & the Pacific	Fuel Efficiency in Transport Sector (FERTS)	revolving fund established	Under implementation	7.000
Hungary	Europe and the CIS	Public Sector Energy Efficiency Programme	fund established	Under implementation	4.200
Thailand	Asia & the Pacific	Removal of Barriers to Biomass Power Generation and Co-generation in Thailand	risk mitigation	Under implementation	6.800
Malaysia	Asia & the Pacific	Industrial Energy Efficiency and Improvement Project	fund established	Under implementation	7.300

Projects should strive to work with institutions or groups that already have experience with innovative financing mechanisms thereby using existing capacity and allowing for training and capacity building under the project to help ensure future success. Not all countries have the existing capacity to deal with innovative financing mechanisms, therefore it is not appropriate to require an innovative financing element in every UNDP/GEF project. Further, by making use of UNDP Country Office in-country knowledge, contacts, and close monitoring and evaluation capabilities, UNDP as a whole can continue to make use of innovative financing to provide outstanding support for projects that protect the environment and promote sustainable development.

Local Executing Agency	Description of Non-Grant Financing Approach
Government of Zimbabwe (Ministry of Transport and Energy, Department of Energy)	Established a credit mechanism allowing low-income groups to purchase photovoltaic systems.
Ministry of Agriculture, Natural and Animal Resources, and UNOPS	Revolving fund activities focused on the promotion of two community-based micro credit institutions, and the development of arrangements for credit fund operation and management.
Ministry of Environment, Local Government and Rural Development	Energy conservation fund established to finance the purchase of tune-up equipment by private sector entrepreneurs.
Government of Hungary/Ministry for Economic Affairs	The project provides contingent grants for cost-sharing feasibility studies. This strategy will support larger energy efficiency projects, and it is expected that costs can be recovered from a relatively high percentage of the projects. The financing mechanisms complement the government's energy efficiency credit program in such a way that the benefits from the use of GEF resources are maximized.
National Energy Planning Office (NEPO)	As one of the activities intended to increase access to commercial financing for biomass power/co-generation projects, a feasibility study is being conducted to set up a risk/credit guarantee fund to provide fuel supply risk guarantees. To assist with demonstrating the technical and financial viability and reduce risks for the biomass power/co-generation technologies, UNDP/GEF funds will be used as a partial guarantee targeted for two biomass power projects.
Ministry of Energy, Telecommunications and Post	To promote energy efficiency improvements of industrial equipment manufacturing, a financing mechanism is being designed and set up to provide loans to local equipment manufacturers. Local banking and financial institutions will participate in this activity, mainly in managing the funds and in providing advice based on local financing practices.

**Table 2 UNDP/GEF Recently Approved Projects with Innovative Financing Mechanisms**

<b>Country</b>	<b>Region</b>	<b>Project Title</b>	<b>Non-Grant Financing Mechanism</b>	<b>GEF Funding (US\$ million)</b>
Slovenia	Europe and the CIS	Removing Barriers to the Increased Use of Biomass as an Energy Source	fund established	4.300
Ukraine	Europe and the CIS	Removing Barriers to GHG Emissions Mitigation through Energy Efficiency in the District Heating System (Phase I)	fund established	4.500
Kazakhstan	Europe and the CIS	Wind Power Market Development Initiative	fund established	2.550
Poland	Europe and the CIS	Polish Energy Efficient Motors Programme	fund established	4.500
Croatia	Europe and the CIS	Removing Barriers to Improving Energy Efficiency of the Residential and Service Sectors	Risk Mitigation	4.390
Malaysia	Asia & the Pacific	Biomass-based Power Generation and Cogeneration in the Malaysian Palm Oil Industry	Risk Mitigation	4.000
Chile	Latin America & the Caribbean	Removal of Barriers for Rural Electrification with Renewable Energies	Risk Mitigation, Fund Established	6.000
Regional	Latin America & the Caribbean	Caribbean Renewable Energy Development Programme (CREDP)	Risk Mitigation, Fund Established	4.076
Egypt	Arab States	Energy Efficiency Improvements and Greenhouse Gas Reduction	loan guarantee programme	4.110

Local Executing Agency	Description of Non-Grant Financing Approach
Ministry of Environment and Spatial Planning, Agency for Efficient Use of Energy (AURE)	The Biomass Energy Fund will be established as a separate account within the Slovenian Ecofund to overcome the financial barriers faced by the biomass project. The Fund will be managed by the Ecofund, the project manager having the day-to-day responsibility for Fund's operations and the supervision of them.
State Committee for Energy Conservation	Project involves the establishment of the municipal energy service company (ESCO) and demonstration of the energy saving program. In order to maximize the resources available for expanding the project, proportional returns on UNDP/GEF funds for the demonstration project and the city-wide investment may be placed back into the ESCO.
Ministry of Natural Resources and Environment Protection; Ministry of Energy, Trade and Industry	Still under development. It should involve the establishment of new innovative financing schemes for financing wind energy projects in Kazakhstan, incorporating possible financial assistance from international organizations dealing with the energy and environmental issues.
Office of the Committee for European Integration (UKIE); Polish National Energy Conservation Agency S.A. (KAPE S.A.)	Financial incentives, offered to manufacturers to overcome market inertia in the manufacturing of the products, help to "kick-start" sales of energy-efficient products. The financial incentive will encourage motors manufactures to rebuild their facilities for production of energy efficient motors and offer new products. A financial incentive mechanism will be designed and established, where financing is made available to efficient motor manufacturers that are able to meet minimum technical requirements established under PEMP.
Government of Croatia	This project establishes a partial guarantee facility to share the risks connected with the preparation and implementation of energy efficiency projects in the service sector and to leverage additional financing for the energy efficiency investments from the private sector. The GEF Partial Guarantee Fund will be primarily established to share the risks connected with the development and operationalization/ commercialization of the planned energy efficiency projects within the selected companies.
Ministry of Energy, Multimedia and Telecommunications	Establishment of a renewable energy fund (Energy Business Fund) that will support renewable energy initiatives of prospective biomass energy users. The Energy Business Fund will be established using resources from the GEF as initial capital.
Comisión Nacional de Energía (CNE)	Combination of investment guarantee fund and technology risk mitigation fund. The design is currently being proposed by the government, prior to negotiation with UNDP/GEF.
Caribbean Community (CARICOM)	One of the main barriers preventing investment in renewable energy in the region is the lack of access to funds for project developers. This PDF B Part II will help develop the necessary financial mechanisms to promote investment in such projects. The appropriate financial mechanism will be designed prior to the initiation of the major project activities. It would provide the financial instrument and support to the selected renewable energy projects eligible for GEF incremental cost financing as well as future renewable energy investments resulting from this project.
Ministry of Electricity and Energy in cooperation with UNDESA	Implement a pilot program to provide partial loan guarantees to support the technical performance of selected, semi-private companies.



## TECHNICAL WORKSHOP ON CONCESSIONAL LENDING

(22 July 2002, Montreal)

### UNDP/GEF Experience with Innovative Financing Mechanisms for Environmental (Climate Change) Projects

**Frank Pinto**

GEF Executive Coordinator and Deputy Leader  
Environmentally Sustainable Development Group/UNDP



*Introduction*

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## Introduction

- Focus on UNDP/GEF climate change experience:
  - **Funds established (e.g., revolving funds)**
  - **Risk mitigation mechanisms (e.g., partial guarantee facilities)**
- Funds and mechanisms are not managed directly within UNDP but are set-up through local govt and non-govt bodies
- UNDP's network of Country Offices facilitate monitoring and evaluation
- Principle of "smart subsidies" that encourage market transformation



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*Overview*

## Overview

- Background
- Implementation Experience:  
*5 UNDP/GEF case studies*
- Impediments & Barriers Faced
- Lessons Learned
- Applicability
- Conclusions & Recommendations



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*Background*

## Background

### **UNDP/GEF climate change projects:**

- Remove barriers to energy efficiency; or
- Promote renewable energy by removing barriers and reducing implementation costs.

### **All projects meet GEF eligibility criteria:**

- GHG emission reduction
- Remove barriers to EE or RE
- Consistent with UNFCCC guidance
- Country driven with stakeholder participation
- Cost effective, replicable, designed for financial sustainability



## Implementation Experience: Case Studies

UNDP-GEF has designed several *ongoing* projects with innovative financing mechanisms:



1. **Zimbabwe** • PV for Households and Communities
2. **Sudan** • Community Based Rangeland Rehabilitation for Carbon Sequestration
3. **Pakistan** • Fuel Efficiency in Transport Sector
4. **Hungary** • Public Sector Energy Efficiency Programme
5. **Thailand** • Biomass Power Generation & Cogeneration



## Zimbabwe: Photovoltaics for Households and Communities

- Installed 10,000 solar lighting systems in rural homes, schools and clinics (1993-97)
- Strengthened weak local manufacturing infrastructure through technical assistance and training
- Established credit mechanism:
  - At the Agriculture Finance Corporation (AFC)
  - End-users pay 15% deposit on installation
  - Balance payable over 3 years at 15% annual interest rate
- This Pilot Phase GEF project did not focus on sustainability beyond the project's lifetime: "sinking fund" rather than "revolving fund" established
- AFC not convinced to on-lend its own resources



## **Sudan: Community Based Rangeland Rehabilitation for Carbon Sequestration**

- Development objectives:
  - to sequester carbon through local-level natural resources management
  - To reduce risks of production failure in drought-prone area by providing alternatives for sustainable production
- Established a Revolving Fund to promote community based micro-credit institutions
- Credit sub-committees established and trained in fund management and bookkeeping
- Overall repayment rate of 62% is very good based on local average collection rate of only 45%



## **Pakistan: Fuel Efficiency in Transport**

- “FERTS” project established an Energy Conservation Fund to finance purchases of tune-up equipment
  - Extensive stakeholder consultation
  - 9 member Board of Directors (including Govt, private sector, NGOs)
- 180 tune-up systems set-up within next 12 months
- Established legal structure for management of fund
- Complicated system of financial recoveries required to deal with the repossession of equipment from owners who default on payment (not envisaged in original project design)





## Hungary: Public Sector Energy Efficiency Programme

- Improve energy efficiency in the public sector by removing market barriers & promoting such projects in municipalities, hospitals, other public institutions
- Directly generating additional 45 to 75 projects
- Provides support for cost-sharing feasibility studies & energy audits
  - "Letters of approval" granted to municipalities (guarantees support, rather than providing cash up-front)
  - *incentive to succeed* method, where reimbursements made when EE projects are implemented
  - Complements government's EE credit program



## Thailand: Biomass Power Generation and Cogeneration

- Project reduces GHG emissions through biomass co-generation replacing fossil fuel use
- GEF support of partial risk guarantees
- Initial design:
  - capital investment costs funded through direct loans from Japan Bank for International Cooperation (JBIC)
  - risk guarantee shared by GEF and Industrial Finance Corporation of Thailand (IFCT)
- Current design:
  - JBIC direct loan agreement replaced by a commitment to support IFCT's generic Energy Protection Programme
- Challenge: required payments of partial risk guarantee extend beyond 7 year project lifetime



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*Barriers*

## Impediments and Barriers Faced

- Currency risk –
  - currency depreciation can lead to insufficient funds for project implementation
  - level of risk can scare donors/investors
- Quality & suitability of local financial partners –
  - key to a successful project
  - more complicated in countries with little experience (e.g., necessary legal structures/framework, system of financial recoveries)
- Investment profitability of the project –
  - Minimum level of profitability/expected returns



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*Lessons Learned*

## 6 Lessons Learned

- Appropriateness of new financial mechanisms
  - burden of setting-up new financial mechanisms (legal/admin burden)
  - consider using existing funds or institutions
  - not appropriate to require innovative financing element in every project
- Recognize benefits of establishing loan funds at local level
- Design for sustainability with “*smart subsidies*”
  - GEF grants used as “smart subsidies” that do not undermine, but encourage market transformation



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*Lessons Learned*

## 6 Lessons Learned (continued)

- Provide for capacity building & training
  - project should provide adequate training in fund management, booking & clerical functions
- Provide “incentives to succeed” to promote action
  - build-in reimbursements for cost-sharing only when EE projects are actually implemented
- Fully design financial mechanisms up front
  - avoid delays in project implementation by completely designing financing mechanisms & agreements before projects are implemented



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*Applicability*

## Applicability

- Funds used for innovative financing have not been managed directly by UNDP
  - GEF grant provided to government who sets up financing mechanisms through local govt institution or commercial bank
- Network of UNDP Country Offices
  - allows for close monitoring & evaluation
  - identifies local counterparts
  - advises on individual developing country context



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*Conclusions*

## Conclusions

- UNDP's experience in the climate change area relates to establishing funds and risk mitigation mechanisms
- Major concerns: currency risk, suitability of local partners, project profitability
- Not all countries have the existing capacity to deal with innovative financing mechanisms



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*Recommendations*

## Recommendations

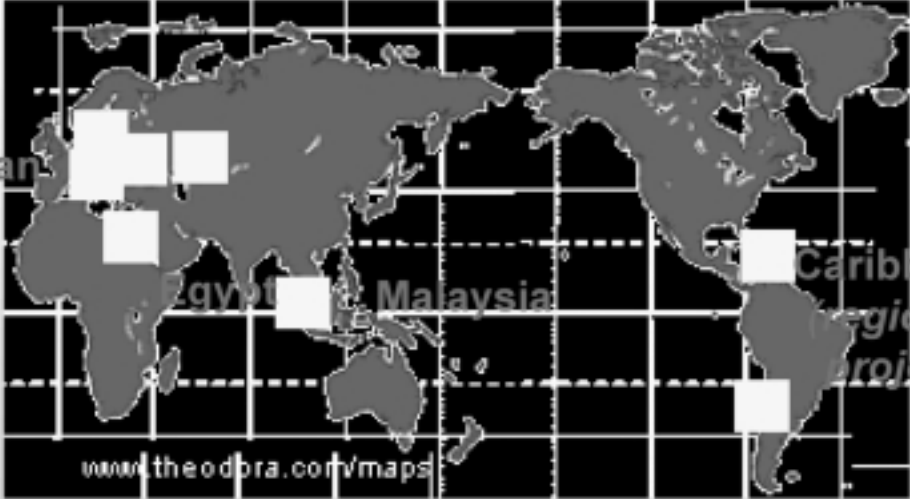
- UNDP can offer selected innovative financing modalities already designed and tested
- Project should make use of institutions/groups with some pre-existing capacity
- One cannot force an innovative financing element into all projects
- Several UNDP Country Offices are already experienced in monitoring & evaluating such programmes

undp *Recent Projects*

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## Range of Experience:

*9 Recently Approved Projects in 22 Countries*



Croatia  
Kazakhstan  
Poland  
Slovenia  
Ukraine  
Egypt  
Malaysia  
Caribbean  
(Regional project)

[www.theodora.com/maps](http://www.theodora.com/maps)

## **“UNIDO EXPERIENCE ON CONCESSIONAL LENDING: AN EXAMPLE WITHIN THE REGIONAL AFRICA LEATHER AND LEATHER PRODUCTS DEVELOPMENT SCHEME”**

### **Based on the work of:**

Aurelia Calabrò in Bellamoli  
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## **1. INTRODUCTION<sup>1</sup>**

This paper entitled, “UNIDO Experience on Concessional Lending: An Example within the Regional Africa Leather and Leather Products Development Scheme”, is based on a successful example of technical assistance targeted at the private sector, which was developed under a large-scale leather and leather products development Programme implemented by UNIDO in two phases in Eastern and Southern Africa. The Programme followed a strategy of targeting interventions at every level of leather production and marketing chain. In addition, it considered the associated environmental impact of leather processing.

The selection of the private sector as the main target beneficiary of this Programme, assured ownership, and in the long-term, also built on its self-sustainability, through the creation of the so-called Revolving Fund Operations (RFO) mechanism. It was agreed between the government authorities concerned and the project management that such assistance could be provided if these companies, selected to act as “demonstration plants”, were to pay the value of the machinery supplied by the project in local currency to a fund under the control of a suitable non-profit organization, such as a leather institute or tanners association, which in most cases has been established by or strengthened through the support of UNIDO. In this respect, of particular significance was the creation by the Programme of the Eastern and Southern Africa Leather Industry Association (ESALIA).

The RFO was created under the circumstances when the major UNIDO donors insisted that UNIDO should increase its assistance to the private industry. At that time, however, there was no mechanism available to provide such assistance except through African commercial banks. It should also be noted that companies located in many of the African countries could not obtain foreign exchange even for imports of essential spare parts.

On the basis of the experience gathered during the implementation of this *modus operandi*, it became evident that some elements of the RFO required certain improvements, such as changing the term from “Revolving Fund Operations” to “Repayment Fund”, as well as improving the procedures for payback arrangements, due to the criticism on the so-called “market distortion”.

The RFO has played a catalytic role in the further development of this sector and also built in a self-sustainability to the leather programme assuring its continuation.

Some examples of the utilization of the RFO have been provided in this paper.

<sup>1</sup> The speaker through a presentation of a slide will provide a brief overview of the industrial hides and skins leather and leather products sector.

## 2. BACKGROUND OF THE PROJECT

This paper is based on a successful example of technical assistance targeted at the private sector – hides and skins primary producers, tanners, and leather products manufacturers – which was developed under a large scale leather and leather products development Programme implemented by UNIDO in two phases in Eastern and Southern Africa, since 1989, over a period of 13 years.

Phase 1 of the Africa Leather Programme<sup>2</sup> covered the following countries: Ethiopia, Kenya, Malawi, Sudan, Tanzania, Zambia and Zimbabwe. During this Phase, considered to be a pilot scheme, the implementation of the Programme focused on the early stages of leather industry operations for raw material and semi-processed products.

In 1992 Phase 2 of RALFIS<sup>3</sup> was conceived in order to demonstrate the sustainability of development programmes initiated by UNIDO with the private sector. Three additional countries namely, Botswana, Namibia and Uganda were included.

The Programme followed a strategy of targeting interventions at every level of leather production and marketing chain. In addition, it considered the associated environmental impact of leather processing.

The RALFIS was structured to cover seven components, namely: Programme Management, Hides and Skins, Private Industry Development, Environment, Gender Development, Institution Development, and Marketing.

### Source of Funds

The total contributions obtained for Phase 1 were approximately US\$ 13 million, and for Phase 2, approximately US\$ 14 million. The two phases of the programme were mainly funded from multilateral sources, namely, through Special Purpose Contributions of donors to the UNIDO Industrial Development Fund. The main donors were/are: Austria, Czech Republic, Denmark, Finland, France, Germany, Italy, The Netherlands, Switzerland, and UNIDO Industrial Development Decade for Africa Fund (IDDA).

## 3. IMPLEMENTATION OF THE PROJECT

### Strategy for the long-term sustainability of RALFIS

One of the key features of this Programme has been the selection of the private sector as the main target of UNIDO technical assistance. This in turn assured ownership of the Programme, and in the long-term, also built on its self-sustainability.

### How was this made possible?

Under the Regional Tannery Rehabilitation project, assistance was provided to selected private companies to act as “demonstration plants”. It was agreed between the government authorities concerned, and the project management that such assistance could be provided if these companies were to pay the value of the machinery supplied by the project in local currency to a fund under the control of a suitable non-profit organization, such as a leather institute or tanners association, which would use these funds for further work in hides and skins improvement and/or similar activities in the interest of the country’s leather and allied industries sector. Such activities may include organization of hides and skins improvement seminars, starting up new collection points, purchase of improved flaying tools and equipment, as well as remuneration of international and local experts on special short-term improvement assignments.

This mechanism, known as the Revolving Fund Operations (RFO), was developed in the participating countries, to channel the assistance to the industry. The RFO ensures that funds are continually available for the improvement of quality of the raw material, thus assisting in improvement of the leather at the tannery stage. At the same time, the linkage between tanners, footwear and leather goods manufacturers, and leather institutions/associations in each country is strengthened as they serve as an instrument to influence policy makers to formulate appropriate strategies for the development of the sector. This subsequently contributes to the self-sustainability of the hides and skins improvement and related activities upon completion of the Programme. The “revolving fund” is operational in Ethiopia, Kenya, Malawi, Namibia, the Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

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<sup>2</sup> Regional Africa Hides and Skins, Leather and Leather Products Improvement Scheme

<sup>3</sup> Regional Africa Leather and Footwear Industry Scheme (RALFIS)

### **How does the RFO operate?**

In all the countries, the RFO's administration is usually entrusted to a national leather industry association, which in most cases has been established by or strengthened through the support of UNIDO. The management of the RFO, including monitoring of the repayments and decision making on the use of the funds, is in the hands of the Steering Committees consisting of representatives of the association, UNIDO and in some countries, a ministry or another government body. The relevant accounts are opened in banks, and are externally audited once a year.

Prior to procuring the equipment by UNIDO, the beneficiary is requested by the association to send a letter expressing its commitment to pay back the value of the equipment. The industry association in charge of the RFO also enters into a leasing agreement with the ultimate beneficiary specifying the terms of utilization of the equipment (purpose, insurance), repayment (starting date, quarterly payments, duration) and transfer of ownership (after the final payment). This agreement is signed before the transfer of the ownership title to the national association. As a general rule, the ownership of the equipment is transferred to the national association at the time the equipment is installed and becomes operational.

While the above principles are similar for all countries, some detailed terms agreed upon with the local Government authorities differ. In its initial stage, in most countries, the beneficiaries neither paid any interest on the outstanding balance nor any import duties on the equipment delivered by the Programme and the repayment in local currency disregarded fluctuations in the exchange rate. In some countries, the terms stipulated payment of interest on the outstanding balance in case of default in payment. In other countries, the value in local currency was supposed to be adjusted on an annual basis to the changes in the exchange rate. The duration of repayment was between 5 to 10 years. Defaults in payments as stipulated by the Agreements have occurred in all the countries, although to varying degrees, as repayments were delayed.

These differences were detected in the course of utilization of the RFO and were subsequently modified over the years to make the system more efficient. (This will be covered in a later paragraph on improvements)

### **Flow of funds**

In order to make this RFO more comprehensible, it should be noted that the funds provided by the donors to UNIDO are utilized, among other technical assistance activities, for purchasing equipment for selected private companies, based on criteria set by the industry and the Ministry of Industry of each of the participating countries. It should be underlined that no "cash funds" or loans are provided to the enterprises, and the equipment is paid into the repayment fund under the control of a non-profit organization, which utilizes these funds for the further development of the sector.

### **What is the role of the Leather Associations?**

Most countries within the region lack a coherent sector-specific policy for the industry. It is necessary to increase government awareness of the sub-sector's needs, and the effects of government legislation. The management of the Programme therefore felt that the presence of a non-profit organization such as a leather and leather products association would be needed in each country within the region to represent all of the interests of the leather and leather products manufacturers, from primary producers to retailers. This would ensure that the views expressed in discussions with governments were the clear distinctive position of a unified industry, and therefore eliminate the fragmentary stance of small groups.

Of particular significance was the creation by the Programme of the Eastern and Southern Africa Leather Industry Association (ESALIA), which has gradually intensified its importance to the point of being recognized at the international level as the only *regional association* in sub-Saharan Africa representing the interests of the leather sector.



## 4. IMPEDIMENTS AND BARRIERS FACED

### Operational problems encountered

The status of RFO revealed that the financial discipline created certain problems, which needed to be improved:

- On the whole, most of the companies participating in the RFO operations are up-to-date with their payback schedules, with only a few cases noted. In Zimbabwe, for example, on the repayment side, there have been a few cases where companies have failed to repay for the equipment and these, have been repossessed and allocated to other companies.
- Another factor to be considered was the fixing of the starting date of repayment – in some cases, without any grace period – at the moment of installation of equipment, which was a rather severe measure, particularly for the small enterprises. In a few cases, the beneficiaries did not start repayment as scheduled due to delays in the installation of equipment. In this respect, the grace period was extended.
- It is apparent that the terms of the RFO, which were agreed upon several years ago, might have implied a subsidy component, which may have been perceived as market distortion or violation of principles of equal chances. This perception was strengthened if the support was provided to a well-established medium-sized or large company with access to bank credits or in case of default in payment.

## 5. LESSONS LEARNED

### Improvements to the “RFO Concept”

On the basis of the experience gathered during the implementation of this *modus operandi*, it became evident that some elements of this mechanism required certain improvements.

- The first action taken was the change of the term from “Revolving Fund Operations” to “Repayment Fund”. This is explained by the fact that since the funds from RFO can be used and are used for purposes, which do not imply repayment to the RFO (training workshops in hides and skins improvement, fuel and maintenance costs of motorcycles and cars used by the extension officers, etc.), the term “revolving” is rather misleading.
  - Based on the criticism on the so-called “market distortion” the procedures for payback arrangements have been improved as follows:
    - The equipment should be categorized, depending on its purpose, namely whether it serves commercial (profit making) or non-commercial (environmental, or social) purposes;
    - Equipment serving non-commercial objectives may be provided on terms implying a subsidy (waiver of interest, foreign exchange risk, longer repayment period, etc.); in cases of public interest, the terms may allow for a grant component;
- Equipment serving commercial purposes (production equipment) should be provided on terms equal or close to commercial terms.
- In the case of production equipment, the mechanism should be used to exclusively support SMEs. Compared to a loan from a bank, the project will still have a potential advantage to offer to the small-scale industry: easier access to the credit (no collateral required) and the accompanying advisory and training services which are provided free of charge.
- In all cases, the use of this mechanism should be subject to prudent analysis not only of technical requirements and needs of the company but also of its economic and financial capabilities to pay back the installments in order to avoid as much as possible, defaults in payment.

### General considerations

- The RFO was created under the circumstances when the major UNIDO donors insisted that UNIDO should increase its assistance to the private industry. At that time, however, there was no mechanism available to provide such assistance except through African commercial banks, which had lending interest rates of between 25–30% upwards. This is still the case today in some countries.

- Also at that time companies located in many of the African countries could not obtain foreign exchange even for imports of essential spare parts. Therefore the RFO was the way to provide the assistance that was so badly needed.
- Even today when discussing assistance from UN sources through other international organizations such as the Common Fund for Commodities (CFC), the funds to be provided for small- and medium-sized industries as loans for purchase of equipment have to be channelled through commercial banks and then the companies have to pay interest rates that are not feasible to serve in this type of low profit-margin industry.

Referring to the market distortion, in general, the policy of the commercial banks is that the companies repay the normal interest rate applicable in the country. The market is, however, already so distorted by imports of second hand goods, cheap government subsidized goods from Far East using child labour, prison labour and any other means, that the small industries in Africa have no chance to compete with such goods – especially if forced to pay the level of interest rates presently applicable through commercial channels in their countries.

## 6. APPLICABILITY TO DEVELOPING COUNTRIES

- Hides and Skins Improvement: activities on price structure guidelines based on raw material grades were carried out. In Kenya, Tanzania and Uganda, hides and skins improvement activities were financed by RFO. Extensive training was provided in the field of hides and skins improvement in the target areas in each of the countries.
- A major output of the Programme was the establishment of the Training and Production Centre for the Shoe Industry (TPCSI), which has enabled institutional development. Of significance, the Centre has spawned the establishment of new enterprises for footwear production such as a shoe upper parts plant in the Leather Industries of Kenya, and the Deras Shoe Production Company. The training capacity is now also being utilized by the UNDP/Kenya Government programmes on poverty reduction, by training disadvantaged groups (women, disabled and street children). The Centre continues to act as an advanced training facility for other countries in the region.
- Activities were undertaken to support the realization of well-designed Effluent Treatment Plants (ETPs) and/or rehabilitation of existing ETPs as well as training of qualified ETP operators in Ethiopia, Kenya, Tanzania and Zimbabwe. Agreements were signed with individual tanneries to pay back the equipment of the “Repayment Fund”.
- The leather and leather products associations became a real focal point of the programme as they administrated the RFO operations.

## 7. CONCLUSIONS

- A distinctive feature of the Programme is extensive assistance provided to the private industry. In view of the privatization process in most of the countries in the region, the Programme accommodated this change by establishing or strengthening already existing leather industry associations, and by creating the Revolving Fund Operations (RFO), now known as “Repayment Fund” – thus facilitating direct support to industry.
- This experience has shown that the sectoral associations represent reliable partners for non-traditional donors (e.g. EU, CFC, CDI etc.) to channel technical cooperation funds, in view of the new political trends of involving private industry in the design and implementation of programmes for the development of a specific industrial sector.
- In order to develop African small-scale leather based industries a lending mechanism such as the experimental RFO should be developed further.
- The RFO has played a catalytic role in the further development of this sector and also built in a self-sustainability to the leather programme assuring its continuation.



# UNIDO

## Technical Workshop on Concessional Lending

Montreal, Canada

22 July 2002

### “UNIDO Experience on Concessional Lending: An Example within the Regional Africa Leather and Leather Products Development Scheme”

Aurelia Calabrò in Bellamoli  
Industrial Development Officer  
Agro-Industries and Sectoral Branch  
Programme Development and Technical  
Cooperation Division



#### HIDES & SKINS IMPROVEMENT

Livestock



Flaying



Conservation



Transport



Environmental protection

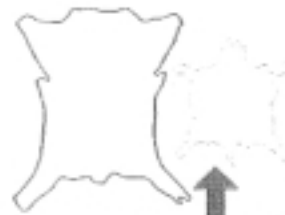
Marketing



#### LEATHER PRODUCTS MANUFACTURE



#### TANNING



Management



Institution building

Quality control



#### Support INDUSTRIES



Components



Moulds, tools, equipment



Tanning chemicals

#### Support ACTIVITIES



## THE REVOLVING FUND (RFO)

### *Target Beneficiaries*

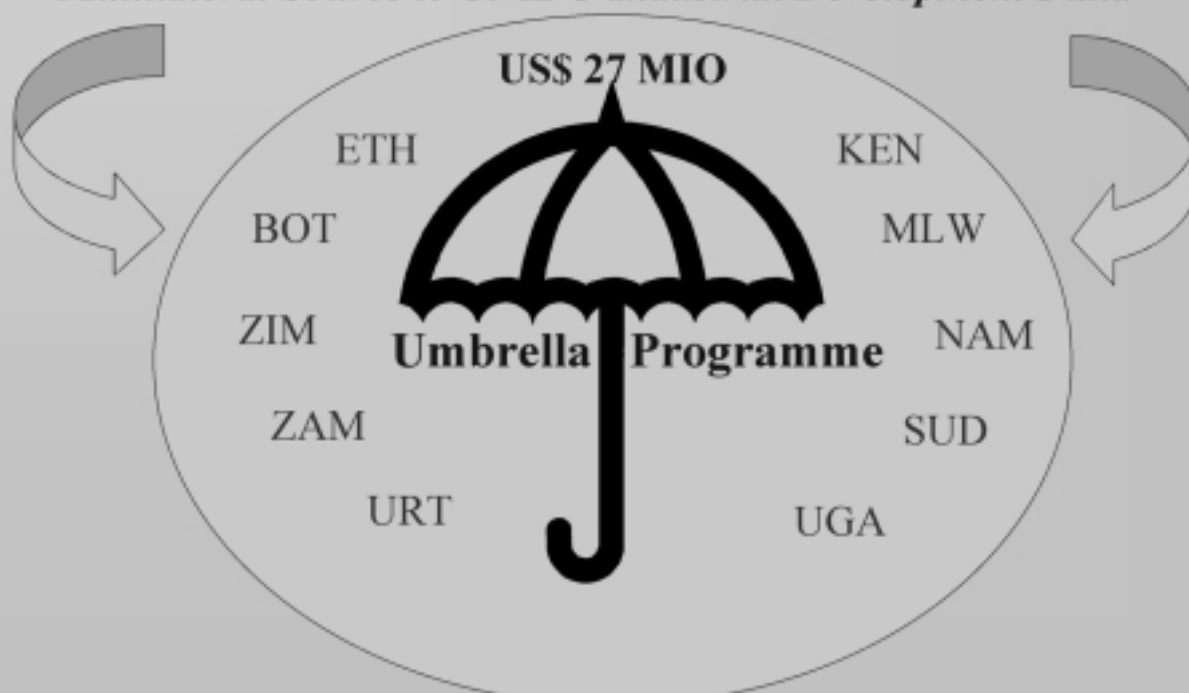
Example of UNIDO Technical Assistance targeted at the **Private Sector**, namely: hides and skins primary producers, tanners, and leather products manufacturers, developed under a large scale leather and leather products Programme implemented, in two phases, in Eastern & Southern Africa, since 1989.

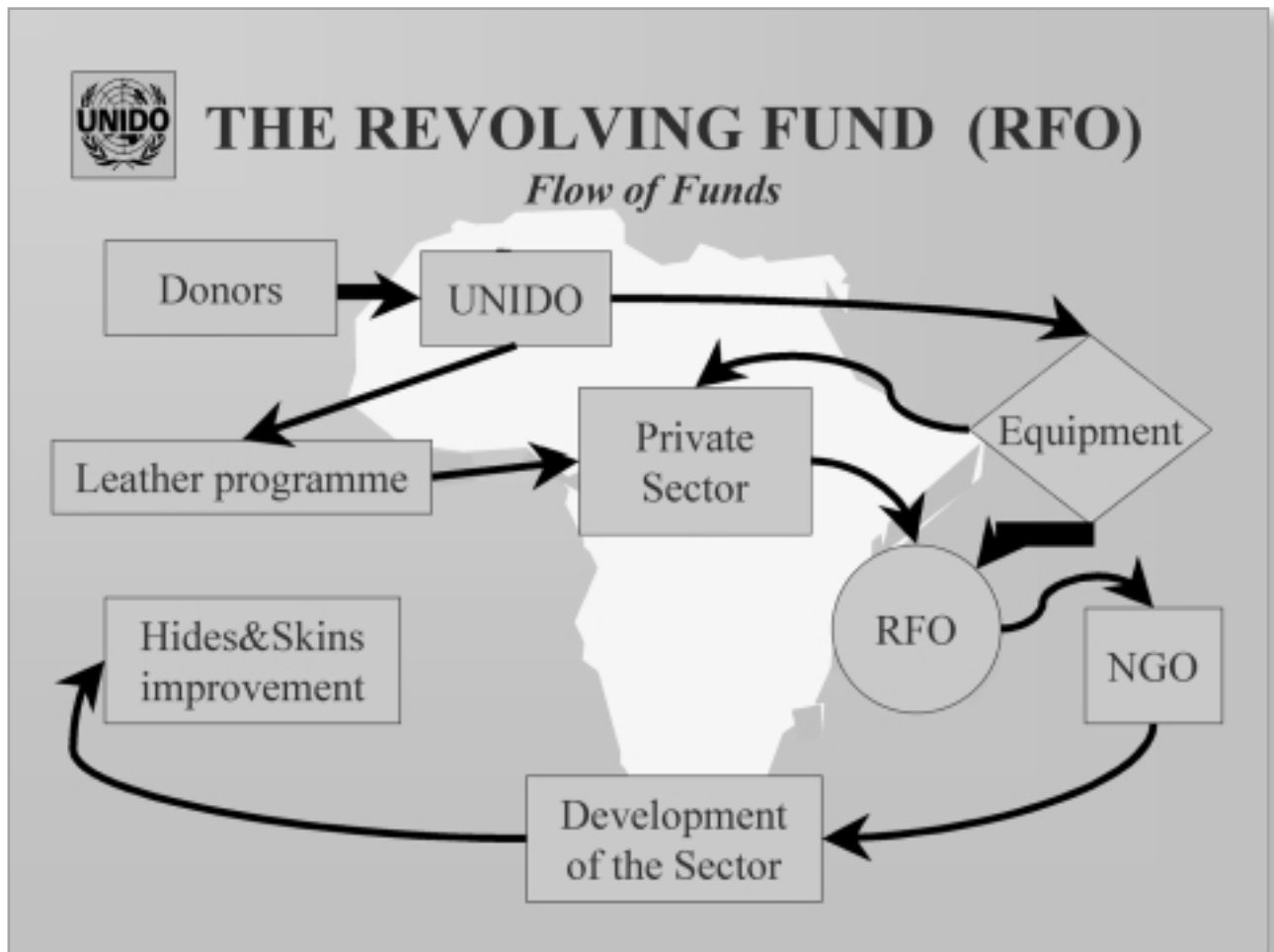



## THE REVOLVING FUND (RFO)

### *Source of Funds*

*Multilateral Source to UNIDO Industrial Development Fund*





 **THE REVOLVING FUND (RFO)**

A mechanism, known as the Revolving Fund Operations developed to channel the assistance to the private industry.

*How was this made possible?*

Assistance was provided to selected private companies to act as “**demonstration plants**” but they were to pay back the value of the machinery supplied by the project in local currency to a fund under the control of a suitable non-profit organization, to use these funds for further work in hides and skins improvement and/or similar activities in the interest of the country's leather and allied industries sector.



## THE REVOLVING FUND (RFO)

### *How does the RFO operate?*

- The RFO's managed by a leather association.
- Accounts opened in banks audited once a year.
- A letter of commitment sent to the association by the beneficiary before equipment purchase.
- A leasing agreement signed between the association and the ultimate beneficiary before the transfer of the ownership title to the national association.
- Terms agreed upon with the local Government authorities differ.



## THE REVOLVING FUND (RFO)

### *Impediments and barriers faced*

#### *Operational problems encountered*

- 1) Payback schedules
- 2) The fixing of the starting date of repayment
- 3) Market distortion and violation of principles of equal chances





## THE REVOLVING FUND (RFO)

### *Improvements to the “RFO Concept”*



- Change of the term to “Repayment Fund”
- Equipment categorized:
  - commercial (profit making) or
  - non-commercial (environmental, or social);
- 3) ‘Non-commercial’ equipment provided with a subsidy;
- ‘Commercial’ equipment provided equal or close to commercial terms;
- ‘Commercial’ equipment, RFO used to support SMEs only



## THE REVOLVING FUND (RFO)

### *Conclusions*

- RFO created when UNIDO requested by donors to target private industry;
- African companies could not obtain foreign exchange;
- No mechanism in place except through banks (interest rates between 25-30% );
- Market already distorted by imports of second hand goods, cheap government subsidized goods =>African SMEs no chance to compete with such goods .
- RFO played a catalytic role for this sector and built in a self-sustainability to the leather programme



## THE REVOLVING FUND (RFO)

### *Applicability to developing countries*

- Hides and Skins Improvement Activities
- Training Centres (TPCSI)
- Effluent Treatments Plants (Zimbabwe)
- Leather and Leather Products Associations





**BURKINA FASO**

Victor  
YAMEOGO:  
NO mandated  
paper

## TECHNICAL Workshop on Concessional Lending

- MONTREAL Canada
- 22 JULY 2002

Speaker Victor YAMEOGO

National Ozone Unit Burkina

Tel: +226 30 63 97

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## TO:

- Recall
- Compare
- To Move on
- To gather Take action
- To phase-out

## Recall

- Decision: « The multilatéral fund shall, meet on a grant basi or concessional basis as appropriate, and according to criteria to be decided upon by the parties, the agreed incremental cost » And others decisions

## Compare

- Financial mechanism to implement the Montréal Protocol has no Comparison with another mécanisme such as
  - Lessons learnt
  - Facility
  - concensus

## TO GO AHEAD

- To make innivations related Financial matters For MP implementing
- To maintain the momentum for CFC total phase -out

## To gather take Actions

- To keep all things moving, we always need a common position ( art2,art5) facing to this big problem

## To Phase Out

- The way to phase should include political decisions and technical matters and financial mechanism
- Concessional Lending could be a good alternative to meet our objectives even if we are still about

# EXPERIENCE OF Burkina Faso with Concessional Lending Mecanism

Not in Montréal protocol Aeria

As « Poor » country government and donor  
has implementing concessional lending in  
several sphere since most of local bank in  
our countries are useless

## Spheres

SFRAW

SFSMI

SFIC

Victor  
YAMEOGO:  
Original version:  
Français

## Legend

- **SFRAW:** Support fund to the remunerative activities of Women
- **SFSMI:** Support Fund to Promote the Small and medium enterprises
- **SFIS:** Support fund to informals Sectors

## Case OF SFRAW

- The SFRAW is an institution created by the government of Burkina faso and placed under the supervision of the ministry of economy and finance
- **Mission**
  - Promote women access to the credit by:
  - Giving them loans or giving them the guaranty for the credit

## SUITE

- Training them to good management capacities

## Who are the beneficiaries of SFRAW

- Urban and rural feminine groupings
- Women working in the informal sector or craftsman trading sector
- The creators and heads of small and medium size companies

## CONDITIONS

- The feminine groupings supervised by a public or private company can have credit from \$70 to \$2700
  - The re-imbusement is monthly
- Women for the informal secteur and craftsman trading sector can have from \$70 to \$680
  - The re-imbursment is weekly

## Suite

- The members of the group as well as the individual customers must as soon as the credit obtained contribute to a guaranty fund at an amount equaling to 10% of the total of the money received.
- In general the period of the re-imbursment last from six to twelve monts and the interest rate is 10% per year
- The condition for the small entreprise are determined case by case



## WHO ARE THE PARTENERS OF THE SFRAW

- Among the partners of the institution we have international organisations and local structures:
- SO
- UNDP is in charge to provide the technical assistance the training and the equipment
- The economic institute of development (EID) of the world bank is in charge of the training of the customers through the canal of the program FEFGA ( women and training in applied management) supervised by SFRAW

## Suite

- The United nations program for population ( UNPF ) and united nation program for children (UNPC) also give they support in the domain of education and training

In Burkina faso the SFRAW is supporting by local like WHO (World health organisation),  
NGO's local structures

## Results

- Some important results have been noticed in the domain of credit and training.
- Into ten year existing the SFRAW has allocated \$10.5 millions USD to 300411 women

## COMMENTS

- This presentation has no relationship with implementation of the Montréal protocole
- But it's interesting because it's good mecanisme involving many persons, structures etc.
- If concessional lending is one day adopted as an alternative of financial it could work very well in our countries

## Suite

- Many questions still pending
  - Is concessional loans concern LVCC?
  - What will be the role of World Bank?
  - G7 decide at their last meeting talking about combatting povety to increase grant through out the world .
  - Is concessional lending can meet agreement of all of us? Etc...
-

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## ANNEX I

### WELCOME AND OPENING STATEMENTS

#### H.E. Tadanori Inomata

On behalf of the Government of Japan, I warmly welcome your attendance to this technical workshop. I express our deepest gratitude to the Fund Secretariat and UNEP/DTIE for the logistical and substantive support that they have provided us for the convening of the workshop. I also thank the World Bank, UNDP and UNIDO and the distinguished participants and experts who graciously accepted the task of preparing their technical contributions on the substantive issues before us.

The concept note which UNEP has circulated to you spells out a series of specific objectives of the workshop. Therefore, I will not dwell upon them except for underlining, as UNEP has stated, the importance of identifying and examining practical examples of workable concessional and innovative financing both inside and outside of the Multilateral Fund. This will promote active exchange of views on the objectives and modalities of concessional lending including pros and cons to Article 5 countries among the Member Governments of the Executive Committee as called for in Decision 35/61 of December 2001.

By way of opening the meeting, I should like to emphasize that since 1 July 1999, we entered a very critical stage of implementation of the Montreal Protocol, particularly in Article 5 countries. As these countries move toward the observance of all the phase-out targets for CFCs, halons and methyl bromide, they have to target increasingly diverse groups such as SME, end-users, farmers, agricultural cooperatives, etc... In order to meet diversified financial needs of Article 5 countries, the financial mechanism of the Montreal Protocol shall be able to provide a variety of flexible financial modalities. Although the Multilateral Fund is not the only component of the financial mechanism under the Montreal Protocol that should be complemented by other means of multilateral, regional, and bilateral co-operation as envisaged under Article 10 paragraph 2 of the Protocol, the Multilateral Fund now faces a number of challenges in the funding of crucial phase-out projects.

For example, the Fund is expected to finance projects with lower cost effectiveness from now on and often expected to fund projects to which the precise criteria for determining eligible incremental costs are hardly applicable. Yet, as we move forward for 100% phase-out in the remaining sectors in developing countries, such situation will be more evident where there exists a pressing need for phasing out ODSs to comply with the control schedules and there is an urgent need for funding relevant projects but having low cost effectiveness or having net incremental savings. Obviously, such projects are not technically eligible for funding by the Multilateral Fund. If I may cite a typical case that my colleague in Tokyo discovered recently through their assistance to the country consultation in Sri Lanka, I shall remind you that the Sri Lankan project related to the use of CTC for activated carbon industry was disapproved on that basis (Dr. Smatipala or his colleague may wish to elaborate on this case.

This may call for review of the concept of "agreed incremental cost" which originally meant additional expenses that the Article 5 countries are supposed to bear in implementing the control measures.

This is just one instance to indicate how the financial requirements of the Article 5 countries are large and diverse. It certainly justifies thorough examination of all types of financial requirements of these countries for the ODS phase-out as well as means available both in the public and private sectors.

Today, we enjoy the representative participation of knowledgeable stakeholders on this issue. We also benefit from full range of analysis provided by them. I hope that our discussion will be fruitful and able to fulfil the task assigned to us by the Executive Committee.

Thank you.

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## **Mr. Rajenda Shende**

Ladies and gentlemen, UNEP is very pleased to be associated with the organisation of this 'Technical Workshop on Concessional Lending'.

UNEP has received remarkable cooperation from the World Bank, UNIDO, UNDP and the Multilateral Fund Secretariat in designing and organising this event. In spite of the fact that all agencies are involved in 'back-breaking' preparations for Executive Committee Meetings, as well as the implementation of activities to assist our colleagues in Article 5 countries, they have been 'lending' their full support and made 'concessions' in their time-tables to help bring about this 'event on' concessional lending. Each of these international organisations has expertise in financing projects aimed at sustainable development. UNEP is proud, therefore, to be a partner in this event.

This workshop has a qualified title, i.e.: 'Technical Workshop'. It is not a workshop that seeks to debate on the acceptability of 'concessional lending' under the Montreal Protocol, nor is it intended to spark a 'political debate' on replacing the existing 'financial mechanisms' by some other 'innovative mechanisms'. So what does it aim to do? It aims at identifying and examining practical examples of 'innovative financing' that have worked both inside and outside of the Multilateral Fund, particularly in the field of environmental protection and sustainable development, and to explore the conditions and situations where they could or could not work in Article 5 countries for the protection of the ozone layer. Today's dialogue will not be aimed at potent prescription, but rather at detailed description with a focus on lessons and messages from the case studies.

After ten years of operation, the Multilateral Fund has entered a new era. It is an era in which the results of actions will be counted more than the mere rudimentary number or magnitude of actions. It is an era of compliance to the Montreal Protocol. The market place in which the Protocol operates has also changed over the last 10 years. New technologies that are not only environmentally-friendly, but economically advantageous, are rapidly being developed and deployed. The financial world is undergoing vast and turbulent changes. This new era requires a new way of thinking, a new way of doing business. Political agreements may or may not lead to adopting 'business unusual' under financial mechanisms, but that cannot be an excuse for not thinking in a new way.

UNEP hopes that with this backdrop of the scenic beauty of a Canadian lake, there will be free dialogue and open discussion on the issue of innovative financing.

UNEP's OzonAction Programme, as an incubator of innovations, is encouraged to facilitate such consultations and policy dialogues. With this approach, UNEP has been able to put into operation a number of new ways to build capacity and to implement the Protocol such as the networking of the National Ozone Units, Refrigerant Management Plans for the low volume consuming countries, the B2B internet portal for the international halon clearinghouse, etc.

In 1994 to 1995, UNEP and USEPA, with the help of the Air-Conditioning and Refrigeration Industry Association, held training courses on Refrigerant Management Plans in the Chiller Sector in Mexico City, Bahrain and Bangkok. For the first time the participants realised that refrigerant management and energy management for chillers can provide the opportunity for innovative financing of the phase-out of CFCs. The World Bank, through their extraordinary efforts, formulated the investment projects with innovative financing in Mexico and Thailand. We will be hearing about these case-studies today.

Ambassador Inomata has been a guiding torch in organising this event. He strongly believes in the strengths of the innovations and the opportunities that the Montreal Protocol offers for sustainable development, and so he requested UNEP to organise this workshop in consultation with the Secretariat of the Multilateral Fund and the other Implementing Agencies.

UNEP views this meeting as a platform to discuss the lessons of innovative financing, to assess their operations and impacts, and to take up a few real-life examples to explore their applicability within the framework of the Montreal Protocol. The Montreal Protocol is a bridge that links environment and development. A Japanese artist, Katsushika Hokusai painted an illustration of the bridge (the back cover of this report) that symbolises the exploration through innovative linkages.

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## CONCLUSIONS OF THE CHAIRMAN

1. In the context of exchange of views on pros and cons of concessional lending to Article 5 countries, a number of participants commented on the political acceptability of such lending. While such discussion could be more usefully explored in the intergovernmental bodies, it should be noted that there existed a good deal of convergence of views on the matter. The Executive Committee had reached a body of understanding on the possible guidelines and framework applicable to concessional lending that might be implemented in accordance with Article 10 of the Montreal Protocol. For example, the Executive Committee at the 13th meeting reached the conclusion that projects with net incremental savings were appropriate candidates for concessional lending. Moreover, it took note of the draft framework for concessional lending that the Secretariat proposed (Pages 4 and 5 of document UNEP/OzI.Pro/ExCom/29/59) as a useful basis for further discussion.
  2. Since 1 July 1999, the Montreal Protocol has entered a very critical stage of implementation particularly in Article 5 countries. As these countries move toward the observance of all the phase-out targets for CFCs, halons and methyl bromide, they have to target increasingly diverse groups such as SMEs, end-users, farmers, agricultural co-operatives, etc. In order to meet diversified financial needs of Article 5 countries, the financial mechanism of the Montreal Protocol should be able to provide a variety of flexible financial modalities, particularly for innovative financing approaches.
  3. Financial demands are growing. For illustration, according to the TEAP estimates, entire requirements of Article 5 countries for multilateral and bilateral financial resources both within and outside the Multilateral Fund would amount to US\$ 700 million demand for non-grant financing out of the US\$ 1500 million total requirement until these countries achieve 100% ODS phase-out.
  4. During this workshop, the experience of Implementing Agencies, bilateral agencies, the GEF and the Grameen Bank with concessional lending and innovative financing, including micro-credit was reviewed.
  5. Grants have been predominant in the early years of the Multilateral Fund's activities. There is now a need for innovative financing approaches.
  6. Implementing Agencies have given attention to larger enterprises because of the cost effectiveness of their projects.
  7. The Multilateral Fund is now entering the stage where the Executive Committee should finance projects involving more difficult sectors – micro-users and SMEs whose cost effectiveness for projects is lower than that of larger enterprises. This is inevitable in the view of the need for full compliance with the phase-out schedules.
  8. The question of equity must also be addressed.
  9. The earlier assistance provided to large companies does not represent a form of discrimination against smaller companies. Rather, at the time it was the most cost effective use of funds and was intended to maximise ODS phase out in the shortest time.
  10. How can we ensure improved cost effectiveness at the current stage in the Montreal Protocol process? Loans can make sense in this context.
  11. Two main approaches have been emerged from reviewing concrete case studies about different financing approaches presented at the Workshop (1) grants to countries to establish revolving funds (2) concessional loans provided by the Multilateral Fund directly to enterprises in Article 5 recipient countries.
  12. Legally speaking, each country must decide which approach is the most appropriate based on its own national situation and conditions. Most seem to favour grants to establish revolving funds.
  13. The 13th Executive Committee approved recommendations with regard to projects that might realise net incremental savings. The financing of such projects should be considered.
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14. If countries agree to accept innovative financing (i.e. grant-based revolving funds), then the next step is to determine how much concessionality is attached to it, e.g. will financing be interest free or with low interest rates attached?
  15. When designing innovative financing modalities, one should also take into consideration the fact that the objective of the financing is to phase out ODS, not to return a profit to the Multilateral Fund.
  16. Does there need to be a separate organisation or entity to manage and monitor the concessional lending/innovative financing mechanisms?
  17. Each case study has shown that there needs to be a strong local organisation to manage the concessional lending or Innovative Financing at the national level. It is sustained by the commitment of stakeholders, i.e. targeted groups such as micro ODS users, farmers or SMEs, and they should achieve phase out of ODS in a manner most suited to their local conditions as well as their commitment to repay the financial assistance to their revolving fund. Under these circumstances, the revolving fund represents the local population's will to sustain ownership based on country-driven approaches.
  18. The case studies also have shown that there are usually strong operational linkages to industry groups and manufacturers. Managerial Partnership is a good basis for operation of such a scheme.
  19. There is a need for capacity building assistance to ensure that the Article 5 countries have the management and technical expertise required to successfully implement innovative financing programmes. There is also a need for awareness raising activities to help establish strong consensus among the population to ensure sustainable development through the protection of the ozone layer.
  20. Regarding how to organise the provision of funds for concessional lending, the message received today is that the Multilateral Fund should provide the initial incentive – the catalyst – to organise the composition of the entire financing package, but should not constitute the entire financing package by itself. Consequently, the innovative financing programme should be designed so that funds are also provided by Governments, NGOs and enterprises. The review of existing financing schemes addressing the area of poverty as presented today proved that revolving funds established with grant assistance functioned well.
  21. The Workshop has discussed ineligible projects that if implemented, could achieve phase out goals. Possible candidates for concessional lending are: (1) projects having little incremental costs but with incremental savings and (2) the accelerated phase out projects ahead of the Protocol's control schedules. The Executive Committee might wish to review whether it ever examined such types of projects and identify the obstacles that prevented it from approving them.
  22. A key factor in convincing recipients of the acceptability of concessional lending will be a demonstration of flexibility in applying existing guidelines.
  23. Concessional lending schemes should specifically seek to promote adoption of the latest and most competitive technologies that produce incremental savings.
  24. The Workshop has heard about the need to move from a "grant culture" mentality towards a "loan culture" or "mixed approach culture". The exchange of technical information during this workshop, and the open dialogue about innovative financing mechanisms, is helping us make the transition to a new way of thinking about financing for environmental protection.
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## ANNEX II

### WORKSHOP AGENDA

- 09:30–09:50 Welcome and Opening Statement  
*H.E. Mr. Tadanori Inomata, Ambassador of Japan to Costa Rica*
- 09:50–10:10 Opening Statement  
*Mr. Sheng Shuo Lang, Deputy Chief Officer, UNMFS*
- 10:10–10:30 Opening Statement  
*Mr. Rajendra Shende, Head of Energy and OzonAction Branch, UNEP DTIE*
- 10:30–11:00 Coffee Break

#### **Session 1: Case studies related to Ozone Depleting Substances**

*Session Chairman: H.E. Mr. Tadanori Inomata*

- 11:00–11:15 Finance Matters: Innovative Financing for ODS Phase-out  
*Mr. Steve Gorman, Chief Montreal Protocol Unit, World Bank*
- 11:15–11:30 Thailand's Experience from Chiller Replacement  
*Mr. Anat Prapasawat, Vice President, Environment and Energy Development Center, Industrial Finance Corporation of Thailand*
- 11:30–11:45 Mexico's Chiller Project  
*Mr. José Urteaga, Fideicomiso para el Ahorro de Energia Electrica*
- 11:45–12:00 Turkey's Experience in Revolving Fund Mechanism  
*Mr. Senol Ataman, Project Coordinator, Technology Development Foundation of Turkey*
- 12:00–12:30 Discussion
- 12:30–13:45 Lunch
- 13:45–14:00 Experience of Burkina Faso with Concessional Lending Mechanisms  
*Mr. Victor Yameogo, Coordinator, National Ozone Unit*
- 14:00–14:15 Concessional Loan Program for Earlier Retirement of CFC-based Domestic Refrigerators with Poor Energy Efficiency in the Autonomous Palestine Territories  
*Mr. Mustaphe Kleiche, Agence Français Développement*
- 14:15–14:45 Coffee Break

#### **Session 2: Case Studies in Areas Other than Ozone Depleting Substances**

*Session Chairman: Mr. Rajendra Shende*

- 14:45–15:00 Extending the Frontiers of Microfinance: Grameen Bank Experiences with Microcredit  
*Mr. Khalid Shams, Deputy Managing Director, Grameen Bank*
- 15:00–15:15 Innovative Financing and Structuring of Environmental Projects: Some Nordic Experiences  
*Dr. Husamuddin Ahmadzai, Principle Executive Officer, Swedish EPA*
- 15:15–15:30 UNDP/GEF Experience with Innovative Financial Mechanisms for Environmental Projects  
*Mr. Frank Pinto, GEF Executive Coordinator, UNDP*
- 15:30–15:45 UNIDO's Experience on Concessional Lending within the Regional Africa Leather and Leather Development Scheme  
*Ms. Aurelia Calabro in Bellamoli, Industrial Development Officer, UNIDO*
- 15:45–16:15 Discussion
- 16:15–18:00 Round Table Discussion and Conclusion
- 18:00–20:30 Cocktail



## CONCEPT NOTE

To encourage the sharing of information about concessional lending, the Executive Committee at its 35th meeting approved this workshop as a bilateral project for the Government of Japan (GLO/SEV/35/TRA/233) scheduled for 22 July 2002. Background information on the subject of concessional lending is provided in Annex 1.

### Focus

The workshop is intended to be a *technical* workshop, not one that addresses the political acceptability of concessional lending. The workshop will focus on identifying and examining *practical* examples of where concessional lending/innovative financing has worked both inside and outside of the Multilateral Fund, and identify where they could work in Article 5 countries under the Multilateral Fund.

The workshop discussions will focus on the remaining areas under the Multilateral Fund, i.e. SMEs, large projects in "residual" sectors that have not yet been fully addressed (e.g. end user sector), and sectors that are only eligible for partial funding (e.g. aerosols, solvents). It will also include those projects that, though eligible, did not come forward due to financial reasons such as a lack of counterpart funding or the nullification of incremental costs due to operational savings. Possibilities for increasing the scope for technology choice will also be addressed.

### Objectives

The objectives of the workshop are:

- Promote exchange of views on the objectives and modalities of concessional lending including pros and cons, among Article 5 countries members of the Executive Committee;\*
- Deepen the understanding of operations of any practical and workable concessional lending schemes available within the United Nations system;\*
- Review relevant experience of the Fund and the implementing agencies, as well as Article 5 countries, in innovative financing in this field;\*
- Financing issues under the Multilateral Fund; and
- Practical examples of what types of concessional lending/innovative financing could be applied to Article 5 countries under the Multilateral Fund.

### Partners

The workshop is organized in cooperation with the Secretariat of the Multilateral Fund.

- Japan: Sponsor of the workshop:
- UNEP: Lead Implementing Agency (Paris), in consultation with UNEP's Financial Services Initiative (Geneva).
- UNIDO/World Bank: Co-organizers of the workshop.
- UNDP and Bilateral Agencies: Supporting and participating agencies.

### Participants

Participation in the workshop is on an invitation basis. More than one participant from each country will be allowed to participate in the workshop, within the constraints of the limited transportation facilities and meeting room space.

Category of participant	Country	Confirmed participants
Article 5 countries	Argentina	Mrs. Marcia Levaggi Mrs. Laura Beron
	Brazil	Mr. Benedicto Fonseca Mr. Evandro Soares

\* Explicitly required as per Decision 35/61.

<b>Category of participant</b>	<b>Country</b>	<b>Confirmed participants</b>
		Mrs. Renata Carvalho
	Burkina Faso	Mr. Victor Yameogo
	Burundi	Mr. Hakizimana Gabriel
	China	Mr. Liu Yi Mrs. Wang Qing
	Colombia	Mr. Javier Camargo
	Egypt	Mr. Abdel Rahman Fahmy Mrs. Salwa El Tayeb
	India	Mrs. Usha Chandrasekhar Dr. Sachidananda Satapathy
	Jordan	Mr. Ghazi Odat
	Malaysia	Mr. Choong Min Lee
	Mexico	Mr. Francesco Castronovo Mr. José Urteaga
	Nigeria	Dr. David Omotosho Dr. Oladapo Afolabi (Chair of Executive Committee)
	Senegal	Mr. Ndiaye Cheikh Sylla
	Syria	Mr. Khaled Klaly Ms. Najah Al Hamwwi
	Tanzania	Mr. Cleophas Migiro
	Thailand	Mr. Anat Prapasawad
	Tunisia	Mr. Hassen Hannachi
	Turkey	Mr. Senol Ataman
Relevant experts and resource persons from Article 5 countries	Grameen Bank Bangladesh	Mr. Muhammad Khalid Shams
Experts from non-Article 5 countries	Commission on Environment Cooperation	Mr. Scott Vaughan
Non-Article 5 countries	Australia	Mr. Milton Catelin Ms. Tamara Curll
	Belgium	Mr. Jozef Buys
	Canada	Mrs. Louise Lavigne
	Finland	Mr. Jukka Uosukainen
	France	Mr. Mustapha Kleiche
	Germany	Mr. Stephan Sicars
	Japan	Mr. Tadanori Inomata (Vice-Chair of Executive Committee) Mr. Kazuhiko Akashi Ms. Akiko Hayano
	Sweden	Dr. Husamuddin Ahmadzai
	United Kingdom	Ms. Helen Winterton
	United States	Mr. Paul Horwitz
CEIT countries	Estonia	Ms. Valentina Laius Mr. Margus Kört
Multilateral Fund Secretariat		Dr. Omar El-Arini Mr. Sheng Shuo Lang Mr. Unsgar Eussner Mr. Andrew Reed

Category of participant	Country	Confirmed participants
Ozone Secretariat		Dr. Michael Graber
World Bank		Mr. Steve Gorman
UNDP		Dr. Suely Carvalho Mr. Jacques Van Engel
UNIDO		Mrs. Calabro in Bellamoli Mrs. Seniz Yalcindag
GEF		Mr. Frank Pinto
UNEP DTIE		Mr. Rajendra Shende Mr. Jim Curlin Mr. Andrew Robinson Ms. Yasuko Sano
Report Writer		Mr. John Watson
MKI Travel		Mr. Anil d'Souza

## Timing

The workshop will last one day. As per Decision 35/61, the workshop is being held back-to-back with the 22nd Open-Ended Working Group Meeting (23–26 July, Montreal). The 37th meeting of the Executive Committee was held the preceding week (e.g. 16–19 July). The Technical Workshop on Concessional Lending will take place on Monday, 22 July.

## Venue

L'Estérel Resort and Convention Center  
39 Fridolin Simard  
Estérel, Québec, JOT 1E0 Canada  
Tel: +1 450 228 2571  
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## Outputs

A workshop report that can be used by “the Fund Secretariat and, as appropriate, the agencies to report on the findings of the workshop to the next appropriate Meeting of the Executive Committee.” The report will be available from UNEP both printed and electronic (PDF) format after the workshop.

## Roles of the Various Partners

- **Japan:** Funding oversight of the project.
- **UNEP:** Support the substantive and relevant logistical arrangements. Mr. Shende, Head, Energy and OzonAction Branch, is the focal point in UNEP regarding substantive matters related to this workshop. Mr. Jim Curlin, Information Manager, will assist with the organization of the workshop.
- **UNIDO:** Provide case studies (preferably 3) on practical examples of concessional lending/innovative financing within and outside of the Multilateral Fund. Mrs. Yalcindag, Director, Sectoral Support and Environmental Sustainability Montreal Protocol Branch, is the focal point in UNIDO regarding this workshop.
- **World Bank:** Provide case studies (preferably 3) on practical examples of concessional lending/innovative financing within and outside of the Multilateral Fund. Mr. Gorman, Unit Chief, Montreal Protocol Operation Unit, Environmental Department, is the focal point in the Bank regarding this workshop.
- **UNDP:** Provide case studies on practical examples of concessional lending/innovative financing within and outside of the Multilateral Fund. Ms. Suely Carvalho, Chief, Montreal Protocol Unit.

## Background Information

### Time Line

Action	Date	Comment
Discussions at 27th ExCom	24-26 March 1999	Decision 27/84
Discussions at 28th ExCom	14-16 July 1999	Decision 28/48
Discussions at 29th ExCom	24-26 November 1999	Decision 29/71
Informal Meeting on Concessional Lending (Beijing)	23 November 1999	Chaired by Canada
Discussions at 34th ExCom	18-20 July 2001	Decision 34/69
Discussions at 35th ExCom	5-7 December 2001	Decision 35/61. Project for workshop approved.
Japan MFA requests MFS to transfer funds for project to UNEP	27 December 2001	
Coordination meeting in Paris with UNEP, World Bank, UNIDO	31 January 2002	Participants: Shende, Gorman, Si-Ahmed, Graf, Bagai, Curlin
Coordination meeting with Japan, MFS, UNEP, UNIDO, World Bank	21 March 2002	Participants: Inomata, Akashi, Sodeno, Lang, Reed, Shende, Gorman, Si-Ahmed, Graf, Curlin

### Key Background Documents

*Report On Concessional Lending: A Discussion Paper by the Secretariat (Multilateral Fund Secretariat, UNEP/OzL.Pro/ExCom/28/53, 11 June 1999) and Addendum: Decisions Taken by the Executive Committee on Concessional Lending Since 27th Meeting in 1999*

*Outcome of Informal Discussions on the Informal Meeting on Concessional Lending (23 November 1999)*

*World Bank Information Paper, Financing Matters: Innovative Financing for Effective ODS Phase Out (October 2001)*

*Increased Scope for Choice of Alternative Technologies and Identification of Sustainable Technology to be Supported by Innovative Financing (UNIDO)*

## LIST OF PARTICIPANTS

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## ANNEX III

### REPORT ON CONCESSIONAL LENDING (A Discussion Paper by the Secretariat)

This discussion paper is submitted by the Fund Secretariat in response to the Decision 27/84 under which the Executive Committee decided:

- (a) To request the Secretariat, in cooperation with the Implementing Agencies, to prepare a document for the Twenty-eighth Meeting of the Executive Committee containing a compendium of past decisions and describing experiences so far with loan components;
- (b) To request the Secretariat and the Implementing Agencies to collaborate on real-life scenarios, highlighting issues and problems that might be associated with them, including such concerns as the lack of management capacity in some countries and the fear of augmenting the national debt of countries that were already in economic crisis;
- (c) To consider this subject again at the Twenty-eighth Meeting.

The paper includes two parts: Part I is a compendium of the decisions of the Meetings of the Parties and of the Executive Committee on loans and the experiences of the Multilateral Fund on loans and projects with loan components. Part II is a discussion of the real-life scenarios of funding ODS phase out with loans in Article 5 countries.

## PART I

### (A) A Compendium of decisions and experiences of the Multilateral Fund on Concessional loans

#### Decisions

1. **Time:** 1990

**Context:** London Amendment adopted at the 2nd Meeting of the Parties:

**Decision:** "The Multilateral Fund shall, meet on a grant basis or concessional basis as appropriate, and according to criteria to be decided upon by the Parties, the agreed incremental costs."

2. **Time:** 1991

**Context:** Implementation Guidelines and Criteria for Project Selection approved at the 3rd Meeting of the Executive Committee:

**Decision:** "Assistance for investment projects shall generally be provided in the form of grants. However, where the investment project has a short payback period (e.g. one to two years), financing may take the form of highly concessional loans. If an Implementing Agency believes that a highly concessional loan is appropriate for a particular project, it shall recommend this action at the next meeting of the Executive Committee. The Committee shall make the final decision on the terms of assistance."

3. **Time:** 1995

**Context:** Consideration of operating cost and savings in the halon portable fire extinguisher sub-sector at the 16th Meeting of the Executive Committee:

**Decision:** "The World Bank should be asked to prepare a study on how to set up a concessional loans mechanism; i.e., what options were available given current Implementing Agencies and their procedures, what steps would be required to put the mechanism in practice, and to what extent could the Bank use its resources or the resources from other sources for phase out in Article 5 countries."

4. **Time:** 1995

**Context:** Actions to Improve the Financial Mechanism for the Implementation of the Montreal Protocol, taken at the 7th Meeting of the Parties:

**Decision:** "Action 10: The study by the World Bank on the establishment of a concessional loan mechanism, requested by the Executive Committee at its Sixteenth Meeting, should be completed as soon as possible, and analyzed and discussed by the Executive Committee at its Nineteenth Meeting, and a decision on suitable future steps be taken by the Executive Committee by its Twentieth Meeting or by the Meeting of the Parties in 1996, as appropriate, with a view to starting the use of the concessional loans by the end of 1996, to the extent that the need and demand exist."

5. **Time:** 1996

**Context:** Consideration of a joint paper by the Secretariat and the World Bank on concessional loans at the 20th Meeting of the Executive Committee:

**Decision 20/39:** The Executive Committee decided:

- "(a) To take note of the joint World Bank/Fund Secretariat document on concessional lending for ODS phase-out;
- (b) To take note of the information provided during the discussion in the Committee on the interest expressed by the Inter-American Development Bank in providing concessional loans for ODS phase-out and the possibility of mobilizing funding from other sources, including the private sector;
- (c) To note also the reservations expressed by some members of the Committee with respect to the provision of concessional loans from the Multilateral Fund;
- (d) That, in the light of the discussion at the current meeting of the Executive Committee, there was a need for a wider examination of the various possibilities of concessional lending for ODS phase-out;
- (e) To request the Secretariat and the World Bank to prepare for submission to the Executive Committee, through its Sub-Committee on Financial Matters, a further report exploring the practical options for providing concessional loans for ODS phase-out in Article 5 countries, inter alia, through regional development banks and the private sector."

6. **Time:** 1997

**Context:** 21st Meeting of the Executive Committee:

**Decision 21/39:**

- "(a) To invite the Secretariat and the implementing agencies to submit for the consideration of the Executive Committee an innovative proposal for a demonstration project or projects to illustrate how concessional lending and other forms of innovative funding, including financing from the private sector, can be used to advance the phase-out of ozone-depleting substances by providing funding for projects and activities that may or may not otherwise be eligible for full funding in the form of grants from the Multilateral Fund;
- (b) To approve the request of the World Bank for US\$ 60,000 toward the cost of a concessional financing study to be carried out by the International Finance Corporation with a view to providing the Executive Committee with a comprehensive report that would:
- (i) Explore ways in which private-sector finance can be mobilized to assist Article 5 countries in phasing out ozone-depleting substances, particularly in sectors with a good return on investments in ozone-friendly technologies;
- (ii) Provide a final theoretical overview of ways in which concessional funding and other forms of innovative funding, including on-lending, can be used to augment and make most effective use of the resources of the Multilateral Fund."
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7. **Time:** 1997

**Context:** Consideration of the chiller replacement project from Thailand at the 23rd Meeting of the Executive Committee:

**Decision 23/30:**

- “(a) To request the World Bank to consider how innovative funding could be applied to this or a similar project;
- (b) That any project along these lines should be considered in the context of the paper on concessional loans currently being prepared by the World Bank.”

8. **Time:** 1998

**Context:** Consideration of a concept paper from the United States on concessional loans at the 24th Meeting of the Executive Committee:

**Decision 24/62:**

- “(a) To request members of the Executive Committee to submit their thoughts on the issue of concessional loans, in writing, to the Secretariat by the end of April;
- (b) To request the Secretariat to circulate those views to all members of the Executive Committee before the Twenty-fifth Meeting of the Executive Committee;
- (c) To request the World Bank to submit to the Twenty-fifth meeting of the Executive Committee the results of its study on concessional loans, and to resubmit its project proposal on concessional loans in accordance with Decision 23/30; and
- (d) To undertake substantive discussion on the subject of concessional loans at its Twenty-fifth Meeting.”

9. **Time:** 1998

**Context:** Consideration of a study by the International Finance Corporation of the World Bank Group on the scope for a non-grant financing facility for ODS phase out at the 25th Meeting of the Executive Committee:

**Decision 25/53:** “establish an open-ended contact group, with no specific terms of reference to consolidate all views and formulate a consensus on concessional lending. The group should begin its discussions immediately and should report back to the next meeting of the Executive Committee.”

10. **Time:** 1998

**Context:** Consideration of the report from the convener of the open-ended group at the 26th Meeting of the Executive Committee:

**Report of the open-ended group:**

“Progress was made by the Group in getting a better understanding of both the fears of countries in initiating concessional financing, and the broad conceptual framework under which such financing could exist;

There was agreement that it would be useful to more fully develop potential models for such financing, and provide examples, which, to the degree possible, describe how the fears were addressed;

There was agreement that it would be useful to ask implementing agencies, bilateral donors, Article 5 countries and companies to, if they desired, bring forward innovative ideas in this area for the Executive Committee’s consideration.”

11. **Time:** 1999

**Context:** Consideration of a paper from the United States on concessional loans at the 27th Meeting of the Executive Committee:

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**Decision 27/84:**

- (a) "To request the Secretariat, in cooperation with the Implementing Agencies, to prepare a document for the Twenty-eighth Meeting of the Executive Committee containing a compendium of past decisions and describing experiences so far with loan components;
- (b) To request the Secretariat and the Implementing Agencies to collaborate on real-life scenarios, highlighting issues and problems that might be associated with them, including such concerns as the lack of management capacity in some countries and the fear of augmenting the national debt of countries that were already in economic crisis.
- (c) To consider this subject again at the Twenty-eighth Meeting."

**(B) Experience of the Multilateral Fund with loan components**

12. With the exception of the Thai chiller project approved at the 26th Meeting, funding from the Multilateral Fund has been in the form of grants. In a few cases, the grants were transferred either partially or entirely into loans. Experiences of USEPA, UNDP and the World Bank in this respect were shared with the Secretariat. UNIDO referred to a project which it is currently preparing jointly with bilateral partners in Cuba for chiller replacement and which has a lending component, but did not provide any detail.

**USEPA/UNDP: The global mobile air-conditioning (MAC) project****Project Data:**

*Date of project approval by the Executive Committee:*

First phase of the project approved in Oct. 1992

Second phase approved in Nov. 1996, and

Third phase approved in Nov. 1998.

*Nature of funding (loan v. grant):* Grant from the Multilateral Fund to 20 participating countries however in 4 of these countries the grants from the Fund are managed as a combination of grant and a revolving fund. These countries include Colombia, Costa Rica, Dominican Republic, and Guatemala.

*Objective of the project:* Implement a national CFC recovery and recycling programme in the MAC sector in the participating countries.

*Level of funding approved:*

US\$ 318,584 for the first phase,

US\$ 500,000 for the 2nd phase

US\$ 250,000 for the 3rd phase.

*Project impact (to-date):* Data not available.

*Status of implementation:* On-going.

**Management structure:**

*USEPA and UNDP:* The division of labour between UNDP and USEPA under the project is that UNDP is responsible for procurement and delivery of the equipment and USEPA is responsible for the training and field management of the project.

*USEPA and the local agent:* In the four countries where the revolving fund is implemented, local agents involved include ozone office in three countries, Colombia, Dominican Republic and Guatemala and a local bank in Costa Rica. To regulate the relationship between USEPA and the local agents, the arrangement under the existing institutional strengthening project is used for the ozone offices however a separate agreement will be signed in Costa Rica where a local bank is used.

*Management cost:* The administrative cost which is paid to the local agent is collected from the funds which is paid back by the enterprises which participate in the revolving fund programme. In percentage-wise, it comes to a range between 9% to 30% of the funds paid back.

**Operating procedure:**

The basic structure of the programme in each of the 4 countries is the same. The grant from the Fund is used to pay for the training of the garage owners on the recovery and recycling equipment, as well as for the purchase of the equipment. A percentage of the equipment cost, ranging between 10% to 40% of the cost has to be paid back by the owners over a period of time..

The funds paid back are used to pay the administrative cost of the local agent and the procurement of additional equipment for another group of garage owners.

In the case of Costa Rica, the scheme will be implemented by a local bank using a small business-lending programme subsidized by the Government. The participating garages will be required to pay back 60% of the equipment cost which is provided as a loan.

*Eligibility criteria:* A willingness to participate, demonstrated by readiness to attend full day training and to remodel the garage to accommodate the new equipment; access to electricity; operating at a fixed location to store the equipment overnight and safeguard it against theft.

*Review/appraisal process:* Data not available.

*Monitoring:* Data not available.

**Conditions of financing:**

Interest rate ( as against local commercial rate): In three of the 4 cases, the programme operates on an interest-free basis for the part of equipment cost that has to be repaid. In Costa Rica, the interest rate from the local bank managing the programme is going to be 18%.

*Need for collateral:* Not required.

*Grace period:* A few months.

*Payback period:* One year.

*Default rate:* Data not available.

**Experiences and Lessons**

13. Based on the information provided on the implementation of the grant-based revolving fund under the global MAC project, the experiences and lessons learned so far can be summarized as follows:
- (a) Clear policy statement from Multilateral Fund that for certain types of projects concessional lending is the only alternative.
  - (b) Sustained incentive of local agent to ensure: the equipment selection meets the local needs, the equipment is transferred to local operators in timely manner and is not charged taxes, money is repaid and the continued use of the equipment.
  - (c) The necessity of a legal and administrative infrastructure to deal with the programme.
  - (d) The rate of repayment by participating garage owners should be reasonable to provide an incentive.
  - (e) A 10% administrative cost collectable from repaid funds is reasonable.

## The World Bank

14. The World Bank provided information on the Thai chiller project, the Multilateral Fund's only loan programme to-date. However, the Bank could not provide any information on the implementation of the on-lending programme in Turkey, the first of such programmes of the Multilateral Fund.

### The chiller replacement programme in Thailand:

#### Project Data:

*Date of project approval by the Executive Committee:* Nov. 1998

*Nature of funding (loan v. grant):* Concessional loan.

*Objective of the project:* Implement a pilot chiller replacement programme using loans.

*Level of funding approved:* US\$ 5 million (including US\$ 2.5 million from GEF)

*Project impact (to-date):* 13.2 ODP tonnes from direct phase out

*Status of implementation:* On-going

#### Management structure:

*World Bank and the local agent:* As this is a lending from the Multilateral Fund, this project is not governed by the existing grant agreement between the World Bank and the Government of Thailand for the grant-based programme. Instead a new loan agreement will have to be signed and for that the approval from the Thai Cabinet is necessary.

*Local arrangement:* Two options are being explored: One is to have the Electricity Generating Authority of Thailand (EGAT) to be the borrower from the Multilateral Fund through the World Bank while the Ministry of Finance will be the guarantor of the loan. In order to have the Ministry of Finance to be the guarantor, approval by the Cabinet of the project is needed.

Option Two is to have the financial intermediary, the Industrial Finance Corporation of Thailand (IFCT) to be the borrower. For that IFCT needs to include a provision to borrow these funds from the Multilateral Fund and GEF in its annual debt-repayment plan. As the major shareholder of IFCT is the Thai Government or the Ministry of Finance, IFCT requires a cabinet approval of its debt-repayment plan.

*Management cost:* Since the World Bank will hold the local agent responsible for the commercial risk, the local agent will require a management fee to cover the risk and the administration. The actual rate is being negotiated.

#### Operating procedure:

There will be an agreement/contract between the borrower (EGAT or IFCT) and the chiller suppliers for providing the equipment, installation and service for the life of the chiller. The borrower will maintain the ownership of the chillers and the building owners will pay nothing at the time of installation. Every month after installation of a chiller, the borrower will send a bill to the building owner an amount equal to the value of the electricity savings resulting from the replacement of the old chiller. The proceeds so collected will be used to repay the loan from the Multilateral Fund and GEF, and buy new chillers for another group of building owners and cover the cost of programme management incurred by the borrower.

*Eligibility criteria:* Criteria for selecting candidates for the programme include willingness of the building owners to repay a portion of the energy savings to the borrower, age of the chiller, CFC leakage rate of the chiller, amount of CFC in the chiller, and baseline energy consumption.

*Review/appraisal process:* Will be done by the local agent on the basis of financial profitability as a loan application in addition to the criteria above.

*Monitoring:* Will be done by the local agent, with periodical report to the World Bank.

**Conditions of financing:**

*Interest rate (as against local commercial rate):* An interest-free loan from the Multilateral Fund. The rate charged by the local agent on the building owners is not known.

*Need for collateral:* The local agent will require all participating owners to provide a letter of credit from their banks with the value equal to the amount of the outstanding loan.

*Grace period:* None. Repayment starts once the new chiller is up and running.

*Payback period:* Four to seven years.

*Default rate:* Not applicable.

**PART II****Real-life scenarios of Concessional Funding of ODS Phase-Out in Article 5 Countries****Background**

15. Decision 27/84 emanates from the Executive Committee discussion on a paper on concessional lending submitted by the United States to the 27th Meeting which tried to address the fears of the Article 5 countries associated with initiating a lending programme either under the Multilateral Fund or through external financing. While acknowledging the concepts proposed in the paper, the Executive Committee wished to see how those concepts could be put to practice under the real situations in Article 5 countries and in the process highlighting issues and problems that might be associated with them, including such concerns as the lack of management capacity in some countries and the fear of augmenting the national debt of countries that were already in economic crisis.
16. Based on the experiences the Fund has acquired on funding loans and project with loan components, the following scenarios are developed for a discussion of the issues raised by the Executive Committee. The last one is included to show other potential use of loans.
17. Scenario 1. The use of a loan to cover a portion of the costs of conversion of a refrigerator manufacturer – on lending.

In the Arcelick project approved for Turkey, the government decided independently of any Fund requirement, that the refrigerator manufacturer was in such sound financial condition, that it did not need a full grant for the conversion. Accordingly, the government proposed that it would take the full grant that the firm was eligible for under existing Executive Committee rules, and provide a portion of those funds to the firm in the form of a loan. It further proposed that the loan money paid back to the government would be used by the government to fund additional ODS reduction activities.

18. Issues Raised by the Executive Committee:
  - (a) **Management Capacity:** In this case, the government assumed the responsibility for collecting the loan money from the firm. In some cases, governments and/or ozone units may not have the management capacity or authority to collect money directly from a private firm. In such cases, the collection task could be given to an outside entity, such as a bank. The outside entity would have to be given some amount of money to cover its costs of collection and management of the funds.
  - (b) **Increasing foreign debt burden:** In this case, the grant from the Fund is managed by the country as a loan, and the government did not assume a debt to the Fund or to any other institution. Indeed, even if the firm defaulted on the loan, the government would owe no one any funds.



19. Additional Practical Issues for Wider Implementation:

- (a) **Development of guidance for determining when a loan would be warranted:** The Executive Committee might like to consider identifying the circumstances under which a firm might not need full grant funding to effectuate its phaseout.
- (b) **Determining what rules, if any, should guide expenditure of funds paid back from the loan:** The Executive Committee might like to consider rules guiding how the funds repaid can be expended on activities such as other national projects or the enhancement of institutional strengthening funds.

20. Scenario 2 – Development of a recycling project:

In the case of the US recovery and recycling project in the Dominican Republic, the US agreed with the Dominican Republic to deploy 23 sets of recovery and recycling machines. Participating shops were required under the project to pay 40% of the costs of the equipment as follows: 5% at the time of training, 20% when the equipment was delivered, and then 3 monthly payments of 25%. The ozone unit collected the payments and was given \$2,000 (approximately 10% of the sum collected) as a management fee. The funds collected were used primarily to purchase a second round of equipment for additional shops. Shops that did not make their payments had their equipment confiscated for redeployment to other shops.

21. Issues Raised by the Executive Committee:

- (a) **Management Capacity:** In this case, the ozone unit assumed the responsibility for collecting the loan money from the firm. In some cases, governments and/or ozone units may not have the management capacity or authority to collect money directly from a private firm. In such cases, the collection task could be given to an outside entity, such as a bank. The outside entity would have to be given some amount of money to cover its costs of collection and management of the funds.
- (b) **Increasing foreign debt burden:** In this case, the grant from the Fund was managed in the country as a loan. The government did not assume a debt to the Fund or to any other institution. Indeed, even if the firm defaulted on the loan, the government would owe no one any funds.

22. Scenario 3 – A Concessional Loan for Chiller Replacement in Thailand:

In this case, a local institution in Thailand will get chiller owners to submit letters of credit to secure a loan for the purchase of new chillers. On this basis, the government of Thailand would be able to guarantee repayment of the loan in the case of default by any of the chiller owners. With this arrangement, the Multilateral Fund and GEF were able to provide a loan to the government to facilitate the purchase of 24 new CFC-free chillers. This project was designed to demonstrate that the purchase of new energy efficient chillers was cost effective in its own right.

23. Issues Raised by the Executive Committee:

- (a) **Management Capacity:** In this case, the government will delegate the collection and loan management task to a local institution which would be given a fee to undertake this task.
- (b) **Increasing foreign debt burden:** The case of the Thai chiller project approved by the Executive Committee is different from the two cases above, in that in the Thailand case, the Multilateral Fund can be seen as the direct lender, and the country is responsible for repayment of the loan in the case of failure. While this can be seen as potentially increasing the foreign debt of the country, by securing letters of credit from the chiller owners prior to accepting the loan, the government has ensured that any losses would be covered by the chiller owner and not the government.

24. Scenario 4 – Loans from a bank – Loan Guarantees/Interest buy downs by the Fund:

In this scenario, a refrigerator manufacturer who is found to be financially secure and not in need of a full grant to effectuate its conversion, is seeking to have 50% of the cost of the project in the form of a loan. The firm notifies the relevant implementing agency of its primary lender, and the Fund/agency agrees with the lender to guarantee the loan. Because the loan is guaranteed by an

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international funding entity, and risk is reduced, the lender can afford to charge an interest rate that is lower than the typical one charged in the country. The Fund may also chose to buy down that interest rate further.

25. Issues Raised by the Executive Committee:

(a) **Management Capacity:** In this case, the government would assume no management role. The role would be assumed by a bank.

(b) **Increasing foreign debt burden:** In this case, the government did not assume a debt to the Fund or to any other institution. Indeed, even if the firm defaulted on the loan, the government would owe no one any funds. Instead, the Fund would have to repay the loan.

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## ADDENDUM

### Decisions taken by the executive committee on Concessional lending since 27th meeting in 1999

This addendum updates the information on the decisions of the Meetings of the Parties, and of the Executive Committee on concessional lending, contained in UNEP/OzL.Pro/ExCom/28/53, and lists the additional decisions adopted by the Executive Committee on the subject since the 27th Meeting in 1999.

1. **Time:** 1999

**Context:** Consideration of a discussion paper submitted by the Secretariat on concessional lending (UNEP/OzL.Pro/ExCom/28/53) at the 28th Meeting of the Executive Committee

**Decision 28/48:** The Executive Committee decided:

(a) To take note of the following principles presented by the representative of Canada and discussed by the Executive Committee:

- Recipient Governments should not be required to assume additional official debt as a result of agreeing to Multilateral Fund projects that utilized more innovative financing arrangements;
- If a country agreed to a project which included concessional lending or “innovative funding” arrangements, any funds which are eventually repaid to the project should be used, at the direction of the Executive Committee, to address further related needs within the same country;
- The parameters of innovative financing projects must be tailored to meet the needs of the project being considered and the capacity of the recipient country;
- The operation of concessional loans, or other innovative financing mechanisms, required an appropriate provision for administrative costs;

(b) To invite the members of the Executive Committee to submit to the Secretariat comments on these four principles or further such principles required, to be incorporated into a broad framework document to be considered at the Twenty-ninth Meeting of the Executive Committee;

(c) To discuss the issue and principles at the Twenty-ninth Meeting, both as an item on the agenda and in a large-scale informal meeting.

2. **Time:** 1999

**Context:** Consideration of a paper by the Secretariat ( UNEP/OzL.Pro/ExCom/29/59) and an informal paper from Canada at the 29th Meeting of the Executive Committee

**Decision 29/71:** The Executive Committee decided:

To take note of the documents on the subject, including an analysis prepared by the World Bank on past experience with concessional loans, and the proposed framework contained in pages 4 and 5 of document UNEP/OzL.Pro/ExCom/29/59, as a useful basis for further discussion, and to seek the guidance of the Meeting of the Parties on how to proceed further.

3. **Time:** 2001

**Context:** Consideration of an informal document on concessional, lending submitted by Japan (UNEP/OzL.Pro/ExCom/34/CRP.1) at the 34th Meeting of the Executive Committee

**Decision 34/69:** The Executive Committee decided:

(a) To consider the proposal for a technical workshop on concessional lending at its 35th Meeting;

- (b) To request the Secretariat, as preparation for that meeting:
- (i) to recirculate its document UNEP/OzL.Pro/ExCom/29/59, as well as the note produced by the representative of Canada, reporting on the informal meeting convened on 23 November 1999 during the 29th Meeting of the Executive Committee at Beijing;
  - (ii) to prepare a report containing a compilation of the experience of the World Bank, which had applied innovative funding modalities to projects financed by the Multilateral Fund in Mexico, Thailand and Turkey, as well as other relevant information that could facilitate the understanding of the process of concessional lending;
- (c) To take the proposal made by the Government of Japan as a basis of further discussion at its 35th Meeting, the text of which is reproduced as follows:

*"The Executive Committee, having discussed the document submitted by the Government of Japan (UNEP/OzL.Pro/ExCom/34/CRP. 1 of 22 June 2001):*

- "(a) decides to approve the convening of a technical workshop, in a project to be implemented by the Government of Japan with the assistance of the implementing agencies, to:
- "(i) promote exchange of views on the objectives and modalities of concessional lending including pros and cons to Article 5 countries among the Member Governments of the Executive Committee;
  - "(ii) deepen the understanding of operations of any practical and workable concessional lending schemes available within the United Nations system;
  - "(iii) review relevant experience of the Fund and the implementing agencies as well as Article 5 countries in innovative financing in this field;
- "(b) requests the Government of Japan in cooperation with the Secretariat and interested implementing agencies to make substantive and the relevant logistical arrangements for the convening of the workshop in a most cost-effective manner, at a time in which the Japanese Government deems appropriate by the end of June 2002, on the understanding that the agencies should make substantive contributions based on their experience in this area; and
- "(c) requests the Secretariat and, as appropriate, the agencies to report on the findings of the workshop to the 37th Meeting of the Executive Committee.
- "(d) requests the Executive Committee at its 34th Meeting to approve US\$ [75,000] to support the participation of the relevant experts and resource persons from Article 5 countries. This amount should be offset against Government of Japan's 2001 contribution to the Multilateral Fund."

#### 4. Time: 2001

**Context:** Follow-up to Decision 34/69 at the 35th Meeting of the Executive Committee

**Decision 35/61:** The Executive Committee decided:

- (a) To take note with appreciation of the information paper provided by the World Bank on innovative financing for effective ODS phase-out;
- (b) To approve the convening of a technical workshop, in the context of a project to be implemented by the Government of Japan with the assistance of the implementing agencies, to:
  - (i) promote exchange of views on the objectives and modalities of concessional lending including pros and cons, among Article 5 countries members of the Executive Committee;
  - (ii) deepen the understanding of operations of any practical and workable concessional lending schemes available within the United Nations system;
  - (iii) review relevant experience of the Fund and the implementing agencies, as well as Article 5 countries, in innovative financing in this field;

- (c) To request the Government of Japan, in cooperation with the Secretariat and interested implementing agencies, to make the substantive and relevant logistical arrangements for the convening of the workshop in the most cost-effective manner at a time deemed appropriate by the Japanese Government, preferably back-to-back with the meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, to be held at the end of July 2002, on the understanding that the agencies would make substantive contributions based on their experience in this area;
  - (d) Also to request the Secretariat and, as appropriate, the agencies to report on the findings of the workshop to the next appropriate Meeting of the Executive Committee;
  - (e) To approve US\$ 75,000, on an exceptional basis, to support the substantive and relevant logistical arrangements, including the participation of Executive Committee members from Article 5 countries and the relevant experts and resource persons from Article 5 countries. This amount should be offset against the Government of Japan's 2001 contribution to the Multilateral Fund.
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## ABOUT THE UNEP DTIE OZONACTION PROGRAMME

Nations around the world are taking concrete actions to reduce and eliminate production and consumption of CFCs, halons, carbon tetrachloride, methyl chloroform, methyl bromide and HCFCs. When released into the atmosphere these substances damage the stratospheric ozone layer – a shield that protects life on Earth from the dangerous effects of solar ultraviolet radiation. Nearly every country in the world – currently 184 countries – has committed itself under the Montreal Protocol to phase out the use and production of ODS. Recognizing that developing countries require special technical and financial assistance in order to meet their commitments under the Montreal Protocol, the Parties established the Multilateral Fund and requested UNEP, along with UNDP, UNIDO and the World Bank, to provide the necessary support. In addition, UNEP supports ozone protection activities in Countries with Economies in Transition (CEITs) as an implementing agency of the Global Environment Facility (GEF).

Since 1991, the UNEP DTIE OzonAction Programme has strengthened the capacity of governments (particularly National Ozone Units or “NOUs”) and industry in developing countries to make informed decisions about technology choices and to develop the policies required to implement the Montreal Protocol. By delivering the following services to developing countries, tailored to their individual needs, the OzonAction Programme has helped promote cost-effective phase-out activities at the national and regional levels:

### **Information Exchange**

*Provides information tools and services to encourage and enable decision makers to make informed decisions on policies and investments required to phase out ODS. Since 1991, the Programme has developed and disseminated to NOUs over 100 individual publications, videos, and databases that include public awareness materials, a quarterly newsletter, a web site, sector-specific technical publications for identifying and selecting alternative technologies and guidelines to help governments establish policies and regulations.*

### **Training**

*Builds the capacity of policy makers, customs officials and local industry to implement national ODS phase-out activities. The Programme promotes the involvement of local experts from industry and academia in training workshops and brings together local stakeholders with experts from the global ozone protection community. UNEP conducts training at the regional level and also supports national training activities (including providing training manuals and other materials).*

### **Networking**

*Provides a regular forum for officers in NOUs to meet to exchange experiences, develop skills, and share knowledge and ideas with counterparts from both developing and developed countries. Networking helps ensure that NOUs have the information, skills and contacts required for managing national ODS phase-out activities successfully. UNEP currently operates 8 regional/sub-regional Networks involving 114 developing and 9 developed countries, which have resulted in member countries taking early steps to implement the Montreal Protocol.*

### **Refrigerant Management Plans (RMPs)**

*Provide countries with an integrated, cost-effective strategy for ODS phase-out in the refrigeration and air conditioning sectors. RMPs have to assist developing countries (especially those that consume low volumes of ODS) to overcome the numerous obstacles to phase out ODS in the critical refrigeration sector. UNEP DTIE is currently providing specific expertise, information and guidance to support the development of RMPs in over 60 countries.*

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## Country Programmes and Institutional Strengthening

Support the development and implementation of national ODS phase-out strategies especially for low-volume ODS-consuming countries. The Programme is currently assisting over 90 countries to develop their Country Programmes and 76 countries to implement their Institutional-Strengthening projects.

### For more information about these services please contact:



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The mission of the UNEP Division of Technology, Industry and Economics is to help decision-makers in government, local authorities, and industry develop and adopt policies and practices that:

- are cleaner and safer;
- make efficient use of natural resources;
- ensure adequate management of chemicals;
- incorporate environmental costs;
- reduce pollution and risks for humans and the environment.

The UNEP Division of Technology, Industry and Economics (UNEP DTIE), with the Division Office in Paris, is **composed of one centre and five branches:**

- **The International Environmental Technology Centre (Osaka)**, which promotes the adoption and use of environmentally sound technologies with a focus on the environmental management of cities and freshwater basins, in developing countries and countries in transition.
- **Production and Consumption (Paris)**, which fosters the development of cleaner and safer production and consumption patterns that lead to increased efficiency in the use of natural resources and reductions in pollution.
- **Chemicals (Geneva)**, which promotes sustainable development by catalysing global actions and building national capacities for the sound management of chemicals and the improvement of chemical safety world-wide, with a priority on Persistent Organic Pollutants (POPs) and Prior Informed Consent (PIC, jointly with FAO).
- **Energy and OzonAction (Paris)**, which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition, and promotes good management practices and use of energy, with a focus on atmospheric impacts. The UNEP/RISØ Collaborating Centre on Energy and Environment supports the work of the Branch.
- **Economics and Trade (Geneva)**, which promotes the use and application of assessment and incentive tools for environmental policy and helps improve the understanding of linkages between trade and environment and the role of financial institutions in promoting sustainable development.
- **Coordination of Regional Activities Branch (Paris)**, which coordinates regional delivery of UNEP DTIE's activities and ensures coordination of DTIE's activities funded by the Global Environment Facility (GEF).

UNEP DTIE activities focus on raising awareness, improving the transfer of information, building capacity, fostering technology cooperation, partnerships and transfer, improving understanding of environmental impacts of trade issues, promoting integration of environmental considerations into economic policies, and catalysing global chemical safety.

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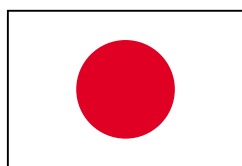
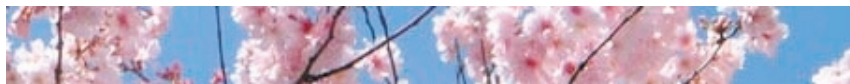


On 22 July 2002 an international workshop was convened under the auspices of the Multilateral Fund for the Implementation of the Montreal Protocol to exchange views on the objectives and modalities of concessional lending, and to review the experiences in innovative financing related to the implementation of this multilateral environmental agreement. These proceedings include the workshop summary and presentations and papers delivered during the workshop.

The workshop was funded by the Multilateral Fund as a bilateral project of the Government of Japan, and it was organized by the UNEP DTIE OzonAction Programme.



*Bridges symbolize connection, communication and exchange between people from different shores*



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