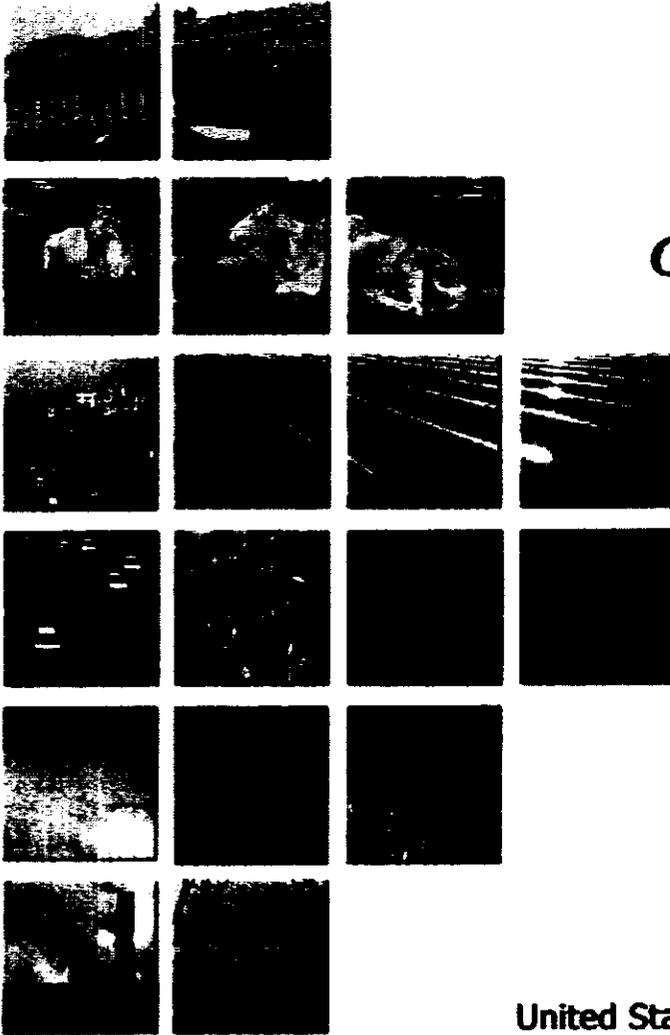


TN-AC4-773

CLIN 6: Policy Level Exchange Visits Between U.S. and Indian Counter-Parts

*Subtask 6.D Completion of Study Tour and Exchanges for
Milestone D - for all CLINS + 2 Policy Exchanges*



Greenhouse Gas Pollution Prevention Project - Climate Change Supplement

A Program of the:
United States Agency for International
Development / India Mission



Implemented by:

The Louis Berger Group, Inc.
Global Environment Team



Table of Contents

Executive Summary

Section I. Ernest Orlando Lawrence Berkeley National Lab Policy Exchange (October 14 - 22, 2002)

Executive Summary

Annexes

- A. Trip Reports**
Jayant Sathaye
Bill Golove
- B. Program Book**
- C. Presentations**
- D. Proform Software Overview**

Section II. Development Alternatives Study Tour to COP 8 (October 18 – November 1, 2002)

Executive Summary

Annexes

- A. DA Reports/Participant Report**
- B. Other Supplemental Materials**

Section III. Environmental Resources Trust GHG Registry Policy Exchange (March 1 – 11, 2003)

Executive Summary

Annexes

- A. Trip Report**
- B. CII Roundtable Presentations**
- C. Other Presentations**
- D. Other Supplemental Materials**



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The Louis Berger Group, Inc
Contract No. 386-C-00-00-00058-00
Sandeep Tandon, CTO

EXECUTIVE SUMMARY

Background

In India, one of the fastest growing source areas of greenhouse gas (GHG) emissions, there is a rising appreciation of the need to track these emissions and to initiate action for reducing the GHG emission intensity of various economic activities. *The Greenhouse Gas Pollution Prevention Project - Climate Change Supplement (GEP-CCS)* funded by USAID India and being implemented by Louis Berger Group Inc., provides technical assistance to build capacity and to facilitate demonstration projects that result in reduced GHG emissions.

One of the methodologies for achieving this goal is to organize study tours and exchanges to create a core of knowledgeable professionals in India armed with adequate technical information, and to provide linkage to an international network of shared expertise. An important aim of these exchanges is to provide the opportunity for quality interaction between international peers and agencies that are confronting the same GHG issues and problems.

Exchanges / Tours Organized

Accordingly, during the 2002 and 2003, in consultation with USAID, LBG leveraged its network of partnerships with various US and Indian institutions to design and organize the following exchanges:

Activity (Period)	Who
A. Policy Exchange (October 14 - 22, 2002)	Mr. Jayant Sathaye, Senior Scientist and Mr. William Golove, Ernest Orlando Lawrence Berkeley National Laboratory (Berkeley Lab)
B. Study Tour (October 18 - November 1, 2002)	Indian NGO group, supported by Development Alternatives Climate Change Center (DA CCC) for participation in COP-8 and related events
C. Policy Exchange (March 1 - 11, 2003)	Mr. Wiley Barbour, Director of Environmental Registry Services at Environmental Resources Trust (ERT)

A. Policy Exchange: Ernest Orlando Lawrence Berkeley National Lab

With the growing recognition of the importance of accurately assessing GHG emissions for developing mitigation projects, the need for innovative project based tools that could facilitate this process, such as *ProForm Software*, was apparent. Accordingly, the aim of this exchange was to demonstrate the *ProForm Software* - a tool designed to support a basic assessment of the environmental and financial impacts of renewable energy and energy efficiency projects, and solicit feedback on tailoring the software to the Indian scenario.

A series of meetings and policy discussions was coordinated by the LBG/GEP-CCS team between the Berkeley Lab representatives and the leading stakeholders in India in climate change issues. Meetings were held with government agencies, private sector organizations and NGO's viz. Ministry of Power.

Bureau of Energy Efficiency (BEE), the Federation of Chambers of Commerce and Industry (FICCI), Industrial Leasing & Financial Services (IL&FS) and Infrastructure Development Finance Company (IDFC) and Infrastructure Development Corporation (Karnataka) (iDECK). Through the collaboration with Development Alternatives and the LBG/GEP-CCS team, Dr. Sathaye also participated in workshops and side events leading up and during the COP-8 event held in Delhi. During the meetings, the *ProForm Software* was introduced to the Indian stakeholders. The software was seen to offer substantial value as a practical tool for GHG mitigation projects.

The response of the stakeholders to these meetings was very positive, and the exchange laid the foundation for a highly valuable program in India. Potential partners were identified for different aspects of an implementation program for the software. Follow up visits by LBNL are in the planning stages to continue the dialogue and to establish formal partnerships for the adoption of the software.

B. Study Tour: Indian NGOs Participation in COP-8 & Related Events

The assistance to DA CCC to funding this study tour was primarily directed at strengthening CCC's role as the lead facilitator and apex body for the larger Indian NGO community. In addition, it was felt that the participation of the NGO's in the COP-8 and related activities would increase their awareness and understanding of the climate change issues – a critical element in engaging them for future mitigation and adaptation activities at the level of the local community.

A group of twenty grass-root NGO's were selected by CCC, leveraging DA's extensive linkages in the grass-root sector. The participants represented organizations operating in various parts of the country, and in diverse fields related to environment and development. Their participation in the said events, helped to not just deepen their understanding of the climate change issues and negotiation process, but also to network them with like-minded delegates from other parts of the world. Consequent to their participation, several of the NGOs organized outreach and awareness programs and district level consultations to sensitize decision-makers stakeholders at the local level. They also incorporated climate change related components in their regular activities. This increased engagement of community based NGOs offers the potential of partnerships to be harnessed for development and implementation of mitigation and adaptation activities at the local level, possibly as part of a collaborative action at the regional (i.e. South Asian) level.

C. Policy Exchange: Environmental Resources Trust

Outreach activities undertaken as part of the GEP-CCS program had revealed a critical gap, a building block for employing GHG market based mechanisms which was not being addressed, the need for development of a GHG registry. As a crucial mechanism for tracking and trading credible emission reductions in India and elsewhere, the ability to register emissions reductions in a recognized platform is a necessary element to ensure confidence in the process. Accordingly, this policy exchange was organized by LBG/GEP-CCS in partnership with ERT to lay the groundwork for the development of future GHG registry systems in India. The exchange aimed to share the particulars of various types of registries, present the benefits of a registry for industry in India, explain the accounting and data collection basics necessary for registering reductions, and provide an understanding of the underlying obstacles/ barriers.

During his visit, Mr. Barbour met with senior representatives from the Ministry of Environment and Forests (MoEF), Central Pollution Control Board (CPCB), BEE, the Confederation of Indian Industry

(CII), FICCI, ICICI Bank, IDFC and IL&FS. Interactions with industry leaders also took place in the course of a roundtable organized by CII and Resources for the Future International.

The various interactions confirmed the need for a GHG registry in the Indian context, and emphasized the catalytic role it could play in encouraging emission reductions by industry. The discussions also increased the awareness and understanding of how a GHG registry would work. The exchange also helped identify potential partners, including hosts, for implementing the registry. Going forward there appeared to be strong potential for developing a pilot registry project, tailored to suit the Indian context.

Outcomes

The above exchanges/ tour contributed to building capacity among key Indian stakeholders by:

- Increasing awareness on all climate change issues, including adaptation;
- Facilitating the adoption of improved decision-making tools; and
- Working toward the development and implementation of necessary institutional systems to support an emissions market.

SECTION I

Section I:

**Ernest Orlando Lawrence Berkeley National Lab
Policy Exchange Visit
*(October 14 - 22, 2002)***

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LAB
POLICY EXCHANGE VISIT



EXECUTIVE SUMMARY

Background

As the rate of greenhouse gases continues to rise in India and around the world, India has recognized the importance of assessing greenhouse gas emissions to provide valuable information to industry leaders and project developers for developing energy efficiency and renewable energy projects. More accurate assessments of emissions are critical in developing carbon revenue estimates and foreign equity for proposed projects.

As a component of the Louis Berger Group's (LBG) USAID/India *Greenhouse Gas Pollution Prevention Project-Climate Change Supplement Project (GEP-CCS)*, LBG/GEP-CCS formed a collaborative partnership with the Ernest Orlando Lawrence Berkeley National Laboratory (Berkeley Lab) to work with Indian stakeholders on climate change mitigation and adaptation strategies and to demonstrate innovative project-based tools, such as the *ProForm Software*, and solicit feedback on tailoring the software to the Indian scenario.

In support of this partnership, LBG/GEP-CCS designed a policy exchange visit for Mr. Jayant Sathaye, Senior Scientist and Mr. William Golove of the Berkeley Lab to India from October 14-22, 2002. The objective of their collective visit was to further inform the more progressively oriented industrial sector, financial institutions and NGOs, about market based mechanisms and specific software tools that could be effective in reducing the rate of growth of GHG emissions in India.

Participation in Climate Change Policy Workshops and Meetings

The LBG/GEP-CCS team coordinated with leading stakeholders in India and scheduled a series of meetings and policy discussions on various climate change issues with Dr. Jayant Sathaye, a leading climate change expert from Berkeley Lab. During this week-long set of meetings, Dr. Sathaye met with government agencies, private sector organizations and NGOs, such as the Infrastructure Development Finance Company Ltd. (IDFC), the Infrastructure Development Corporation (Karnataka) Ltd. (IDECK), the Federation of Indian Chambers of Commerce and Industry (FICCI), the Ministry of Power Bureau of Energy Efficiency (BEE), and the USAID/India Mission. Through collaboration with the Society of Development Alternatives (DA) and the LBG/GEP-CCS team, Dr. Sathaye also participated in workshops and side events leading up and during the UNFCCC COP-8 event held in New Delhi India during the last week in October.

During these meeting sessions, Dr. Sathaye, who is very well respected in the Indian community for both his technical expertise and senior standing in the international climate change dialog, was well received and was able to provide a policy perspective on the critical and emerging climate change issues that should be considered in India. These meetings, focused on providing policy level guidance and technical direction, included:

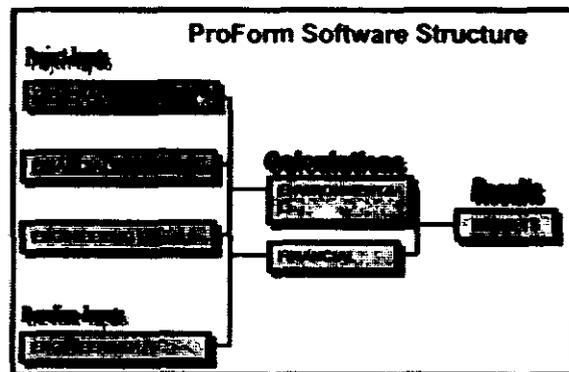
- Developing industrial energy efficiency criteria based on energy intensive sector characteristics and statistics with the senior FICCI energy specialists.
- Providing technical guidance to GoI Ministries for pre-COP-8 meetings, events and discussions;
- Highlighting GHG and climate change aspects for project development and sharing work done by LBNL and others on developing monitoring and verification criteria and baselines, with IDECK and IDFC project developers;
- Shared LBNL experience and work with various international market based mechanisms and provided guidance on competing for and accessing carbon funds with financial institutions.
- Worked with Project Developers/Sponsors on quantifying GHG emission measures for establishing baseline patterns and future benchmark standards.
- Presented on GHG market-based mechanisms at an official COP 8 side-event session, and shared experience on the current GHG mitigation and adaptation measures and interventions.

Demonstration of Proform Software

As part of the collaborative partnership between LBG/GEP-CCS and the Berkeley Lab, the team led the introduction of the *ProForm Software* to India. *ProForm Software* is a tool designed to support a basic assessment of the environmental and financial impacts of renewable energy and energy efficiency projects. Given the necessary data, *ProForm Software* calculates basic financial indicators and avoided emissions of CO₂ and local air pollutants expected from a project.

As a spreadsheet-based tool, *ProForm Software* is designed to be user-friendly, yet sophisticated enough to provide credible results. A typical application of *ProForm Software* would be in preparation of a project proposal that the developers might submit to potential investors, financiers, or a national climate change office. *ProForm Software* allows project developers, financial institutions, and other parties to investigate how changes in basic assumptions affect the key parameters of a project.

The LBG/GEP-CCS - LBNL team recognized that the *Proform Software* had substantial value as a practical tool for greenhouse gas mitigation projects. Dr. William Golove along with Dr. Sathaye, from the Berkeley Lab, collaborated in introducing the *Proform Software* to a number of Indian stakeholders through a series of senior-level roundtable discussions. The breadth of these meetings included Indian industry, utilities, government, financial institutions and other stakeholders. This multi-sectoral approach was designed to illicit broad feedback and identify areas of operational and financial risks and opportunities in projects from related GHG emissions.



During these meetings, Dr. Sathaye was able to provide an international perspective and broad conceptual framework for pre-screening software and the benefits derived from utilizing the *Proform Software* tool. Dr. Golove focused on the technical details and capabilities of the software. Organizations with which Dr. Sathaye and Golove met included: DA, GoI and industry in association with FICCI, IDFC, IL&FS, ICICI Bank Ltd., and MOP/BEE. The focus of these meetings was to provide detailed information of the software, its capabilities, and its practical application in an Indian context. The meetings also served to road-test some of the India specific data and improvements LBNL made to the software as a result of the earlier valuable input of Indian financial institutions and industries provided during the GEP-CCS exchanges in the spring and summer of 2002.

Outcomes

The response to these meetings was very positive, as Dr. Sathaye and Dr. Golove worked collectively to provide a both a holistic and specific approach to the utilization and capabilities of the *Proform Software*.

In summary, the policy exchange to India laid the foundation for a highly valuable program in India and has provided the opportunity to separate the various meetings out into four types of partnerships that will define specific outcomes in India. These partnerships include:

- “Logistics” partners
- “Training and Distribution” partners
- “Endorsement” partners
- “End-use” partners

Each of these categories entails different expectations, but the majority of the organizations can be generally categorized as “Training and Distribution” partners or “Endorsement” partners. It is expected that the training and distribution partners will commit to working closely with both LBNL and end-users with the intention of providing training to these “T&D” partners in the use of *ProForm* and, where requested, more general training in clean energy project evaluation. “Endorsement” partners are likely to be the key to the long-term success of the *ProForm Software* activity. Financial institutions and government bodies are included in this group, with the basic idea that endorsement partners are organizations that receive clean energy project proposals, either for funding consideration or some other form of approval. Endorsement partners will be organizations that have formally agreed to review project submissions that include analysis done using the *ProForm Software*.

Next Steps

Resulting from this visit, LBG/GEP-CCS and LBNL have recognized the continued need for institutional development to ensure the proper adoption of the *Proform Software* in India and to establish in-country institutional capacity for the large-scale development of clean energy projects in India

Additionally, LBNL feels that another visit in the next 3-9 months would be indicated to continue the momentum, with the intent of establishing formal partnerships along the lines described above, and to hold a series of workshops with partners and potential partners. These workshops would be focused on the end-users and designed to introduce end-users to the capabilities of the tool and to provide introductory training in its use. LBNL also envisions a workshop to train-the-trainers at the same time to leverage the training efforts.

Section I:

**Ernest Orlando Lawrence Berkeley National Lab
Policy Exchange Visit**

Annexes

ANNEXES

Annex A:
Trip Reports

Jayant Sathaye - Trip Report

**Participation in Workshops on Adaptation and Project-
Based Activities during COP8, and Demonstration of
Proform**

JAYANT SATHAYE – TRIP REPORT

Participation in Workshops on Adaptation and Project-Based Activities during COP 8, and Demonstration of Proform

Background

The primary goal of the USAID GEP is to improve the understanding of climate change issues among key stakeholders in India who have a significant role in helping to reduce India's GHG emissions. The Louis Berger Group (LBG) - Global Environment Team is currently implementing the GEP - CCS project in India. The LBG team and LBNL worked closely to organize various demonstrations and meetings with different Indian stakeholder groups - environment and development NGOs, financial institutions, industry organizations and government agencies - to share LBNL expertise on climate change mitigation and adaptation, to demonstrate ProForm and other project-based tools, solicit feedback on potential improvements in the tools, and, ultimately, facilitate their adoption in India with the objective of reducing the rate of growth of GHG emissions.

Objectives

The main objectives of this policy exchange visit were:

- Meet with policy makers
- Speak and participate in workshops and side events at COP8
- Demonstrate the most current version of ProForm and standardized baselines to potential users

Outcomes of the Visit

In general the visit was very successful in achieving its main objectives. The interest of the private sector was very encouraging. But more work is still needed to insure adoption of ProForm and standardized baseline tools and to establish adequate in-country institutional capacity for the large-scale development of clear energy projects in India.

My participation in the workshops was much appreciated by the organizers. The workshop organized by Development Alternatives on adaptation led to the formulation of a workshop memorandum that was made available to COP 8 negotiators for their deliberations.

I also participated and spoke at the workshop organized by FICCI on climate change capacity building for the Ministry of Science and Technology. This workshop served as the precursor for MOST's formulation of a plan to set up an international center on capacity building with support from other countries. The plan for the center has now progressed, and MOST has identified a site in Nainital for the permanent location of its facilities.

During the week, I gave a talk on transaction costs of climate change projects at a COP8 side event organized by DA. The talk focused on current high magnitude of transaction costs and ways that the costs could be reduced in future projects.

I also accompanied Bill Golove in meetings at IDFC in Chennai and at FICCI in Delhi on ProForm and other project-based tools. The presentations were well received at both locations and project developers and others expressed interest in adopting and adapting these tools for their use in the development of climate change projects.

In summary, the recent visit to India laid the foundation for a highly valuable program in India. We look forward to continued collaboration with LBG and the USAID mission in bringing methods and tools for the evaluation of climate change projects in India, and thereby, improving the ability of the country to develop climate change projects on a large-scale basis.

Bill Golove - Trip Report

**Demonstration of ProForm - A Tool for Assessment of
Renewable Energy and Energy Efficiency Projects in
India**

BILL GOLOVE - TRIP REPORT

Demonstration of *ProForm* - A Tool for Assessment of Renewable Energy and Energy Efficiency Projects in India

Background

The primary goal of the USAID GEP project is to improve the understanding of climate change issues among key stakeholders in India who have a significant role to help reduce India's GHG emissions. The Louis Berger Group (LBG) - Global Environment Team is currently implementing the GEP - CCS in India. The LBG team and LBNL worked closely to organize various demonstrations and meetings with different Indian stakeholder groups - environment and development NGOs, financial institutions, industry organizations and government agencies - to demonstrate ProForm, solicit feedback on potential improvements in the tool, and, ultimately, facilitate its adoption in India.

Objectives

The main objectives of this policy exchange visit were:

- Demonstrate the most current version of ProForm to potential users
- Identify potential improvements in ProForm, both in terms of functionality and user-friendliness
- Identifying leading Indian organizations interested in adopting the tool
- Assist with the continued development of Indian regulatory and private sector infrastructure and institutional capacity to develop clean energy projects

Outcomes of the Visit

In general the visit was very successful in achieving its main objectives. The interest of the private sector was very encouraging. But more work is still needed to insure adoption of ProForm and to establish adequate in-country institutional capacity for the large-scale development of *clear energy projects in India*.

The LBNL visit to India provided invaluable insight into both the development of the ProForm spreadsheet itself, as well as the direction for the ProForm activity as I will describe below, in addition to the specific progress made in improving in-country institutional capacity.

The following section of this report will outline the emerging ProForm activity structure and will describe specific outcomes in India in this context.

Overall, the ProForm activity will now be structured around a series of what we are calling "partnerships." We have established 4 types of partnership. The first type is the "logistics" partner. These organizations will be responsible for organizing local workshops, inviting prospective attendees, arranging space, assisting with local contacts, etc. In India, LBNL hopes that LBG will serve in this capacity. LBG did a magnificent job with all the logistical requirements for our recent visit.

The second type of partnership we call the "training and distribution" partner. This (one or more) organization becomes our primary technical point of contact in country/region. We expect that training

and distribution partners will commit to working closely with both LBNL and end-users. It is our intention to provide training to these "t&d" partners in the use of ProForm and, where requested, more general training in clean energy project evaluation. LBNL will also work with these partners to develop a region specific (or other customized changes) of the ProForm software. The t&d partner then becomes the main local distribution source for the customized version, as well as being the primary local training source for end-users. We typically envision NGOs as being the most likely candidates for t&d partners, but this will not exclusively be the case. Based on our visit, we believe that there are at least three excellent candidates for t&d partnerships in India, Development Alternatives (DA), the Federation of Indian Chamber of Commerce and Industry (FICCI) and the Confederation of Indian Industries (CII). All three of these organizations possess the necessary base of technical capacity to benefit from additional training in project-based analysis and, as agreed, serve as in-country trainers for other ProForm users. Although formal partnership agreements were not discussed during our visit with any of these organizations, all three expressed high levels of interest in the idea in general. LBNL will look to LBG and the USAID mission for guidance in seeking formal t&d partnership agreements with these (or other) organizations.

The third we call "endorsement" partners and is likely to be the key to the long-term success of the ProForm activity. We include financial institutions and government bodies in this group. The basic idea is that endorsement partners are organizations that receive clean energy project proposals, either for funding consideration or some other form of approval. Our endorsement partners will be organizations that have formally agreed to review project submissions that include analysis done using ProForm. We expect that both LBNL and the t&d partners will work closely with endorsement partners to meet their analysis needs. We met with three organizations in India we would like to see as formal endorsement partners, the Infrastructure Development Finance Company (IDFC), ICICI, Ltd., and the Bureau of Energy-Efficiency. As with the potential t&d partners, all three organizations expressed high levels of interest in ProForm and the related training/ Again, we will look to the USAID mission and LBG for guidance in moving forward with formalizing these relationships. There are probably other organizations we were unable to meet with on this visit, such as EcoSmart, the Ministry of Non-Conventional Energy Sources and the Ministry of Environment and Forest, among others, that should be considered as potential endorsement partners as well.

The fourth group is simply our "end-use" partners. Obviously, this is the group of organizations that are using ProForm in their analytic activities. Our current expectation is that these partners will attend one or more end-user training workshops and will receive subsequent technical assistance from our t&d partners. Of course, LBNL will also be available to provide assistance where appropriate and necessary.

A couple of additional points about our partnerships: An organization may serve as more than one kind of partner. We are working with an organization in Brazil, for example, that is our logistics and t&d partner and also an end-user for their own activities.

As a follow-up to this visit, we propose another visit in the next 3-9 months. The purpose of the proposed visit would be two-fold. First, we would like to establish formal partnerships along the lines described above. Second, we propose to hold a series of workshops with partners and potential partners. We anticipate offering two types of workshops.

The first type of workshop will be focused on end-users. It is typically between 1/2 to 1 full day and is designed to introduce end-users to the capabilities of the tool and to provide introductory training in its use. We have generally had between 20 to 75 attendees at this type of workshop in the past. In some

countries, we have done a series of these workshops in key cities, much as we did on our recent visit. In other cases, we have done one workshop in a central location.

The second type of workshop we propose to be organized as "training the trainers." This will generally be 2-3 days and will be substantially more in-depth than the end-users workshop. It is designed primarily for actual or potential t&d partners. We prefer to have only 1-2 organizations represented at this type of workshop because of the detailed issues we address.

In summary, our recent visit to India laid the foundation for a highly valuable program in India. We look forward to continued collaboration with LBG and the USAID mission in bringing ProForm to India and, thereby, improving the ability of the country to develop clean energy projects on a large-scale basis.

Meeting Notes:

Thursday, October 17, 2002

Development Alternatives (DA) - Climate Change Center (CCC)

- Mr. Kalipada Chatterjee
- Dr. Vivek Kumar
- Ms. Shalini Prakash
- Mr. Samrat SenGupta

Background

The CCC is an important partner of GEP-CCS and is engaged in identifying and guiding developers of clean energy projects. DA-CCC has developed experience in this process over the last couple of years with the TA provided by LBG.

Meeting Notes

Dr. Golove provided the background in the development of the ProForm Software, highlighting the use of the tool especially at the screening and pre feasibility stage. He demonstrated the software with the help of relevant Indian case studies, which was highly appreciated by the DA-CCS Team. In the ensuing discussion, DA-CCC wished to know whether they could use the software for GHG assessment of projects whose developers may be interested in monetizing the carbon offsets for selling to investors with emission caps. Dr. Golove, while explaining the intricacies of the ProForm tool, mentioned that the tool has been developed by LBNL with a view to conducting a technical analysis. DA-CCC plans to use the tool to conduct GHG analysis of projects being developed by them in future and also to provide observations/comments and suggestions for software improvement.

Saturday, October 19, 2002

Infrastructure Development Finance Company Ltd (IDFC),

- Ajay Narayanan
- Vinod Hari
- Kirtan Sahoo
- Bharati Solonky
- Anish Nanavati

Background

IDFC, a premier financial institution, has been proactive in promoting GHG mitigation projects and practices. They are in an advanced stage of signing an MOU with PCF for identifying and developing GHG mitigation projects from which PCF could buy the carbon offsets. IDFC has participated in a number of training portfolio review and project development activities of GEP-CCS to build their institutional capacity in the area of carbon finance and GHG project development. One of their projects for treatment and disposal of MSW through bio-methanation has received a detailed GEP-CCS TA for its GHG reduction assessment.

Meeting Notes

Dr. Sathaye provided the history and development of ProForm and development of pro Form over the last five years. He mentioned that ProForm and the IPCC guidelines and methodology, which evolved in parallel, are complimentary. He also informed the group about another LBNL software tool called M-Base, which addresses the development of Project baselines. IDFC appreciated both the ProForm and the M-Base tools and suggested that they would test it on a few projects in its pipeline. IDFC has developed an advanced financial analysis model, which could eventually incorporate the ProForm methodology.

Tuesday, October 22, 2002

Bureau of Energy Efficiency (BEE)

- Dr. Shashi Sekhar

Background

BEE is a newly established body, which is responsible for setting up an incentive based regime that will promote energy efficiency improvements in industry and other areas.

Meeting Notes

The meeting with BEE was held at the Ministry of Power and was attended by Dr. Shashi Shekhar Director General. Dr. Sathaye provided general background and evaluation of the Pro Form and the M-Base tools. He highlighted the importance and complications in assessment of energy efficiency projects. Dr. Golove demonstrated the operation of the Pro Form software and clarified technical questions raised by Dr. Shekhar.

Tuesday, October 22, 2002

Federation of Indian Chambers of Commerce and Industry (FICCI),

- M A Jayaseelan
- FICCI Team

Meeting Notes

The meeting at FICCI was attended by Mr. M A Jayaseelan and the team at the Energy Information Center (EIC) and several industrial project developers. Dr. Golove provided the background of development of the Pro Form software and the importance of the GHG estimation at an early stage of project development of the Pro Form software and the importance of the GHG estimation at an early stage of project development. The participants appreciated the software tool and asked a number of questions about the operational details. Dr. Golove presented key examples from Indian Industry and the power sectors that were developed by GEP -CCS team. FICCI agreed to provide continued support to its members in identifying the GHG mitigation potential of clean energy projects being developed by them.

Annex B:
Program Book



PROFORM SOFTWARE VERSION 3.0 DEMONSTRATION

*A Tool for the Assessment of Renewable Energy and
Energy Efficiency Projects*

Table of Contents

Section I.	Acknowledgements
Section II.	Overview
Section III.	ProForm Background and Applications
Section IV.	Presentation

SECTION I.

Acknowledgements

PROFORM SOFTWARE VERSION 3.0 DEMONSTRATION

*A Tool for the Assessment of Renewable Energy and
Energy Efficiency Projects*

Acknowledgements

Developed by:



Ernest Orlando Lawrence Berkeley National Laboratory

*A U.S. Department of Energy Scientific Laboratory
Managed by The University of California*

Collaborative Partnership with:



Greenhouse Gas Pollution Prevention Project-
Climate Change Supplement

Implemented by  *The Louis Berger Group, Inc.*

Sponsored by:



United States Agency for International Development/
India Mission

SECTION II.

Overview



PROFORM SOFTWARE VERSION 3.0 DEMONSTRATION

A Tool for the Assessment of Renewable Energy and Energy Efficiency Projects

Overview

Today, a project analysis tool is necessary for identifying the avoided emissions of CO₂ and the local air pollutants from ongoing and proposed projects. An accurate understanding and calculation of these emissions will provide valuable information to industry leaders and project developers for developing and structuring energy efficiency and renewable energy projects on a single and/or multiple installations. Further, an accurate assessment could also suggest the potential carbon revenues and foreign equity of a project. Thus, a simple, accurate and transparent tool is needed to conduct a systematic assessment of clean energy and GHG reduction projects.

The Ernest Orlando Lawrence Berkeley National Laboratory (Berkeley Lab) has developed a cutting-edge tool entitled *ProForm Software*. ProForm is a straightforward software model, built on a MSExcel based platform, that evaluates the environmental and financial attributes of renewable energy projects that involve electricity generation or non-electric energy production or energy efficiency projects that save electricity and/or fossil fuel. The software has been deemed a decision-making tool for companies and a pre-screening mechanism for financial institutions to accurately assess the performance of clean energy technological interventions. The ProForm Software has been successfully "road-tested" across the world and is currently being utilized by a diverse stakeholder community.

The Louis Berger Group, Inc. (LBG) Global Environment Team is currently implementing the "Greenhouse Gas Pollution Prevention Project - Climate Change Supplement" (GEP-CCS), a program of the U.S. Agency for International Development/India Mission. The program intends to improve the understanding of climate change and develop strategies, tools and actions for reducing GHG emissions. LBG/GEP-CCS and the Berkeley Lab have formed a collaborative partnership to bring the ProForm Software to India. ProForm is thus becoming a globally accepted, practical tool that can be available to Indian industry, utilities, government, financial institutions and other stakeholders to identify project operational and financial risks and opportunities from the related GHG emissions.

At the macro level, implementation and use of the ProForm would provide a common framework for the preparation of clean energy projects that would be submitted to National Governments and/or Climate Change Offices for approval or funding. The successful widespread utilization of the ProForm Software will lay the groundwork for further catalyzing clean energy project development endeavors in India, from small-scale entrepreneurs to large industry project developers.

SECTION III.

ProForm Background and Applications

PROFORM BACKGROUND AND APPLICATIONS

A Tool for Assessment of Renewable Energy and Energy Efficiency Projects

I. WHAT IS PROFORM?

ProForm is a software tool designed to support a basic assessment of the environmental and financial impacts of renewable energy and energy efficiency projects. Given the necessary data, ProForm calculates basic financial indicators and avoided emissions of CO₂ and local air pollutants expected from a project.

As a spreadsheet-based tool, ProForm is designed to be simple enough to be easily usable, yet sophisticated enough to provide credible results. A typical application of ProForm would be in preparation of a project proposal that the developers might submit to potential investors, financiers, or a national climate change office. ProForm allows project developers, financial institutions, and other parties to investigate how changes in basic assumptions affect the key parameters of a project.

II. TYPES OF APPLICATIONS

ProForm is designed for assessment of renewable energy and energy efficiency projects. ProForm can be used for renewable energy projects that involve either electricity generation or non-electric energy production, and for energy efficiency projects that save electricity and/or fossil fuels.

Within the above categories, ProForm allows for assessment of:

- Displacement of fossil fuel combustion associated with electricity production, and/or
- Displacement of fossil fuel combustion at the end-use level.

ProForm can be used for a project that involves a single installation, such as an energy efficiency improvement at a factory or an installation of a wind turbine, or for one that involves installation over time of multiple units of a technology, such as a residential lighting efficiency program.

III. BASIC ASSESSMENTS BY PROFORM

- *Environmental Assessment* -- ProForm calculates emissions of CO₂ and several local air pollutants that may be avoided as a result of a project. It allows the user to construct a baseline that can reflect changes in emissions impacts expected over the lifetime of the project.
- *Financial Assessment* -- The financial assessment in ProForm is from the perspective of the sponsor of the project. A basic assessment considers a locally-owned project that sells carbon credits, while an advanced assessment can consider a project that has a foreign equity investor.

IV. DATA REQUIREMENTS

ProForm requires basic performance and cost data for the technology to be installed, the number of units expected to be installed in each year, and data on the baseline technology that will be displaced as a result of the project. For projects that will displace grid electricity, the user can estimate the extent to which various types of electricity generation will be affected. In addition to technology cost data, the financial assessment requires data on costs of any fuel inputs for the project, and of fuel use or electricity generation that will be avoided. ProForm is able to accommodate data on carbon credits, grants, or tax credits that may be associated with a project.

V. OUTPUT FROM PROFORM

The main financial results are the project's IRR and NPV with and without revenue from carbon credits. By modifying assumptions regarding the value of carbon credits, the user can assess what the financial impact of these credits would be under varying future scenarios.

VI. CONTACT AND DOWNLOAD INFORMATION

For more information about ProForm, please contact Bill Golove of Lawrence Berkeley National Laboratory (E-mail: whgolove@lbl.gov; Tel: 510-486-5229; Fax: 510-486-6996).

You can now download ProForm v2.0 beta at: <http://ectd.lbl.gov/proform/>. Version 3.0 will be available in early October 2002. There is no cost for downloading or using ProForm.

SECTION IV.

Presentation



ProForm: A Tool for the Assessment of Renewable Energy and Energy Efficiency Projects in India

Lawrence Berkeley National Laboratory



- ProForm is a simple, accurate, transparent approach to basic financial and environmental analysis of potential clean energy projects
- Includes capability to evaluate impacts of potential carbon revenues on project finance
- Built on Excel platform
- Distributed free of charge; training also provided as interest warrants (and funding permits)
- Tool in development for market in development
- Seed funding provided by DOE; on-going development, distribution and training supported by USAID

Development of

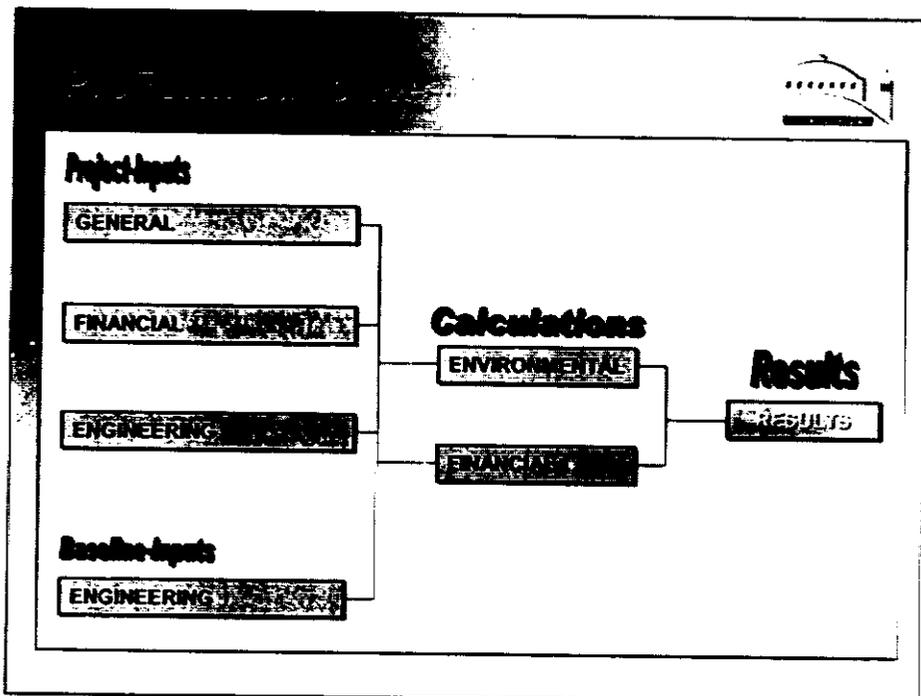


- Need for a common framework to conduct assessment of clean energy projects (i.e., projects with greenhouse gas reduction benefits)
- Lack of familiarity among small entrepreneurs in developing countries with financial analysis/pro-formas
- Lack of access among local developers to expensive project analysis software
- Requirement for evaluation of the impact of potential revenue from carbon credits under alternative project financing arrangements (additionality)

Types



- Energy Efficiency
 - Displaces electricity (lighting retrofit)
 - Displaces fossil fuel (factory retrofit)
- Renewable Energy
 - Grid-connected electric systems (windfarm, small hydro)
 - Off-grid electric systems (PV lighting)
 - Non-electric systems (solar water heating)
- Co-Generation



- ### Form
- Provides practical, common, transparent approach to pre-feasibility analysis
 - Reduces complexity, cost and subjectivity in estimating financial and environmental (including GHG) benefits otherwise imposed by a multitude of cost and GHG accounting approaches
 - Provides greater certainty for both developers and national climate change programs
 - Permits sensitivity analysis of project parameters
 - Aides in the preparation of project proposals
 - Aides in the evaluation of project proposals

Who uses ProForm?



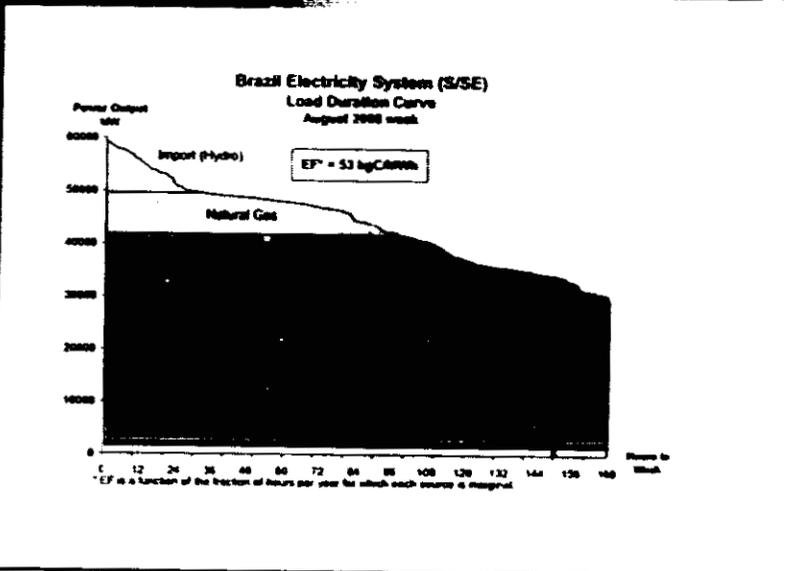
- Entrepreneurs in developing countries
- National climate change/energy offices
- Individual/multi-lateral investors and financiers
- Energy/development NGOs

Experiences with ProForm

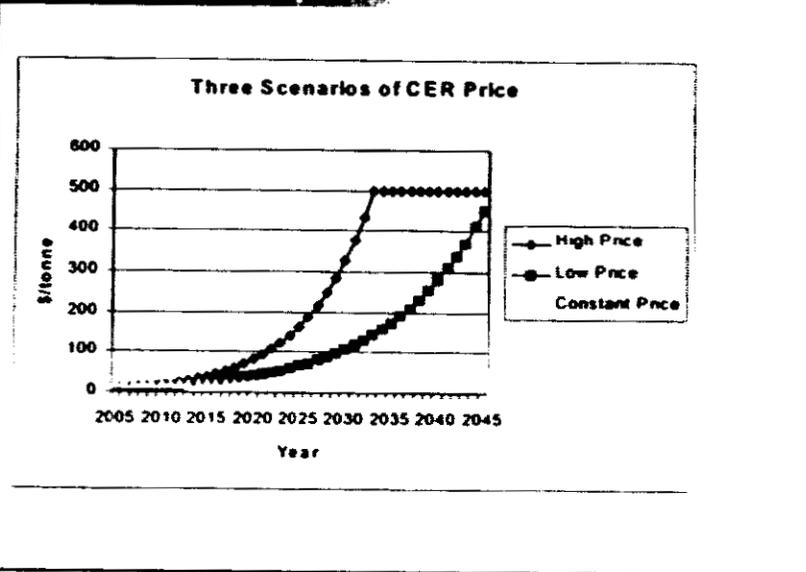


- Demonstrations
 - ProForm has been demonstrated at a variety of workshops and conferences around the world
 - ✓ Hungary, Brazil, Guatemala, Honduras, Paraguay, Manila, Mauritius, India
- Technical assistance
 - Currently supporting active users in India, Brazil, South Africa, Central America and elsewhere
- Successes
 - ProForm was used to submit two small hydro projects in Guatemala for acceptance by USIJI
 - ProForm has been selected for use in Amazon baseline project

Carbon Baseline



Carbon Price



Projects - Summary



Location	Project	Total Capital Invest (US\$000)	IRR (Without CC's)	Total Tons Carbon
Inner Mongolia	Wind Turbines	N/A	N/A	2540362
Andhra Pradesh, India	Biomass Generation (Poultry Litter)	\$ 1,032,278	68%	389567
Karnataka, India	Mini Hydro	\$ 1,078,900	69%	139428
Tamil Nadu, India	Waste Heat Recovery From Coke Oven Plant	—	—	2158427
NE Brazil	Lighting Efficiency in Supermarkets (CFL)	\$ 1,000,000	39%	5407
NE Brazil	Sawmill Cogen	\$ 8,250,000	14%	112350
NE Brazil	Wind Farm	\$ 50,000,000	7%	241318
Southern Algeria	Wind Farm	\$2,100,000	19%	165093

Projects and Future



- Currently distributing ProForm Version 3.0 via the web, email and CD
- Working with a variety of user to explore potential improvements
- Working to establish in-country partners to assist with development and distribution of ProForm, as well as training in its use
- Expecting to develop custom versions where distribution partners have unique requirements
- Will hold several in-country "training the trainers" workshops over the next 18 months
- Will use ProForm to prepare a series of project case studies



- ProForm Version 3.0 is available free of charge at:

<http://eetd.lbl.gov/proform/>

- Related tools and publications are available at:

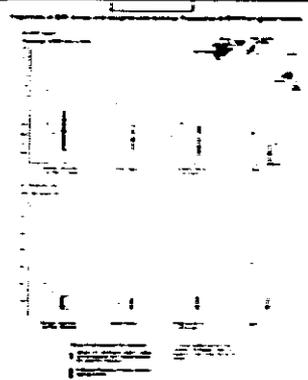
<http://eetd.lbl.gov/ea/environment.html>

Annex C:
Presentations

Multi-project Baselines: An Approach for Standardizing Project Greenhouse Gas Estimation

Jayant A. Sathaye
Lawrence Berkeley National Laboratory
University of California,
Berkeley, CA
October 2002

Trading Reduces
Projected GDP
Losses and the
Marginal Costs of
Compliance with
the Kyoto Targets in
Annex II Countries



Greenhouse Gas (GHG) Emissions Offsets Projects

- Offsets an entity's GHG emissions at another place
- Confined to a specific geographic location, time period, and institutional framework so as to allow changes in GHG emissions attributable to the project to be monitored and verified.
- Examples:
 - CDM, JI
 - US SO₂ and NO_x offsets,
 - UK, Canada, etc. domestic offsets programs
- GHG accounting follows "baselines and credits" approach
- Need methods that may be commonly applied to all offsets projects

Steps to Determine Additionality and Estimate Project GHG Benefit

1. Define project
 - Project type, output, input, boundaries
2. Determine additionality
 - Assess project developer's intent for undertaking a project
 - Emissions additionality
3. Estimate project GHG benefit relative to a baseline

Steps to Estimate Baseline Emissions

1. Establish the activity level – same for baseline and project.
2. Estimate a baseline emissions rate
3. Calculate baseline emissions – *Adjust for estimated free riders*
4. Estimate the project emissions rate
5. Adjust project emissions for *estimated leakage*
6. Calculate the incremental GHG benefit (Baseline emissions - Project emissions)
7. Repeat steps 1 through 7 after a set number of years (crediting period)

Multi-project Baseline Approach

Priorities: Credible, transparent, and practical

Goal: Estimate GHG benefit so as to reduce complexity, cost and ineffectivity of project-specific baselines approach

Attributes:

- Based on objective benchmarks not case-by-case hypothetical baselines
- Provides greater certainty for both developer and program
- Reduces transaction costs of an offsets project

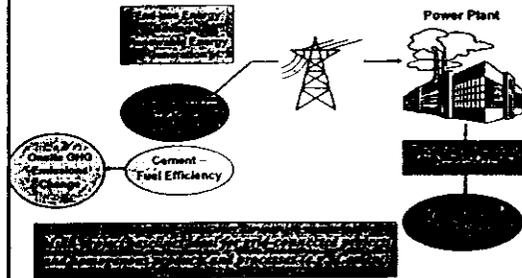
Application:

- Broad category of projects in relevant sector in a geographic region
- Best in sectors with homogeneous output and no sudden changes
- Cost-effective in sectors with many projects

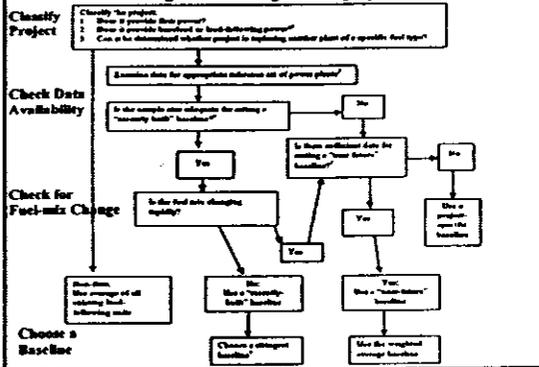
Transaction Costs

- Non-GHG related costs
- GHG related costs –
 - Decrease as a nascent GHG trades market becomes mature
- Categories of costs
 - Project search
 - Feasibility studies
 - Negotiation
 - Insurance
 - Monitoring and verification
 - Regulatory approval

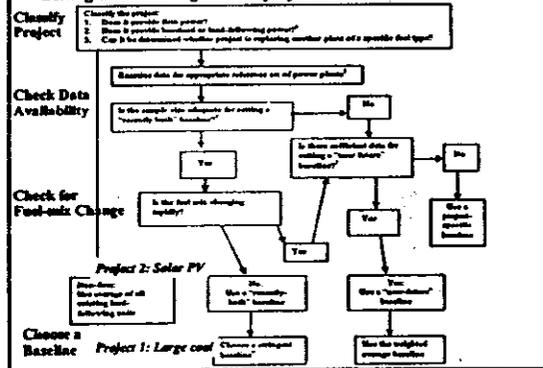
Application of Multi-project Baselines



Setting and Selecting a Multi-project Baseline



Setting and Selecting a Multi-project Baseline – An India Grid



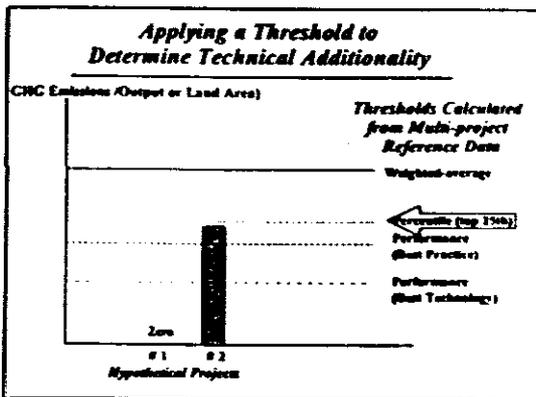
Hypothetical Projects: An India Grid

		Project 1	Project 2
Fuel		99% coal 1% oil	Solar
Capacity	(MW)	1000	6
Type		Baseload- 25th percentile	Non-firm
Annual generation	(TWh)	6.132	0.006
Emissions rate	kg CAWh	0.220	0.000
Benchmark rate	kg CAWh	0.316*	0.001
Difference in rates	kg CAWh	0.096	0.001
CERs	kt C	591	0.006

Determining Emissions Additionality

A measure (threshold) that the project is better performing than would be expected under business as usual

- Percentile - relative definition of "good" performance (e.g., top 10th percentile)
- Performance - best practice, best available technology, efficiency standards (e.g., energy intensity of state-of-the-art lighting fixtures), new land-use management practices
- Composite - above approaches combined with other measures (e.g. top 10th percentile and significantly improved penetration rate of technology or practice)



- ### Monitoring Project Performance
- Measurement of greenhouse gas reductions or removals that occur as a result of a project including:
 - Engineering methods
 - Statistical models and methods
 - End-use metering or monitoring technology
 - Remote sensing/ground truthing
 - Surveys and sampling
 - Protocol needed to monitor projects if the emissions within and outside the project boundary that are reasonably attributable to the project

- ### Verifying Monitored Results
- Establishes whether the measured GHG reductions or removals actually occurred, similar to an accounting audit
- Auditing bodies (either private or governmental) perform audits with necessary due diligence, adhering to guidance provided by the offsets program
 - Audits may recur periodically, on an annual or biannual basis, or at the request of the project developer or program administrator

- ### International Energy Studies/LBNL Project Assessment Tool Box
- LBNL work on collection, monitoring and verification of greenhouse gases began in 1996 and resulted in over two dozen book chapters, papers, and publications, and about a dozen training workshops
 - Millen Model -
 - Setting multipoint baselines for electric power and cement projects. Super cooperation projects under development
 - Carbon Model -
 - Financial, GHG, and other pertinent estimates of energy efficiency and renewable energy projects
 - MERYC Workshops -
 - Energy efficiency, renewable energy, and forestry projects
 - Industrial Energy Libr -
 - Energy efficiency benchmarks, voluntary programs
 - Energy Match - COMAP, PROCOMAP
 - Forestry, forest protection, biofuels, forest management
 - IES Web Site: International Energy Studies (IES) — <http://ies.lbl.gov/>

Thank you

<http://ies.lbl.gov/>

Annex D:
Proform Software Overview

PROFORM SOFTWARE OVERVIEW - BACKGROUND AND APPLICATIONS

A Tool for Assessment of Renewable Energy and Energy Efficiency Projects

I. WHAT IS PROFORM?

ProForm is a software tool designed to support a basic assessment of the environmental and financial impacts of renewable energy and energy efficiency projects. Given the necessary data, ProForm calculates basic financial indicators and avoided emissions of CO₂ and local air pollutants expected from a project.

As a spreadsheet-based tool, ProForm is designed to be simple enough to be easily usable, yet sophisticated enough to provide credible results. A typical application of ProForm would be in preparation of a project proposal that the developers might submit to potential investors, financiers, or a national climate change office. ProForm allows project developers, financial institutions, and other parties to investigate how changes in basic assumptions affect the key parameters of a project.

II. TYPES OF APPLICATIONS

ProForm is designed for assessment of renewable energy and energy efficiency projects. ProForm can be used for renewable energy projects that involve either electricity generation or non-electric energy production, and for energy efficiency projects that save electricity and/or fossil fuels.

Within the above categories, ProForm allows for assessment of:

- Displacement of fossil fuel combustion associated with electricity production, and/or
- Displacement of fossil fuel combustion at the end-use level.

ProForm can be used for a project that involves a single installation, such as an energy efficiency improvement at a factory or an installation of a wind turbine, or for one that involves installation over time of multiple units of a technology, such as a residential lighting efficiency program.

III. BASIC ASSESSMENTS BY PROFORM

- **Environmental Assessment** – ProForm calculates emissions of CO₂ and several local air pollutants that may be avoided as a result of a project. It allows the user to construct a baseline that can reflect changes in emissions impacts expected over the lifetime of the project.
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ProForm requires basic performance and cost data for the technology to be installed, the number of units expected to be installed in each year, and data on the baseline technology that will be displaced as a result of the project. For projects that will displace grid electricity, the user can estimate the extent to which various types of electricity generation will be affected. In addition to technology cost data, the financial assessment requires data on costs of any fuel inputs for the project, and of fuel use or electricity generation that will be avoided. ProForm is able to accommodate data on carbon credits, grants, or tax credits that may be associated with a project.

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The main financial results are the project's IRR and NPV with and without revenue from carbon credits. By modifying assumptions regarding the value of carbon credits, the user can assess what the financial impact of these credits would be under varying future scenarios.

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SECTION II

Section II:

Development Alternatives Study Tour to COP 8
(October 18 – November 1, 2002)

DEVELOPMENT ALTERNATIVES STUDY TOUR TO COP 8



EXECUTIVE SUMMARY

Background

The Louis Berger Group Inc. (LBG) while implementing the "Greenhouse Gas Pollution Prevention Project – Climate Change Supplement (GEP-CCS)", a program of the USAID/ India, continues to work towards improving the understanding of climate change as it develops strategies and actions for reducing GHG emissions. Under the institutional building focus area of the GEP-CCS project, CLIN 1: "Fostering Climate Change Initiatives for Sustainable Development" LBG/GEP-CCS has been assisting the Society of Development Alternatives (DA) and the Climate Change Center (CCC). The activities of the CCC are focused in three main areas: (a) outreach and awareness building on climate change related issues, (b) provision of technical assistance to develop climate change mitigation projects, and (c) research related to modalities and procedures for developing climate change mitigation projects and other issues related to climate change and its impacts.

Over the last few years, the LBG/GEP-CCS project team has been working closely with the CCC housed at DA to build its capacity to become an efficient facilitation Center and to better provide support services to its clientele on climate change related initiatives. These capacity building efforts have focused on strengthening the Center's institutional capacity and technical capabilities on climate change mitigation project development and to help the Center meet its sustainability goals. The primary goal of the institutional capacity building of the DA CCC was to help the Center become a Climate Change "Champion". The host entity, DA, already has a certain reputation as one of India's leading environmental NGOs, and occupies a position of respect in the national and international community for its role in grassroots development and policy advocacy. The effort to raise the profile of the CCC, and increase its credibility and visibility, was accordingly undertaken using numerous calculated and structured opportunities which also leveraged DA's positioning. The objective was to strengthen the CCC's national and international presence as a leader in Climate Change issues in India.

DA CCC Activities at COP-8

The 8th Conference of Parties held in New Delhi, India in the fall of 2002, presented a valuable opportunity for DA, and in particular the CCC, to gain prominence as an international climate change policy and research leader. DA had been identified as one of India's three designated NGO hosts during the COP-8. LBG/GEP-CCS utilized this opportunity to boost CCC into a leadership role on climate change issues, by providing it financial and technical assistance to fulfill its host obligations and responsibilities prior to and during the COP-8 event. Specifically, the CCC undertook to implement/ coordinate the following primary activities associated with the COP-8:

- i. Coordination of the Indian NGO Forum Secretariat¹;
- ii. Support for an Indian NGO delegation Study Tour;
- iii. Organization of the pre-COP event “Inter-regional Conference on Adaptation to Climate Change”; and
- iv. Organization of two main side events during COP-8, namely workshops on “Market Based Mechanisms for GHG Mitigation: Issues and Concerns” and “Plan, Programs and Achievement of South Asian Countries regarding Adaptation to Climate Change”.

This report focuses on the activities undertaken under ii: *Support for an Indian NGO delegation Study Tour* above.

Study Tour Objectives

There were multiple objectives in supporting a study tour for Indian NGOs during the COP 8: to better position the DA CCC; to engage the grass-roots NGOs; and to provide an opportunity for more Indian NGO input into the climate change dialog.

The funding assistance to CCC to enable the “study tour” of selected Indian NGOs was directly aimed at strengthening the CCC’s role as a lead facilitator and an apex body for the larger Indian NGO community, thereby further contributing to the overall goal of helping CCC be recognized by Indian NGOs and the international community as a Climate Change principal in India. Raising the Center’s profile would also contribute to ensuring the longer term sustainability of the Center as an institutional entity.

From the perspective of long term sustainability for greenhouse reduction efforts, the CCC and LBG/GEP-CCS also felt that it was critical to enlist NGO leaders as “champions”, and to provide them with first-hand information on the various aspects of climate change. The participation of these grass-root Indian NGOs in the various COP 8 activities was expected to ultimately result in a greater awareness and understanding of climate change issues at the community level. Through exposure to other international NGOs and participation in the Inter-Regional Conference on Adaptation which the CCC hosted prior to COP 8, the study tour group of Indian NGOs would be able to better appreciate the links between climate change, GHG reduction and related topics like watershed management, sustainable agriculture and rural energy. This exposure and learning opportunity was anticipated to provide an important informational element that would result in a broader understanding of climate change issues. In turn, the lessons learned from shared experiences between Indian and international NGOs, and in particular NGOs from developing countries who are facing similar conditions, could lead to more effective dissemination practices at the community level and integration of the climate change theme into local developmental activities.

Last but not the least, the involvement of grass-root Indian NGOs was meant to contribute to the COP process by bringing the rural and community perspective into the deliberations. This was particularly relevant in the discussions on adaptation – a theme that drew special emphasis during COP-8, largely due to the efforts of DA and the CCC.

¹ The concept of an Indian NGO Forum was launched by DA along with other Indian NGOs working on climate change issues, with the explicit objective of facilitating participation of Indian NGOs in COP-8 and coordinating their activities during the event.

Scope of the Study Tour

A list of twenty NGOs was identified for inclusion in the study tour delegation to the Inter-Regional Conference on Adaptation and the various COP-8 activities. DA's extensive linkages with the grass-root sector were critical to developing the study tour participant list. Potential participants were identified and selected by organizational strength, work on environmental or community issues, regional spread and influence.

The participants in the delegation were from different parts of the country (e.g. Maharashtra, Rajasthan, Tamil Nadu, West Bengal), and from diverse fields related to environment and development. While some of these NGOs were working directly on climate change issues, the rest were not working directly on climate change, but on related fields such as watershed management, sustainable agriculture, and rural energy.

The NGOs participated in the COP-8 from October 23 to November 1, 2002, as well as in the pre-COP event "Inter-regional Conference on Adaptation to Climate Change" organized by DA during October 18-20, 2002.

Observations

The CCC managed the logistics for the study tour delegation, including travel arrangements, transportation, lodging and distribution of per-diem. The Center's role as an international NGO host for other activities associated with COP-8 proved to be advantageous to the smooth execution of the study tour. For instance, the coordination of the movements of the Indian NGO study tour delegation was facilitated by the Indian NGO Forum Secretariat (e.g. DA CCC), and DA's role in the organization of the pre COP Inter-Regional Conference on Adaptation and other COP 8 side events, enabled a more effective engagement of the study tour group in the various activities.

The following were some of the specific ways in which CCC facilitated the participation of the Indian NGO Study Tour group (either directly or through the Indian NGO Forum Secretariat):

- Disseminated information about COP-8 to the NGO participants.
- Worked with the delegation in organizing tailored schedules to special events and plenary sessions of delegates' interest by providing real time information from the negotiations.
- Helped the delegation to also play an integral role in participating and presenting during the "Inter-regional Conference on Adaptation to Climate Change".
- Fostered dialogue between the delegation and the international NGO community to discuss climate related issues on a broader scale.
- Acted as an interface between the Indian NGO community and the press, as also an intermediary between the Government of India (GOI) and NGOs.

From a policy perspective, throughout the COP-8, the CCC (through its responsibilities under the Indian Forum Secretariat) actively worked to bring forward the views and experiences of the NGO community in

India regarding climate change, its impacts and policy measures. Moreover, it worked with its other NGO counterparts to define and to put forward a statement of shared concerns by the civil society.

Subsequent to the events, the CCC worked closely with the participants of the study tour in devising action plans to integrate climate change issues into their respective activities.

The Indian NGOs participating in the study tour benefited in various ways, including:

- Exposure to the international process of negotiations on climate change, especially the manner in which NGOs can participate in international, national and local fora.
- Enriched their understanding of climate change issues with its associated complexities, and opened up horizons for further activities in the field of climate change and related areas such as watershed management, sustainable agriculture, disaster preparedness, etc. to negate the effects of climate change and possibilities to alter the course of events by slowing the rate of growth of GHG emissions.
- Information on new technologies, and updates on various initiatives on climate change being undertaken by multi and bilateral organizations and NGO's.

Importantly, participation of these selected NGOs in the pre-COP event and COP-8 provided them with an opportunity to interact and network with like minded individuals/ groups from all over the world, leading to possible collaborations in the future. There appeared to be a particularly high potential for joint activities at a South Asian level on adaptation strategies, judging from the feedback that came out of the Inter-regional Conference.

Outcomes

LBG/GEP-CCS's financial support for the NGO study tour during COP 8 and the additional assistance to the CCC to help DA fulfill its role as a designated NGO host for the events during COP8 were instrumental in furthering the Center's position as an international climate change leader in India and internationally. Provision of funding for the DA CCC to support participation of the grass-root NGOs has in particular helped elevate the Center's status among the NGO community, as evident from the feedback provided by the participants. Several of them also expressed interest in organizing programs/ events related to climate change in partnership with DA. This would be particularly useful in developing and implementing future activities on climate change mitigation and adaptation.

The participation in the events helped the NGO's gain a much deeper insight into climate change related processes and issues. This improved understanding has translated into the following impacts at the grass-root level:-

Widespread dissemination: Subsequent to the study tour, most of the participating organizations have organized awareness and outreach programs which include: integration of the climate change theme in school curricula as part of environment education; informal education campaigns; booklets; leaflets; street plays; training workshops; videos; newsletters; fact-sheets; eco-clubs and so on. Several participants also organized district level consultation meetings on climate change and adaptation so as to sensitize decision makers at the local level, by exploring the implications for these issues for policy makers and communities.

Development of local level action plans: It can be said, that to a great extent, the study tour has catalyzed the NGOs to take a proactive stance on climate change issues. One important outcome has been the inclusion of climate change as a theme in the participants' regular activities, such as rainwater harvesting, recharging of rainwater, construction of check dams in drought affected districts, de-silting and restoring lakes, tanks and ponds, and propagation of energy intensive building materials and techniques. There seems to be a greater appreciation of the local role in combating this global problem.

Increased engagement on adaptation: In their feedback on the conference, several participants commented on their newfound appreciation of the adaptation aspect of climate change. As one of them commented,

"Before the Conference I thought that climate change was a single issue, and mitigation was the only important thing. But the Inter-regional Conference on Adaptation to Climate Change was an eye opening opportunity for me. I understood that adaptation is an important issue as well as mitigation."

This improved understanding of the implications of climate change for people at the local level, and their vulnerability to natural disasters and changing environmental conditions, has introduced a new sense of urgency/ import to the local initiatives of the NGOs. Several of them, especially those operating in the coastal areas, have developed plans to raise public awareness of adaptation concerns, and also to protect fragile ecosystems such as the mangroves and coral reefs. This heightened awareness of adaptation issues among the NGO community at the Conference, enriched the deliberations at the event and contributed to inclusion of language on adaptation in the "Delhi Declaration".

Improved potential for collaborative activities: The interactions between the participants and representatives from NGOs/ semi-government bodies from other parts of the world, opened up possibilities for collaborative action in the future. This could prove especially relevant at the South Asian region level, where countries have common concerns of excess dependence on agriculture, threats to bio-diversity, vulnerability of coastal ecosystems and widespread poverty. Adaptation strategies could be developed and implemented jointly for combating the effects of climate change, which would require capacity building at the national as well as local levels. The increased awareness of adaptation issues at the local level, along with the interactions of the participating NGOs with other international groups, would greatly help in developing such collaborative strategies going forward.

DA CCC Follow up/ Next steps

- Maintain contact with participants to sustain the momentum on climate change related action.
- Send updates on subsequent developments on the climate change negotiation process.
- Foster development of outreach programs and action plans for implementation.

STUDY TOUR PARTICIPANTS

- **Dr. Joyshree Roy**
(*School of Oceanographic Study, Jadhavpur University Kolkatta*)
- **Prof Sugata Hazra**
(*School of Oceanographic Study, Jadhavpur University Kolkatta*)
- **R Arul**
(*Pasumai Thaayagam, Chennai Tamil Nadu*)
- **Amit Kumar**
(*Kumarappa Institute of Gram Swaraj , Jaipur*)
- **Sanjay Rautela**
(*Devoted Organization for Reforming Environment, Almora*)
- **Dr. Erach Barucha**
(*Bharatiya Vidyapeeth Institute of Environment & Research (BVIEER)*)
- **Mr. B. Parthan**
(*IT Power India Pvt. Limited Pondicherry*)
- **Arun Datta**
(*Consumer Unity & Trust Society, Calcutta*)
- **Bindu Bubbar**
(*Indian Institute Of Youth Welfare, Nagpur*)
- **C E Karunakaran**
(*Tamil Nadu Science Forum*)
- **George Joseph**
(*Society for Social Development*)
- **Jagveer Singh**
(*Gram Vikas Nav Yuvak mandal VIII*)
- **Jasphool Singh**
(*Chaubisi Vikas Sangh Rohtak, Haryana*)
- **Debi Goenka**
(*Bombai Environmental Action Group, Mumbai*)
- **Mr. Yunus Saleem**
(*Karnataka Welfare Society*)

S.No	Name	Organisation	Organisation Profile	Remarks
1	Dr. Joyashree Roy	School of Oceanographic Study Jadavpur University Kolkata	Multi-disciplinary research ,including environmental pollution and climate change	Presenting in the side event
2	Prof Sugata Hazra	School of Oceanographic Study Jadavpur University Kolkata	Multi-disciplinary Research, including environmental pollution and climate change	Presenting in Adaptation Conference
3	R. Arul	Pasumai Thaayagam (Green Mother Land) DR. Mohan Sinha Mehta Marg Chennai Tamil Nadu	Environmental protection,sustainable development and self governance	Active in educating people.greening environment and self governance
4	Shri S. K Mishra	Centre for Environment Protection Research and development (CEPRD) New Palasia Indore	Enviornmental Protection and developmental programs through school networks	Good network of schools
5	Amit Kumar	Project Co-ordinator Kumarappa Institute of Gram Swaraj B-190 university marg Bappu Nagar, Jaipur	Study and survey of rural problems and implementation of development projects	Activities have strong linkages with CC impact
6	Mr. Sanjay Rautela	Devoted organization for reforming Enviornment 196-D, Khari Bazaar Raniket, dist Almora Uttanchal	Water resources management and biodiversity conversation	Excellent watershed management programs

7	Dr. Erach Bharucha	Bhartiya Vidyapeeth Institute of Environment & Research (BVIEER)	Water resources management , sustainable development and environmental protection through community participation	A very good model of community participation for environmental protection
8	Mr. B. Parthan	IT power India Pvt. Limited No.6, Romain Rolland Street pondicherry	Development and implementation of sustainable energy & climate change projects.	Member small scale CDM projects panel
9	Mr. Arjun Datta	Consumer Unity & trust society 3, Seren Tagore Road Calcutta	Consumer mobilisation for climate friendly technologies and products	Well aware of ozone depletion , climate change etc.
10	Ms Bindu Bubbar	Indian Institute of Youth welfare Nagpur	Natural resource management ,environment and education,women and child development	Strong community mobilization
11	Mr. C.E Karunakaram	Tamil Nadu Science Forum	Science popularization ,micro credits,enviromental education and awareness in all over Tamil nadu	Planning to raise awareness about climate change through their network.
12	Mr. George Joseph	Society for Social Development	Action research institute for environmental issues	Interested in learning about climate change issues.
13	Mr. Jagveer Singh	Gram Vikas NavYuvak Mandal VIII Laporiya , Black Dudu , Jaipur, Rajasthan.	Involving youth in environmental and developmental activities	Strong community partnership
14	Mr. Jasphool Singh	Chaubisi Vikas Sangh Rohtak, Haryana	Natural Resource management ,watershed development,enviornment and education etc.	Strong community mobilization
15	Debi Goenka	Bombai Environmental Action Group Mumbai	Environmental Awareness	Good for dissemination
16	Mr. Yunus Saleem	Karnataka Welfare Society		

Section II:

Development Alternatives Study Tour to COP 8

Annexes

ANNEXES

Annex A:

DA Reports/Participant Report

Development Alternatives Activities in CoP8

Indian NGO Delegation Support

Final Report

Submitted by



Climate Change Centre
Development Alternatives

November 25, 2002

Indian NGO Delegation Support

Final Report

Introduction

CoP8 being held in India, Development Alternatives thought that it will be a good opportunity for capacity building and awareness generation of grass root Indian NGOs. With this view Development Alternative proposed to include twenty Indian NGOs in its delegation. Some of these NGOs were working directly on climate change issues whereas there were a few who were not directly working on climate change issues but were in the related fields such as watershed management, sustainable agriculture, rural energy etc.

These NGOs participated in the CoP8 as well as in the pre-CoP event "Inter-regional Conference on Adaptation to Climate Change" organized by Development Alternatives during October 18-20, 2002.

The selection of these NGOs was done in consultation with the Indian NGO Forum. Their logistics was taken care of by Development Alternatives. The whole initiative was supported by The Louis Berger Group Inc. and the United States Agency for International Development.

Major Outcomes

Benefits to Indian NGOs

Participation of Indian NGOs in CoP8 and the Inter-regional Conference on Adaptation to Climate Change provided them a good opportunity to get exposed to the international process on climate change negotiations.

Their participation in various events organized by Development Alternatives and enriched their erstwhile little understanding of climate change issues and opened up horizons for further activities in the field of climate change and related issues such as watershed management, sustainable agriculture, disaster preparedness etc.

The participants also attended the special events of their interest, organized by other organizations and attended some of the plenary sessions of CoP8. For many of them it was a lifetime opportunity to attend such a conference.

Participation of these NGOs in CoP8 provided them an opportunity for networking and multiplication.

Awareness Generation at Grass-root Level

Most of the NGO participants are part of some or the other network organizations. These NGOs will further disseminate the learning acquired through their participation to other network partners.

The dissemination plans as proposed by some of these NGOs are given below:

Dissemination Plans

Participation in both the events will be used to develop a strategy to include global climate change as a module of Environment Education for nearly 140 schools in which the Institute has a strong Environment Education outreach programme. After the two events, the modules on Global Climate Change will be developed in conjunction with the environment educators of the Institute and school teachers that have been actively participating in Environment Education for the last 7 years. The Institute will evolve appropriate Environment Education material for this purpose both in English and Marathi for 5th to 7th Standards and for 8th and 9th Standards.

.....*Bhartiya Vidyapeeth Institute of Environment Education and Research, Pune*

Chaubisee Vikas Sangh has grass root influences and field presence and has been organizing National Environment Awareness Campaign in the area since 1992. Chaubisee Vikas Sangh has also conducted Awareness Generation Programmes amongst children on Conservation of Bio-Diversity.

Through the learning from two events (Inter-Regional Conference on Adaptation to Climate Change and CoP8), Chaubisee Vikas Sangh will educate the people in the area, disseminate knowledge about climate change and its effects through formal, informal environment education campaigns and through action oriented components on various environmental issues.

Diverse target groups ranging from students / youth / teachers to farmers, professionals and rural population will be covered under the campaign. People of the region will be made aware about the ill effects of use of pesticides, insecticides & fertilizers and they will be advised to make less use of these through community participation meetings.

.....*Jasphool Singh, Chaubisee Vikas Sangh, Haryana*
Indian Institute of Youth Welfare would aim for the widest possible outreach and impact for dissemination regarding content of the two

events. Dissemination of documented findings would be tried at all levels of stakeholders, local and regional governments, agencies and NGOs, research and academic Institutions. Access to general public will be made by means of booklets, leaflets and guidelines, in conjunction with street plays, training workshops and videos, as well as also using existing communication channels such as mass media.

Our aim would be to raise awareness and support among relevant actors in order to increase their capacity to participate in environmental planning and management.

..... Bindu Babbar, Indian Institute of Youth Welfare, Nagpur

The two events, the Inter-Regional Conference on Adaptation to Climate Change and CoP8 would help in building linkages between the grassroots level sustainable development programmes carried out by Kumarappa Institute of Gram Swaraj and its impact on climate change. The two conferences would give a new vision and insight into activities which we are undertaking. It will also give an opportunity to know about new technologies in the areas of environment protection for adaptation to climate change.

As "Global Warming" has started showing its impact on India in the form of monsoon failure, severe drought in almost whole of India and floods in Bihar and North-East this year, people and government are in a state of shock. The learning's from the events would help in building an understanding of how to adapt to this climate change. Based on the learning, an action plan would be made at the Institution level to cope up with climate change.

..... Amit Kumar, Kumarappa Institute of Gram Swaraj, Jaipur

CUTS-CSPAC publishes a quarterly newsletter titled "EcoConsumer" (mailed to around 2500 institutions) and a quarterly electronic newsletter titled "Chapter-4" (mailed to around 5000 institutions, individual and list serves). The recommendations of the two events will be covered as a news item in both these publications ensuring that it is circulated widely.

CUTS-CSPAC would be undertaking a partnership initiative aimed towards awareness generation of elected legislators and consumer groups in five South Asian countries. The information gathered from this event will be used to develop fact sheets, which in turn will be mailed to these people.

The issue will also be disseminated to environmental management students at an event to be organised at Indian Institute of Social Welfare and Business Management in November 2002.

..... Arjun Dutta, Consumer Unity and Trust Society, Kolkata

Pasumai Thaayagam has initiated an unprecedented and innovative programme of desalting 1000 Eries in Tamilnadu. The programme commenced in June 2002 and as on 26th August 2002, Pasumai Thaayagam has successfully desilted 190 Eries with the involvement and active participation of local people and resources on one side and the Pasumai Thaayagam Volunteers on the other.

The programme, besides augmenting the water potential in the local area, has generated considerable awareness; confidence and hope in the local people and motivated them towards water harvesting. The response of the local people is so overwhelming that –this initiation of water hearvesting has turned into a “massive peoples’ Movement”.

PASUMAI THAAYAGAM will reach the goal of desilting and restoring 1000 lakes, tanks, ponds in the International Year of Freshwater 2003. At local level, a community sponsored and managed water security system will be formed with the help of elected local bodies. It is also planning to undertake watershed development plans in appropriate places.

Realizing the vulnerability of coastal areas to sea level rise, there is an urgent need to protect Mangrove forest areas and Coral reef. PASUMAI THAAYAGAM is planning to launch a massive awareness campaign to protect Mangrove forest areas and Coral reef in the east coast of Tamil Nadu. We will work to protect the Mangrove forest at Pitchavaram and Muthupettai in Cuddalore and Nagai Districts respectively and Coral reef in Gulf of Mannar Biosphere through organizing participation by local communities, research organizations, strategy planners and Governmental departments.

..... R. Arul, PASUMAI THAAYAGAM (Green Motherland-NGO),
Tamil Nadu

Future Outlook

The exposure to climate change negotiations during CoP8 and various other side events gave a fair understanding of climate change issues to the participants. Many of these participants have plans to include climate change as a theme in their regular activities as is expressed in their reactions given below:

Reaction of the Indian NGOs on their Participation in the Two Events

Thank you very much for the opportunity you have given to us to participate in the CoP8 events and the conference you have organised prior to that. It is a great opportunity for the NGOs like us, working at the grass-root level.

The experienced presentations during the conference enriched our knowledge in the areas of effect of climate change globally and our role to combat locally.

For the past 6 years we are working on the energy efficient building materials and alternate energy programme suitable for the rural areas. The present initiative helped us to involve more on the climate change programme.

After this event, we are proposing to take the rainwater harvesting and recharging of rainwater programme in the Kanyakumari district. Since most of the households extract the ground water without recharging it, due to this ground water table gets down and it is also one of the factors affecting the climate change.

Secondly, we are proposing to take initiative to propagate energy intensive building materials and technique by conducting mass awareness programme in two districts.

..... J. George Joseph, Society for Social Development, Tamil Nadu

Let me thank you once again for sponsoring me to these two events. I really enjoyed attending both of them. Since the Conference on Adaptation came a little before the CoP, it served as a good introduction to the major issues of concern to the world community. It also made possible to make acquaintances. The difficulty in reconciling the differing interests of nations in forging a common programme of action became evident in the Conference and was later more visible in the CoP-8. The Conference also made possible for me to gain a lot of knowledge on specific issues.

The CoP8 was particularly interesting and educative experience for me, since I had been following for some time the climate change debate in the international fora. The plethora of side events made it difficult to do full justice to all areas of interest, but I was able to attend a good number of them and

gather a lot of information. A lot more information was available in the form of literature made available by various agencies. One could get a more nuanced picture of the differing stands of not only countries, but also of the many NGOs who had come.

It was interesting to observe the manner in which NGOs tried to influence the course of events.

The information and knowledge gained during these events are very useful to me in carrying forward our Climate Change Initiative of spreading awareness. I also find that the contacts made during my stay at Delhi are very useful to fashion future collaborative action. Above all, interacting with your group was also a very rewarding experience.

..... C.E.Karunakaran, Tamil Nadu Science Forum, Tamil Nadu

Thank you very much for giving me an opportunity to present our work and concern on vulnerability of Sundarbans in a climate change scenario, to an international audience. I have learned a lot on the adaptation strategies that are being thought in south and south-east Asia in this respect and could compare and update our thinking in this regard. Participation in these two events organised by DA brought a rare opportunity to me to exchange ideas with scientists and social activists from all over the world, and I hope that this exchange will help me to design action research programme in my area of work on Integrated Coastal Management.

Apart from the knowledge dimension, I feel grateful to you to arrange meetings with representatives of the World Bank and wide spectrum of NGOs, particularly those from Bangladesh. As we suffer from similar type of impact, we hope to develop some kind of joint activities on adaptation strategy and sustainable development of this mangrove eco province. Presently I am at Vizag; I will contact you shortly after reaching Kolkata.

..... Sugata Hazra, Self Help Group, Kolkata

Thank you very much for your kind support and cooperation.

The Inter-regional Conference on Adaptation to Climate Change during October 18-20 and the COP 8 was very useful for our activities. I once again thank to you for inviting me to the Conference.

Before the Conference I thought that climate change was a single issue and mitigation was the only important thing. But the Inter-regional Conference on Adaptation to Climate Change was an eye opening opportunity for me. I understood that adaptation is an important issue as well as mitigation.

While mitigation is mainly a developed nation's responsibility, we are told to adapt to climate change when we have not created the problem! We are not the polluter but victims. I think, as a developing nation, adaptation is our urgent duty. Whether we are supported by developed nations or not, we ought to do it.

At CoP8, Industrialized countries have failed to contribute toward adaptation measures in developing countries. Developing countries, on other hand, have failed to demand concrete action. Liability is an important link in the adaptation process. As per "Polluter Pays" the developed nations should pay for adaptation actions. Communities affected by climate change should have a forum for redressal and compensation.

The issues such as adaptation and climate change cannot be dealt with in a few months or even years. As things stand today, developing countries do not gain from the adaptation discussions at CoP8. It is time to rethink the adaptation principle, from a mere begging bowl approach to a broad principle of polluters being held responsible for pollution.

Fighting against climate injustice in global environmental politics is important; at the same time Indians must not wait for foreign funding support. We have to act now with our own resources.

We need action today, and not just promises for tomorrow. Even though, if the world meets the Kyoto 'emission cut limit' we cannot avoid adverse climate change effect, only can reduce the effects.

Spending money and voluntary labour (like *Shramdan*) on adaptation is a saving for future generations, because the future cost of climate related calamities is many times higher than the present investment on adaptation.

As the Secretary to one of big organization in Tamil Nadu, I am very much impressed by the DA's Inter-regional Conference on Adaptation to Climate Change. At the same time, I was shocked to watch the Governments "Only Promises - Not Action" type CoP8.

We, Pasumai Thaayagam (Green Motherland), are very much interested in adaptation process. After I came back to Chennai, we have organized a small meeting on 11th November with our organization's district and regional level organizers (about 50 persons) to discuss about the DA Conference and CoP8.

Since, we agree that 'Adaptation is best served by action at the local level' - We are going to do the following actions.

Awareness Programmes on Climate Change and Adaptation.

1. We are using our own Tamil Magazine 'Pasumai Thaayagam' (20,000 Circulation) to spread the awareness on climate change and adaptation. Already we published few articles on the subject.
2. We are going to organize districts level consultation meetings on 'climate change and adaptation' at coastal districts of Tamil Nadu to design the future actions. The consultation will be conducted in January to March 2003 at Chennai (Main topic - sea erosion), Pondicherry (sea erosion), Chidambaram (Mangrove forest), Muthupet (Mangrove forest), Ramnad (Coral Reef).
3. We are going to organize eco-clubs to spread the awareness on climate change and adaptation in the schools which are situated within 50 Kms from coastal line.
4. A one-day workshop will be organized for Members of Parliament and Members of Legislative Assembly in Tamil Nadu.
5. A state level conference will be organized in July 2003.

Community Level Water Harvestings

1. In the International Year of Freshwater 2003, we are planning to construct at least 100 small check dams in drought-affected districts in Tamil Nadu.
2. We are currently undertaking 1000 tanks and ponds desilting programme, in which the work was completed in 220 tanks and ponds. We will reach the goal of desilting and restoring 1000 lakes, tanks, ponds in the International Year of Freshwater 2003.
3. We are organizing Water Users Associations in all the 1000 villages for Sustainable Water Resources Development.
4. We are planning to conduct workshops and trainings on water resources management.

I request you to add your suggestions to our action plan.

We wish to organize events/programmes related to climate change and adaptation for/with Development Alternatives in Tamil Nadu.

We need your advice and support.

.....R.Arul, PASUMAI THAAYAGAM (Green Mother Land), Tamil Nadu.

The two events i.e. Inter-Regional Conference on Adaptation to Climate Change and the CoP8 have helped in building linkages between the grassroots level sustainable development programmes carried out by Kumarappa Institute of Gram Swaraj and its relationship with climate change. The two conferences have given a new vision and insight into activities which we are undertaking. It has also given an opportunity to know about new technologies in the areas of environment protection for adaptation to climate change. As "Global Warming" has started showing its impacts on India in the form of monsoon failure, severe drought in almost whole of India and floods in Bihar and North-East this year, people and government are in a state of shock. The learnings from the events have helped in building an understanding of how to adapt to this climate change.

Based on the learning, action plans are being made at the Institution level to cope up with climate change.

..... Amit Kumar, Kumarappa Institute of Gram Swaraj, Jaipur

The opportunity provided by DA to participate in the Inter-regional Conference on Adaptation to Climate Change and in CoP8 and the benefits therefrom, are summarized in the following report.

ITPI participated fully in the three day inter-regional conference on adaptation held during the 18-20 October and thereafter attended some of the key side events which were organised at Vigyan Bhawan, India Habitat Centre and Hotel Samrat. Opportunity was also taken to visit the exposition organised at the Ashok Hotel apart from visiting the exhibits and stalls at Vigyan Bhawan.

The benefits from these meetings, deliberations and interactions included:

- A good overview of the issues and options for adaptation as well as realisation of the degree of vulnerability of the south;
- First hand information and update on the various initiatives on climate change awareness creation, capacity building, mitigation and adaptation by the multi-lateral and bi-lateral organisations and NGOs;
- Possibility for interaction with new organisations and individuals and explore collaborations in the future;
- Development of a deeper understanding of the climate change negotiation process, the issues involved and collection of documentation for further study and research;
- Possibility to interact with like-minded groups from the south and understand their activities and perspectives;

Conclusions and future outlook

- Similar support through DA and other apex environmental NGOs is quite useful to smaller organisations such as IT Power India to enhance our perspectives on climate change;
- Organisation of group participation and interaction provides opportunities for collaboration and hand holding which has the potential to lead to joint initiatives;
- The co-ordination and support provided by DA was good and was much appreciated. Also appreciated was the generous funding from the sponsors to the effort.
- Future similar initiatives in a group mode for major environmental and developmental conferences is encouraged and ITPI would be privileged to be invited/involved in such initiatives

..... *Binu Parthan, I T Power India, Pondicherry*

Reaction of Mr. Jagveer Singh, Gram Vikas Navyuvak Mandal, Laporiya, Rajasthan is given in following pages.

भी क्या लोजिक दिये जा रहे है। देशों के अलावा NGO या SGO (सेमी गवर्नमेण्ट ओरगेनाइजेशन) जैसे- DA, WWF, UNEP, UNECCC, वर्ल्ड बैंक आदि आदि क्या रोल अदा कर रहे है।

देशों में भी कितना मतभेद है, क्योतो प्रोटोकोल तो देशों की प्रोटोकोल थी उस पर भी मतभेद होना पुनः विडम्बना खड़ी करता है।

विशेष प्रयासों व शब्दावली

1. CDM क्लीन डवलपमेण्ट मेकेनिज्म- यह छोटे स्तर पर भी सम्भव है हम जैसे NGO भी अपने कार्य में इसे लागू कर सकते है।
2. SBI, SBSTA, सबसिडीयरी, बोडी ऑफ इम्प्लीमेण्टेशन व सबसिडीयरी बोडी फोर साइंटीफिक एण्ड टेक्नोलोजिकल एडवाइस : यह बातों को काम में व समस्या का मुनिष्ण में नदने के नैदनीन रूत है जो टा नगह बातोगत किषे ना सकते है।

हमारे संस्थान में मिटिंग व अनुभव शेयरिंग

इन्टरिजनल कोन्फेन्स व COP 8 के अनुभवों को हमने एक मिटिंग बुलाकर शेयर किया ताकि इस ग्लोबल मुद्दे से सभी अवगत हो सके।

अकाल, बाढ, साईक्लोन जो हमारी मूल समस्या है उसका कारण यह जलवायु परिवर्तन है अतः किस तरह हम लोग (NGO) इस जलवायु परिवर्तन में अपने आपको सुरक्षित कर सकते है और अडोप्ट कर सकते है।

Annex B:

Other Supplemental Materials

Final Report on

Side Events Logistics Support

Side Events

Development Alternatives organized two side events during the CoP8. These were:

- Market Based Mechanisms for GHG Mitigation: Issues and Concerns; on October 25th, 6-8 pm and
- Plan, Programmes and Achievement of South Asian Countries regarding Adaptation to Climate Change; on October 28th, 6-8 pm

A Brief Note on Side Events Logistics

The request for the side events was sent to UNFCCC Secretariat well in advance. The agenda for the events was prepared and circulated widely through posting on UNFCCC website, CoP8 website of the Ministry of Environment and Forests, Government of India and circulation of printed agenda during CoP8. Participants were invited through personal correspondence as well. Resource persons in the first side event were the practitioners in the field from all over the world whereas the second side event focusing on South Asian issues, the speakers were from the South Asian region only.

Both the side events took place in Vigyan Bhavan Complex. A part of the facilities were provided by the Ashok Reservation and Marketing Services who were contracted by the Ministry of Environment and Forests to provide logistics within the Vigyan Bhavan Complex. Other facilities were arranged by other service providers.

Side Event Outcomes

The first side event deliberated and discussed the issues and concerns related to market based mechanisms for GHG mitigation. The events received an overwhelming response. The recommendations brought were forwarded to the relevant ministries of the Government of India to incorporate the same in their negotiating drafts. Summary of the discussion and copies of presentations is provided in Annex I.

In the second side event the government and non-government representatives of the South Asian countries shared their experiences regarding vulnerability of their countries to climate change and initiatives going on to address such threats. The discussion also brought out the gap remaining, the technology transfer, capacity building and financial resources requirements of the South Asian countries to support adaptation programmes in these countries. Summary of the discussion and copies of presentations is available in Annex II.

Besides the negotiators, the summaries of discussion of both the side events were circulated widely for reference of other participants.

Benefits of the Side Events

- Both the side covered issues of concern related to climate change mitigation and adaptation in developing countries
- The side events provided a common platform for the practitioners to share their views and experiences
- The audience, specially the grass root Indian NGOs in the Development Alternatives delegation got a good opportunity to get exposed to the international process on climate change negotiations

Overall Contribution of Development Alternatives Role in CoP8

- Brought forward the issues of concern for India and for developing countries in general through various events organized and different kind of publicity materials
- The experienced presentations during various events enriched knowledge in the areas of effect of climate change globally and role of communities to combat it locally
- A good overview of the issues and options for adaptation as well as realisation of the degree of vulnerability of the south
- First hand information and update on the various initiatives on climate change awareness creation, capacity building, mitigation and adaptation by the multi-lateral and bi-lateral organisations and NGOs
- Possibility for interaction with new organisations and individuals and explore collaborations in the future
- Dissemination of the benefits up to grass roots level through presence of such stakeholders in CoP8 and their taking the learning back home
- Development of a deeper understanding of the climate change negotiation process, the issues involved and collection of documentation for further study and research
- Opportunity to interact with like-minded groups from the world over and understand their activities and perspectives
- Successful conduct of the whole event
- Visibility through media coverage, Annex 1 gives some of the clippings. In addition, the proceedings and press briefings were being telecast live during the event.

Future Outlook

The exposure to climate change negotiations during CoP8 and various other side events gave a fair understanding of climate change issues to the participants. Many of these participants have plans to include climate change as a theme in their regular activities such as rainwater harvesting, recharging of rainwater, construction of small check dams in drought-affected districts, de-silting and restoring lakes, tanks and ponds and initiative to propagate energy intensive building materials and techniques.

Many of the participating organisations have planned to organize awareness generation programmes and district level consultation meetings on Climate Change and Adaptation. Besides taking up initiatives at their levels, the organisations have also expressed their willingness to be part of mega programmes on climate change in India and add a building block towards success in addressing climate change.

Sustainable Livelihood Practices: A Self Help Group Model

Development Alternatives (DA) hosted an exhibition on Sustainable Livelihood Practices, at India Habitat Centre on the 28th October 2002 as part of CoP8. These sustainable livelihood practices are considered to be useful tools for adaptation to adverse impacts of climate change. The theme of the exhibition was very much in tune with the issue being discussed during CoP8 negotiations; such as vulnerability to climate change, transfer of clean technologies to developing countries, financial assistance to help the poor adapt to climate change, capacity building for climate research and information dissemination etc..

While representatives from 186 nations were struggling to reach a consensus on reducing the greenhouse gas emissions at the conference, the charminar lawns at India habitat centre was the rendezvous for those who contribute the least to environment problems but, are affected the most by environment disasters!

To empower the marginalised community and develop resilience to climate change DA strengthens their skills to enable them earn their livelihood in case of displacement as they are largely land dependent. Although they contribute the least to environment pollution but, they are the first and worst to be effected by any disaster.

In the event 40 members of Self Help groups (SHGs) who are actively involved in the process of entrepreneurship in the Niwari Block of Tikamgarh district in Madhya Pradesh were invited. Hand made candles, diyas (pottery), jute bags, woven bamboo baskets were the items in demand with the delegates who visited and interacted with the self help groups.

The women in the SHGs are proud owners of small initiatives, which enable them to reap economic benefits of mutual help, solidarity and joint responsibility towards self and sustainable development. SHGs are formed on two principles i.e. homogeneity and close proximity. Regular meetings to share views and deposit token money as a saving is a routine (monthly) curriculum. The money multiplies on the interest of inter-loaning and at the same time the loaning facilitates entrepreneurship among the members. Money is also used to cope with immediate needs like treatment of the diseased, marriage of girls, schooling of the children etc.

DA has taken the role of a facilitator to institutionalise the initiatives taken by the local communities through SHGs. The SHG formation is a process to nurture participatory leadership among the marginalised to identify, plan and initiate the development activities in the villages. Formation into SHGs enables the community to:

- Be visible members and raise collective voice "as an agent of change" in the development process
- Encourage marginalised people to save and utilise savings to build self-reliance and confidence
- Access to credit and inter-loaning facility
- Promote structural change as the SHG products are largely made by rural household units and these are favourable to women employment

Every year in India, artisanal contribution to the economy and the export market increases and new crafts-people are created - especially women - as a solution to rural and slum unemployment. Income generation through craft does not disturb the social balance of either the home or the community, however, the processes are being reinforced primarily by commercialisation. This has broken the traditional production system that was based on the unsustainable relationship between people, art and resources. These art and crafts industries have thereby shifted towards urban centres and non household sector. Through SHGs Development Alternatives endeavours to....

...reverse the decisions making process that has passed from artisans to the manufacturer, whose prime interest is sale.

...minimise hardships placed on the producers and to provide for the long-term survival of these gender neutral livelihood opportunities.

helped them calculate ones own CO2 emissions as a result of traveling, crossword puzzles etc. were some of the activities where all students enthusiastically participated.

3.The students also got an opportunity to express their views in a myriad of colours by painting T-Shirts with slogans, cartoons and illustrations. They also coined slogans on different concerns. While some wrote in words, other drew to express their views and concerns.

4.The students also got a chance to interact with the women from self help groups in Tikamgarh District, M.P. on their income generating sustainable livelihood activities. They also learnt more about their life in villages and how it is threatened by climate change.

Each school was given certificates and a set of videos on different environment issues to take back.

The Event was supported by Ministry Of Environment and Forest.

We care and We Act: An Exhibition by CLEAN-India Young Warriors

On 28th October, 2002 at India Habitat Centre, New Delhi

Around 200 students and teachers from eight schools in Delhi assembled at India Habitat Centre, armed with their models, posters and charts, all showing what they have been doing for environment and urged the adults to join them.

Each schools then deftly and artistically displayed their work, concerns and messages on different issues on environment. A brief on the stalls by the schools is given below

- CLEAN Water** by Delhi Public School, Vasant Kunj : Through colourful charts and models, the school displayed their work on water, which includes water monitoring and water harvesting
- Best Out of Waste** by Gyan Mandir School, Naraina : The students spoke about growing menace of garbage in cities and offered solutions which included a live demonstration of vermicomposting and paper recycling at a small scale.
- Nurturing and Protecting our Greens** by Carmel School: The school put up a colourful display of posters on the importance of growing and preserving trees. On display were important indigenous trees and a quiz for the participants. The posters showed the important features of one tree, how to identify it and the medicinal and ornamental properties.
- Eco Alternatives** by Montfort School: On display were working models on solar energy, drip irrigation, waste water treatment and herbal insecticides. These models have been developed by the students themselves, which were enthusiastically explained to the visitors.
- Eco Products** by Sanskriti School : *Different products which are not a drain on the environment were displayed artistically. The colourful display had students handmade paper bags, diaries and notepads made of recycled paper, natural holi colours, eco idols all showing the adults what they can adapt for a greener life.*
- CLEAN Air** by DAV Srestha Vihar: The sources, effects, monitoring and solutions to air pollution were all displayed here. On display were also interesting models like purification of SO₂, drying of grains with solar energy, solar heater, etc. The Pawan TARA air monitoring kit was also displayed and the students explained how they conduct air monitoring regularly with it's help.
- Water For All** by Salwan Public School: The school has initiated a simple way of harvesting the run off water from the water taps in their school. This water is used for irrigating their garden and the remaining recharges the ground water table. Also displayed were different aspects of water pollution and the Jal TARA water testing kit. Two simple, cheap yet effective water filters, which had been constructed by the school were also put up on display.
- Saving our Greens** by Delhi Public School, Mathura Raod: The school displayed what are the different threats to urban trees like tiling, nailing with advertisements, excessive pruning and their efforts in saving the trees.

The enthusiastic youth were then divided into groups representing the elements of nature namely water, air, trees and wildlife. Each group had students from different school, to facilitate interaction between different schools.

Apart from explaining the visitors about their schools' displays, students got the opportunity to participate in a variety of activities. Some of them are:

1. **Discussion on Climate Change and CoP-8** : In this session, students were made aware of climate change, its impacts and significance of CoP-8. Students also had the opportunity to interact on various issues related to climate change with different international delegates. This gave the students a broader perspective and enabled them a better understanding. The esteemed delegates, who graciously took time off from their busy schedule, shared and interacted with the students. Some of these experts included : Dr. Randall Fecher, Energy and Development Research Centre, South Africa; Mr. Lambert Okrah, Institute for Cultural Studies, Ghana; Dr Axel Michaelowa, Hamburg Institute of International Economics, Germany; Mr.Nassim ul Haq, Bangladesh Centre for Advanced Studies, Bangladesh; Prof. Amaya, Japan
2. Students also discussed what they can do in individual capacities for climate change. A quiz which

Inter-regional Conference on Adaptation to Climate Change

October 18-20, 2002

Taj Mahal Hotel
Man Singh Road, New Delhi

Programme Schedule

Day 1, October 18, 2002; Venue : Deewan-e-Aam

- 0830 – 0930 Registration
- 0930 – 1100 Inaugural Session
Chairperson: Dr. Ashok Khosla, President, Development Alternatives
- 0930 – 0940 Welcome Address
Dr. Ashok Khosla, President, Development Alternatives
- 0940 – 0950 Address
Shri V S Ramamurthy, Secretary, Ministry of Science and Technology, Government of India
- 0950 – 1000 Address
Mr. John Smith Sreen, Deputy Director, United States Agency for International Development, India
- 1000 – 1020 Keynote Address
Ms. Joke Waller-Hunter, Executive Secretary, United Nations Framework Convention on Climate Change
- 1020 - 1040 Keynote Address
Dr. R. K. Pachauri, Chairman, Intergovernmental Panel on Climate Change
- 1040 – 1100 Inaugural Address
Shri A. K. Goswami, Secretary, Ministry of Water Resources, Government of India
- 1100 – 1130 Tea Break
- 1130 – 1310 **Technical Session 1 : Linkages between Sustainable Development and Adaptation to Climate Change**
Chairperson – Mr. Moussa Cisse, ENDA, Senegal
- 1130 – 1150 Adaptation to Climate Change in East Africa: Which Way Out
Mr. Evans Kituyi, ACTS, Kenya
- 1150 – 1210 Vulnerability to Climate Change - Prioritising Adaptation : Policy Options in Peru and the Andean Region
Dr. Valentine Bartra, Ricardo Palma University, Peru
- 1210 – 1230 Adaptation Strategies for Climate Change with Regard to Maize Production in Zimbabwe
Ms. M. M. Sangarwe, Ministry of Environment and Tourism, Zimbabwe
- 1230 – 1250 Climate Change Concerns of Small Island States and Required Adaptation Measures
Mr. Mama Konate, Director General, Ministry of Environment and Tourism, Mali
- 1250 – 1310 Discussion
- 1310 – 1400 Lunch
- 1400 – 1700 **Technical Session 2 : Sustainable Practices for Promoting Adaptation to Climate Change**
Chairperson – Dr. Saleemul Huq, International Institute of Environment and Development, London

- 1310 – 1400 Lunch
- 1400 – 1700 **Technical Session 3 : Contd.**
Chairperson – Dr. Agus P. Sari, Pelangi, Indonesia
- 1400 – 1420 Integrating Adaptation Concerns into Development Assistance Planning : USAID Perspectives
Ko Barret, United States Agency for International Development, Washington D.C.
- 1420 – 1440 Integrating Adaptation Concerns into Development Assistance Planning GTZ Perspectives
Mr. Holger Liptow, German Technical Cooperation (GTZ), Germany
- 1440 – 1500 Integrating Adaptation Concerns into Development Assistance Planning UNEP Perspectives
Mr. Ravi Sharma, UNEP
- 1500 – 1520 Discussion
- 1520 – 1540 Tea Break
- 1540 – 1730 **Working Groups**
- Community Practices for Increasing Resilience for Adaptation to Climate Change
 - Integrating Adaptation Measures with National Sustainable Development Programs
 - Role of UN Agencies and Annex I Countries in Assisting Developing Countries for Adaptation Measures
- 1900 Reception

Day 3, October 20, 2002: Venue : Long Champ, Roof Top

- 0930 – 1030 Presentation by the 3 Working Groups
- 1030 – 1100 Tea Break
- 1100 – 1300 **Technical Session 4 : Recommendations for CoP 8**
Chairperson – Dr. Ashok Khosla, Development Alternatives, India
- 1100 – 1130 Presentation by the Recommendations Drafting Committee
- 1130 – 1230 Discussion on Draft Recommendations
- 1230 – 1300 Finalisation of Recommendations
- 1300 - 1315 Valedictory Address by Ms. Joke Waller Hunter
- 1315 – 1400 Wrap Up & Lunch



Climate Change

Government of India, Ministry of Environment & Forests

NGO events during COP 8 (as of 22 October 2002)

Date	Time	Organization	Event	Venue	Contact
18 - 20 October 2002	0830 - 1730	Development Alternatives (DA), the Government of India, UNFCCC and the RING partners	Interregional conference on adaptation to climate change	Deewan-e- Aam Hall, Hotel Taj Mahal, Mansingh Road, New Delhi	Kalipada Chatterjee kc@sdalt.ernet.in , c_kalipada@hotmail.com
20 - 22 October 2002		Department of Science and Technology and Federation of Indian Chambers of Commerce and Industry (FICCI)	International conference on science and technology capacity building for climate change	Taj Palace Hotel, Diplomatic Enclave, Chanakyapuri, New Delhi and Federation House, Tansen Marg, New Delhi	Rita Roy Choudhury rita@ficci.com
22 and 27 October 2002		Climate Action Network (CAN)	Strategy meeting	India Habitat Centre, Lodhi Road, New Delhi	Kalipada Chatterjee kc@sdalt.ernet.in , c_kalipada@hotmail.com
22 - 23 October 2002	0900 - 1715	IT Power India	UNEP- REscreen trainer certification workshop	Taj Palace Hotel, Diplomatic Enclave, Chanakyapuri, New Delhi	Srikanth Subbarao srikanth@itpi.co.in
22 October 2002	0900 - 1730	Prototype Carbon Fund (PCF) and PCF Plus Research Programme, World Bank	Workshop on CDM and JI Methodologies	India International Centre, Lodhi Estate, Max Mueller Marg, New Delhi	Charles Cormier ccormier@worldbank.org
23 October 2002	0900 - 1600	TERI	Children's charter on climate change	India Habitat Centre, Lodhi Road, New Delhi	Ranjana Saikia ranjana@teri.res.in Ranjeeta Wadhwa ranjeeta@teri.res.in
23	1700 -	IT Power India (on behalf of	Climate change mitigation	Maple, India Habitat Centre,	

October 2002	1800	Planning Commission)	policy for India: The present and future!	Lodhi Road, New Delhi	
23 October - 01 November 2002		Centre for Science and Environment (CSE)	Cartoon exhibition	India Habitat Centre, Lodhi Road, New Delhi	Neelam neelam@cseindia.org
24 October 2002	0900 - 1800	Consumer Unity and Trust Society (CUTS)	Impact of unsustainable production and consumption patterns on climate change: the role of consumer groups	India Habitat Centre, Lodhi Road, New Delhi	Arjun Dutta, Soumi Ghosh cutscal@vsnl.com cspace@cuts.org
24 October 2002	1330 - 1500	International Emissions Trading Association (IETA)	Japan Emissions Management Simulation (JEMS II)	Hotel Samrat, Chanakyapuri, New Delhi	Robert Domau domau@ieta.org
24 - 26 October 2002		Winrock International India & Cogeneration Association of India	3rd international CHP & decentralized energy symposium and USAID international conference & exhibition on bagasse cogeneration	Grand Intercontinental, Barakhamba Road, Connaught Place, New Delhi	Sudhir Sharma sudhir@winrockindia.org
24 - 26 October 2002		Indian Institute of Management Ahmedabad (IIMA) and National Institute for Environmental Studies (NIES)	APEIS capacity building workshop on integrated environment assessment in the Asia-Pacific region	Grand Intercontinental, Barakhamba Road, Connaught Place, New Delhi	P R Shukla shukla@iimahd@ernet.in
25 October 2002	1500 - 1900	Indira Gandhi Institute of Development Research (IGIDR)	CDM and sustainable development	India Habitat Centre, Lodhi Road, New Delhi	Jyoti Parikh jp@igidr.ac.in Martha Lobo martha@igidr.ac.in
25 October 2002		Woods Hole Research Centre		India Habitat Centre, Lodhi Road, New Delhi	Linda Jacobsen ljacobsen@whrc.org Kilaparti Ramakrishna kramakrishna@whrc.org
		Institute of Solid Waste		India Habitat	

25 October 2002	1100 - 1330	Research and Ecological Balance (INSWAREB)	Potential for CDM projects in India	Centre, Lodhi Road, New Delhi	N Kalidas bhanuintl@satyam.net.in inswareb@md3.vsnl.net.in
25 October 2002	1000 onwards	Centre for Science and Environment (CSE)	Youth demonstration to demand equity in climate change negotiations		Neelam neelam@cseindia.org
25 October 2002	1300 - 1500	World Business Council for Sustainable Development (WBCSD) and World Resources Institute (WRI)	The GHG protocol initiative	Hotel Samrat, Chanakyapuri, New Delhi	Susanne Haefeli haefeli@wbcSD.org
25 October 2002	1800 - 2000	United Nations Development Programme (UNDP), International Emissions Trading Association (IETA), and World Business Council for Sustainable Development (WBCSD)	Engaging the private sector in CDM	Hotel Samrat, Chanakyapuri, New Delhi	Susanne Haefeli haefeli@wbcSD.org
25 October 2002	1200 - 1400	Japan Atomic Industrial Forum (JAIF)	Exploring the potential significance of nuclear energy as a solution for climate change and sustainable development	Maple, India Habitat Centre, Lodhi Road, New Delhi	Kaoru Kikuyama kikuyama@jaif.or.jp
25 October 2002	1500 - 1700	Indian Institute of Management Ahmedabad (IIMA) and National Institute for Environmental Studies (NIES)	Asia Pacific forum for collaborative modelling of climate policy assessment	Grand Intercontinental, Barakhamba Road, Connaught Place, New Delhi	P R Shukla shukla@iimahd@emet.in Tsuneyuki Morita t-morita@nies.go.jp
		The Dutch Ministry of Housing, Spatial			

25 October 2002	1300 - 1500	Planning and the Environment in co- operation with the Dutch Ministry of Economic Affairs	The Dutch approach on CDM - JI implementation & additionality	Hotel Taj Mahal, Mansingh Road, New Delhi	Lucy Naydenova, Vrom lucy.naydenova@minvrom.nl
26 October 2002	1800 - 2000	TERI & World Business Council for Sustainable Development (WBCSD)	<u>Clean Development Mechanism: from policy to reality</u>	India Habitat Centre, Lodhi Road, New Delhi	Dhenuka Srinivasan dhenuka@teri.res.in Arvind Kumar asharma@teri.res.in
26 October 2002	evening	Climate Action Network (CAN)	NGO party	India Habitat Centre, Lodhi Road, New Delhi	Karla Shoeters karla@climnet.org
26 - 27 October 2002	0900 - 1900	CorpWatch	Climate Justice - public forums (panels, workshops and cultural events)	Constitution Club, Rafi Marg, New Delhi	
27 - 28 October 2002	1600 - 2100	International Council for Local Environmental Initiatives (ICLEI)	Cities for climate protection municipal leaders meeting	Park Hotel, 15 Parliament Street, New Delhi	Emani B V Kumar ebv.kumar@iclei.org
27 October 2002	0830 - 1330	Ministry of Agriculture in collaboration with United Nations Development Programme (UNDP)	Adaptation to climate change - sustainable agriculture	Indian Agricultural Research Institute (IARI), New Delhi	Rita Sharma rita@krishi.delhi.nic.in
28 October 2002	0900 - 1700	Development Alternatives (DA)	We care and we act: An exhibition by CLEAN India Young Warriors	India Habitat Centre, Lodhi Road, New Delhi	Gunjan Doogar gunjan@sdalt.ernet.in
28 October 2002	0900 - 1700	Development Alternatives (DA)	Sustainable livelihood practices: A self-help group model	India Habitat Centre, Lodhi Road, New Delhi	Charu Jain charu@sdalt.ernet.in
		International Institute for Environment and Development (IIED) with the RING			

28 October 2002	0900 - 1730	(Regional and International Networking Group on Sustainable Development), BCAS, ENDA and Development Alternatives (DA)	Adaptation Day	India Habitat Centre, Lodhi Road, New Delhi	Hannah Reid hannah.reid@iied.org
28 October 2002	1700 - 1900	Indian Network on Ethics and Climate Change (INECC)	Call of the communities	India Habitat Centre, Lodhi Road, New Delhi	Nafisa D'Souza inecc@sify.com
28 October 2002	1315 - 1415	TERI	Presenting Global Network on Energy for Sustainable Development (GNESD)	Exhibition Hall, TERI, New Delhi	Yuvaraj Dinesh Babu ydbabu@teri.res.in
28 October 2002	1300 - 1500	ETH, International Emissions Trading Association (IETA), World Bank, and World Business Council for Sustainable Development (WBCSD)	Sustainable development and host country approval of CDM	Hotel Samrat, Chanakyapuri, New Delhi	Susanne Haefeli haefeli@wbcsd.org
28 October 2002	1800 - 2000	International Emissions Trading Association (IETA) and Ecocarbon	Prospects for the GHG market	Hotel Samrat, Chanakyapuri, New Delhi	Robert Dornau dornau@ieta.org
29 October 2002	1100 - 1300	Indian Institute of Management, Ahmedabad (IIMA), RIVM, Risoe, EDRC	Development and Climate: exploring an integrated approach	India Habitat Centre, Lodhi Road, New Delhi	Amit Garg amit@winrockindia.org Marcel Kok Marcel.Kok@rivm.nl
29 October 2002	1800 - 2000	Ministry of Non-conventional Energy Sources (MNES)	Wind power in India - approaches and prospects	India Habitat Centre, Lodhi Road, New Delhi	Ajit Kumar Gupta akgupta98@hotmail.com akgupta@mnes.delhi.nic.in
29		Climate Change	Network	India International	Jodi Browne

October 2002		Knowledge Network (CCKN)	partners' meeting	Centre, Lodhi Road, New Delhi	jbrowne@iisd.ca
29 October 2002	0930 - 1330	Trade Partners UK, Confederation of Indian Industry (CII) and TERI	Climate change: implications and opportunities for business	Kamal Mahal, Maurya Sheraton, Diplomatic Enclave, Chanakyapuri, New Delhi	Arvinder Kaur arvinder.kaur@cionline.org
29 October 2002	1500 - 1800	Natsource LLC, the Confederation of Indian Industry (CII) and Canada's CDM/JI Office of the Department of Foreign Affairs and International Trade	CDM opportunities in India	Hotel Samrat, Chanakyapuri, New Delhi	Neil Cohn ncohn@natsource.com Sandeep Shrivastava sandeep.shrivastava@cionline.org
29 October 2002	1100 - 1300	ENDA and IRAD	Gender and climate change		Fatma Denton fatma@africanformation.net
29 October 2002	1600 - 1800	Asian Development Bank	Promotion of renewable energy, energy efficiency, and greenhouse gas abatement in Asia and the Pacific	Silver Oak I, India Habitat Centre, Lodhi Road, New Delhi	Sujata Gupta sgupta@adb.org
30 October 2002	1500 - 1700	The Associated Chambers of Commerce and Industry of India (ASSOCHAM)	Climate change and industry: some concerns and positive notes	India Habitat Centre, Lodhi Road, New Delhi	Bhaskar Sinha sinhasun@hotmail.com
30 October 2002	1800 - 2000	World Bank and World Business Council for Sustainable Development (WBCSD)	National Strategy Studies: outcome of the capacity building workshop in September	Hotel Samrat, Chanakyapuri, New Delhi	Susanne Haefeli haefeli@wbcsd.org
30 October 2002	1300 - 1500	International Energy Agency (IEA)	Beyond the first commitment period of the Kyoto Protocol	Maple, India Habitat Centre, Lodhi Road, New Delhi	Jenny Gell jenny.GELL@iea.org
30		International Emissions	Drafting	Hotel Samrat,	

October 2002	1300 - 1500	Trading Association (IETA)	contracts for credit creation projects	Chanakyapuri, New Delhi	Robert Dornau dornau@ieta.org
01 November 2002	1300 - 1500	International Emissions Trading Association (IETA)	Preparation on emissions trading - experience with GHG monitoring and future outlook regarding GHG monitoring systems	Hotel Samrat, Chanakyapuri, New Delhi	Robert Dornau dornau@ieta.org

For COP-8 special events at Vigyan Bhavan see the [UNFCCC](http://unfccc.org) website.

Market Based Mechanisms for GHG Emissions Mitigation: Issues and Concerns

October 25, 2002; 6 pm to 8 pm
Hall H, Vigyan Bhavan, New Delhi

Development Alternatives, organised a side event to discuss the issues concerning market based mechanisms for GHG emissions reduction. The speakers in the event were practitioners dealing with the market-based mechanism and shared their experiences and concerns.

The panel of speakers consisted of Kalipada Chatterjee and Vivek Kumar from Development Alternatives; Axel Michaelowa from Hamburg Institute of International Economics, Jayant Sathaye from Lawrence Berkley National Laboratory, Randall Spalding Fecher from Energy and Development Research Centre and Joyashree Roy from Jadavpur University.

The event deliberated on a range of issues concerning market based mechanisms such as reducing transaction costs in small scale GHG mitigation projects, multi-project baselines for standardizing project greenhouse gas estimation, small-scale project attractiveness for the private sector, CDM and sustainable development etc.

There was a lot of thrust for simplifying modalities and procedures for small-scale projects. Small-scale projects being spatially distributed over a large area provide employment opportunities to a greater number of people, improve their economic standards and help them address sustainable development.

Major recommendations coming from the presentations and discussions are summarised below:

- Simplified modalities and procedures for small-scale GHG mitigation projects may be adopted at the earliest at CoP8 and made available to countries for integrating with their national climate change policies
- Developing countries demand a minimum price per ton of carbon reduced. This should be higher for small projects. This is required because transaction cost in small scale and large scale projects will be more or less of the same order, however, in terms of percentage of the total cost of the project it will be very high for small scale projects. Higher minimum price for small-scale projects will, therefore, provide an incentive to small-scale project developers
- The distribution of GHG mitigation projects should be based on host countries initiatives and enabling environment (a small country like Costa Rica could get a number of AIJ projects because they had set up an AIJ office well in time and the signal was very clear)
- Achieving sustainable development goals of a country being crucial, the host countries must set up a mechanism to ensure, monitor and verify sustainable development before CERs are issued by the CDM Executive Board
- NGOs in developing countries with necessary background and capacities must be allowed to function as designated operational entities. These NGOs should be exempted from any fee in this respect.
- Institutional arrangement – inter-national / national investment in small scale CDM projects enabling financial closure must be organised

**Plans, Programmes and Achievement of South Asian Countries regarding
Adaptation to Adverse Impacts of Climate Change**

October 28, 2002, 6 pm – 8 pm
Hall H, Vigyan Bhavan, New Delhi

*Chair Person: Mr. George C Varughese,
Development Alternatives, India*

Co-Chair: Dr. Atiq Rahman, BCAS, Bangladesh

The event was to observe the day as Adaptation Day. Development Alternatives had organised a series of events including a Conference in India Habitat Centre, exhibition by Delhi School Children on Environmental Awareness and an exhibition on sustainable livelihood practices, by self help group members from Bundekhand region. The Adaptation Day concluded with the side event "Plans, Programmes and Achievement of South Asian Countries regarding Adaptation to Adverse Impacts of Climate Change".

The Chair-person Mr. George C. Varughese, Vice-President, Development Alternatives mentioned that Development Alternatives is trying to mainstream the climate change among communities. Mainstreaming climate change with community activities and educating communities becomes important in view of the fact that the communities, particularly the poor communities will face the adverse impacts of climate change severely.

The speakers from India, Sri Lanka, Nepal, Bhutan and Bangladesh presented the climate change concerns of their countries and the efforts going on in their countries to address climate change. It was obvious from the presentations that there are some common concerns of the South Asian countries, such as:

- Strong rural base
- Heavy dependence on agriculture
- Threats to bio-diversity
- Vulnerability of coastal ecosystems
- Rampant poverty

In addition to these, countries such as Nepal and Bhutan have started facing glacial retreat and glacial lake outbursts (Gloffs) and countries such as India and Bangladesh face threats to their mangrove ecosystems. Bhutan has a negative contribution to climate change as total landmass under forest in Nepal in about 72 per cent. Bhutan thus does not have much potential for GHG mitigation.

Countries shared their programmes that they have taken up with various multi-lateral and bi-lateral agencies towards awareness, generation and capacity building for adaptation to climate change. Countries are now also considering measures which have components of mitigation as well as adaptation.

It was encouraging to note that countries have started programmes directed towards adaptation to climate change such as:

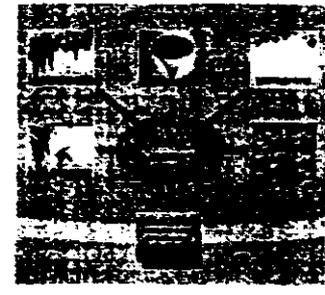
- Early warnings for disaster mitigation
- Rain water harvesting
- Community forestry
- Sustainable agriculture
- Cleaner energy initiatives
- Institution building

The countries agreed upon that though overall the South Asian region requires a lot of capacity building but a few countries in the region are well aware of the issues and are into the mainstream. The countries should, therefore, jointly address the climate change problem in the region.

The major recommendations from the conference were:

- Integrate adaptation with sustainable development
- Build capacity of communities regarding adaptation to climate change
- Share information and knowledge within the region
- Set up a Regional Resource Centre for the South Asian Region

Development Alternatives



Linkages between Climate Change and Natural and Human Systems

Development Alternatives

Developing Countries: Most Vulnerable

- Increased incidences of droughts and floods
- A large share of the economy lies in climate sensitive zones
- Lower capacity to adapt because of lack of financial, institutional and technological capacity
- Climate change is likely to impact disproportionately upon the poorest countries and the poorest people, exacerbating inequities and the vulnerability further increases due to high growth rate of population, resources constraints, and poverty

Development Alternatives

- Global average sea level has risen
- + between 0.1 and 0.2 m during the 20th century
- Warm episodes of the El Niño-Southern Oscillation (ENSO) have been more frequent, persistent and intense since mid 1970s
- In parts of Asia and Africa, the frequency and intensity of droughts have been observed to increase in recent decades
- Emissions of Greenhouse Gases and aerosols due to human activities continue to alter the atmospheric composition that are expected to affect the climate

Development Alternatives

Projections

- Global average temperature and sea level are projected to rise under IPCC emission scenarios
- + globally averaged surface temperature is projected to increase by 1.4 to 5.8°C
- + In the SAR temperature increases projected was in the range of 1.0 to 3.5°C
- Mean sea level is projected to rise by 0.09 to 0.88m by 2100, but with significant regional variations
- Increased incidence of heat stress mortality, vector-borne diseases and water-borne diseases especially in the tropics and sub-tropics

Development Alternatives

Adaptation to Climate Change

Side Event in COP8
October 28, 2002
Vigyan Bhavan, New Delhi
Climate Change Centre
Development Alternatives

Development Alternatives

IPCC Third Assessment Report: Salient Observations

- Climate change is not just an environmental issue, but is part of the larger challenge of sustainable development
- An increasing body of observations gives a collective picture of a warming world and other changes in the climate system
- + the global average surface temperature has increased over the 20th century by about 0.6°C

Contd.

Climate Change Impacts: India

- ❑ Water resources – suffers from lack of safe drinking water
- ❑ Coastal Zones – more than 7000 km long coastline makes the country vulnerable to sea level rise and extreme weather events such as cyclones
- ❑ Forest resources – otherwise also under threat of deforestation and overgrazing, climate change will put additional stress; the present forest cover is above 20% and the dense forest accounts only 12%
- ❑ Human Health – number of people affected by malaria and dengue will considerably increase in tropical Asia, particularly in India

Development Alternatives

Contd..

- ❑ Agriculture and food security
 - the single largest component of India's economy ~ 30% of GDP
 - provides employment to 68% of the total workforce
 - accounts for 21% of total exports
 - 65% of the net sown area is rain-fed
- ❑ Studies have shown decline in rice and wheat productivity with higher temperature
 - a 2°C increase in mean air temperature could decrease rice yield by about 0.75 t/ha to 0.06 t/ha
 - 0.5°C increase in winter temperature would reduce wheat yield by about 0.45 t/ha or 10% reduction in wheat production

Development Alternatives

Contd..

Ways to Address Climate Change

- The two ways to address climate change are mitigation and adaptation
- Even with the implementation of Kyoto Protocol, climate change is bound to happen
- Therefore, adaptation is inevitable, particularly in developing countries

Development Alternatives

Adaptation to Climate Change

- ❑ In view of the importance of adaptation, Development Alternatives organised an Inter-regional Conference on Adaptation to Climate Change during 18-20 October, 2002
- ❑ About 120 participants from different regions of the world deliberated on issues related to adaptation approaches, strategies and programmes

Three Working groups in the Conference discussed in detail about

- Research, awareness and capacity building needs
- Integrating adaptation measures with sustainable development strategies and programmes, and
- Resources and responsibilities

Development Alternatives

Contd..

Based on the findings of the three working groups the conference recommended the following:

- Integrate adaptation policies and measures with sustainable development.
- Sensitise national level policy makers and other stakeholders.
- Mainstream adaptation into national, local, and sectoral plans.
- Strengthen adaptation in addition to strengthening mitigation efforts
- Assess and utilise existing knowledge and experience on, sustainable development and poverty reduction for adaptation. This includes local and indigenous knowledge.

Development Alternatives

- Raise public awareness at all levels.
- Adaptation at the local level must be supported by national and international policies and measures.
- Institutionalize responsibility at all levels and explore innovative ways to gain resources.
- Incorporate local adaptation needs in financing systems.

Let us work it out

Development Alternatives

Perspectives of Sri Lanka regarding Adaptation to Adverse Impacts of Climate Change

*Dr. B.M.S. Batagoda
Ministry of Environment & Natural
Resources
Sri Lanka*

**Project on Assessment of the impacts of
and adaptations to climate change in the
plantation sector, with particular reference
to coconut and tea, in Sri Lanka.**

Project Summary

- Funded by International START Secretariat
- Project Value - US\$ 320,000
- Project duration – 3 years
- Project Coordinator – Dr. P.A.J Ratnasiri
- Countries covered
 - Direct - Sri Lanka, partly India
 - Indirect - Other coconut and tea growing countries

Project Objectives

- Baseline data collection on the climate,
- Data collection on crop productions and socio-economics at farm and national level
- Determination of future scenarios for climate conditions and crop productions
- Assessment of the impacts and adaptations to these scenarios using crop-weather models and integrated assessment models
- Making recommendations on a set of guidelines for appropriate policy measures for mitigating the impacts and for adaptation which could be applied nationally as well as regionally.

Methodology

Following adaptation options

- Water Management (Irrigation, Mulching)
- Shade management
- Crop management (Anti-transpirants etc.)
- The optimum options will be tested in the field for their adaptive capacity.
- The economic consequences of these options will be evaluated.
- The tea and coconut farmers will be enlightened on the impact and adaptation measures through outreach programmes

Climate Change Enabling Activity Project

Project Summary

- Funded by – GEF/UNDP
- Project Value – US\$ 100,000
- Project duration – 1 year
- Implementing body – Ministry of Environment

Project Objective

- In preparation for the second national communication
 - Strengthen institutional capacity
 - Build human capacity
 - Derive country specific data

Scope for this presentation

- Studies conducted on vulnerability assessment, adaptation and mitigation in identified sectors.
- This presentation focuses on 5 adaptation studies

Assessing the maximum storage period of harvested rain water for the domestic consumption during dry season

The issues addressed;

- People use the water collected from rooftops for consumption during dry season
- They are reluctant to drink rainwater collected from rooftops due to the concerns regarding the quality.
- They are not aware how long they could safely consume harvested rain water.

Impacts of climate change on land productivity of rubber, possible adaptation measures and the role of rubber plantations as a mitigatory option

Issues addressed;

- Assess the impact of climate change on land productivity of rubber
- Adaptation measures on soil and moisture conservation
- Role of rubber plantation as a mitigation measure

Investigation of climate change impacts on land degradation, crop production and watershed management

Issues addressed;

- Assess the adverse effects of land degradation of watershed areas and remedial measures
- Assess crop damage due to climate change for paddy cultivation and adaptation measures

Identification and evaluation of the adaptive measures to offset the anticipated drought occurrences with emphasis on rice production in the dry zone

Issues addressed;

- Project the anticipated drought in selected districts in the dry zone of Sri Lanka
- Estimate long run and the short-run effects of drought on rice production in major, minor and rainfed farming systems.
- Assess the possible adaptive measures, based on technical and indigenous knowledge to combat the anticipated damages
- Analyse social welfare effects of the suggested strategies

Agro-climatic potential and risk assessment for crop intensification in home gardens of Southern Sri Lanka:

Issues addressed;

- Identify optimum cropping calendar and onset time for annual crops grown in the area for minimizing risk on crop production due to climate change
- Assess the water balance to determine the optimum tank capacity to store roof runoff water for irrigation in home gardens in the different agro-ecological regions of the area.
- Develop climate maps in relation to rainfall onset, duration, risk and magnitude for the area, using GIS facilities

Other Studies

- Vulnerability & Adaptation Studies in a dry zone district and in a mountainous district on
 - Rice
 - Other agricultural crops
 - Livestock
 - Industry
 - Tourism
 - Wildlife parks
 - Coral reefs
 - Hydro power

- Assessment of vulnerability and adaptation to vector borne diseases with special emphasis on Malaria

Thank You

Climate Change & Bhutan

National priorities & strategies



Thinley Namgyel
National Environment Commission
Royal Government of Bhutan

Background

- Bhutan signed UNFCCC at Rio 1992
- UNFCCC ratified by 73rd National Assembly in 1995
- Acceded to Kyoto Protocol on 26 August 2002

2 October 26, 2002 Climate Change and Bhutan

The Convention and Bhutan

- Vulnerable to climate change
- Article 4.8 of Convention
 - Developing country
 - Fragile mountainous ecosystem
 - Land locked
- Article 4.9
 - Bhutan is classified as LDC

3 October 26, 2002 Climate Change and Bhutan

The Convention and Bhutan

- Article 4 and 12
 - Bhutan's Initial National Communication and 1st National GHG Inventory
 - Submitted to UNFCCC at COP6

4 October 26, 2002 Climate Change and Bhutan

1st National Greenhouse Gas Inventory

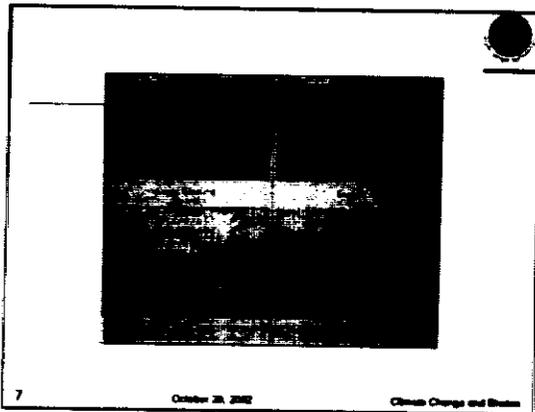
GHG sources & Sink Categories	Emissions (Gg/year)		
	CO ₂	CH ₄	N ₂ O
Energy	94.77	0.05	0
Industrial processes	133.69	0	0
Agriculture	0	19.17	2.13
LULUCF	-3,549.52	0	0
Waste	NE	NE	NE
Total	-3321.05	19.22	2.13

5 October 26, 2002 Climate Change and Bhutan

Impacts of Climate Change on Bhutan

- Agricultural Activities
 - 80% of population
- Water Resources
 - 30,000 MW potential power generation
- Natural Disasters
 - Glacial Lake Outbursts Floods
 - landslides
- Human Health
 - Increase in tropical diseases and heat stress
- Forests and Biodiversity
 - 70% cover and high diversity

6 October 26, 2002 Climate Change and Bhutan



- ## Constraints
- Lack of adequate data & information
 - Low capacity to respond to climate change
 - Financial, Technical, Institutional capacity
- 8 October 26, 2002 Climate Change and Bhutan

- ## Priority Needs
- Capacity Building
 - Meteorological systems & early warning
 - Vulnerability assessments & adaptation options
 - Strengthening relevant institutions
 - Adaptation
 - Strategy
 - financing
- 9 October 26, 2002 Climate Change and Bhutan

- ## Ongoing Activities
- Top up funding: GEF Enabling Activity
 - Various capacity building activities
 - Glacial Lake Risk Assessments
 - 1994 GLOF
 - 2000 glaciers,
 - Of 500 lakes: 24 potentially dangerous
- 10 October 26, 2002 Climate Change and Bhutan

- ## Next steps
- National Capacity Self Assessment
 - PDF-A approved: Proposal under preparation
 - National Adaptation Programmes of Action (NAPA)
 - Proposal under preparation
- 11 October 26, 2002 Climate Change and Bhutan

- ## Next steps
- Netherlands Climate Change Studies Assistance Program (NCCSAP)
 - Climate Scenarios
 - Impact on Rice production
 - Socio Economic Impacts
 - Mitigation
 - "Modes" potential for Bhutan
- 12 October 26, 2002 Climate Change and Bhutan

UN wants GEF to ensure fund flow to Third World

Our Delhi Bureau

7 NOVEMBER



COP 8

IN A follow-up to the COP8 deliberations that concluded here last week, the UN Conference has asked the Global Environment Facility (GEF) to direct flow of funds towards adaptation and capacity building in developing countries and to report to the next meeting of the Conference of Parties (COP9) on the progress. It has also called for a comprehensive review of the framework for capacity building for developing countries.

According to an official press release, the 10-day event in which 170 countries participated, decided to ask the GEF to ensure speedy release and disbursement of funds and timely assistance for the preparation of national adaptation programmes, particularly by least developed countries. The GEF is to support organisation of four regional workshops next year — two workshops in Africa, one in Asia and another in a small island developing state to advise LDCs in the preparation of national adaptation programmes. This apart, both the GEF and the countries that are parties to the UN Convention on Climate Change have been asked to submit to the Convention Secretariat by April 15, 2003, views and strategies for implementing national adaptation programmes.

It may be recalled that the Delhi Declaration on Climate Change was adopted at the end of COP 8 deliberations and particularly stressed on adaptation. While mitigation refers to reduction in emission of greenhouse gases that are responsible for climate change, adaptation relates to enhancing capacities to minimise the adverse effects of climate change.

COP9, which is to be convened in Italy in December next year, would review and if necessary revise the guidelines for the preparation of national adaptation programmes, based on the experience of LDCs. GEF and other relevant international organisations have been asked to provide information on progress in the implementation of capacity building projects and programmes by April 15, 2003.

Climate change impact more in South

By Our Staff Reporter

NEW DELHI, OCT. 19. In the countdown to the eighth Conference of Parties (CoP) to be held here from October 23 to November 1, the Climate Action Network (CAN), a global network of more than 300 members in more than 80 countries, has reaffirmed its decision to secure equal regional participation of its members in the CoPs.

In an effort to formulate consensus, Development Alternatives (DA) had earlier this week organised the inter-regional conference on 'Adaptation to Climatic Change.'

The meet, chaired by the president DA, Ashok Khosla, stressed the fact that climate change was a reality. Addressing climate change issues must not be simply through reducing greenhouse emissions but also looking at sustainable development strategies. While climate change issue is a major concern for the North, the consequences and impacts are being felt more by the South," said Dr. Khosla.

The Secretary, Ministry of Science and Technology, V.S. Ramamurthy, also present at the conference, spoke about the interplay between the elements of land, water and air and the resulting natural phenomenon and events.

He suggested a 'tripod' solution for combating the impact of climate change which included minimising interference with natural phenomena, promoting technological developments for sustainable and equitable development and policy advocacy. He also stressed on effective waste utilisation and need for developing energy-efficient devices as measures for adapting to climate change.

The other topics discussed in the meet included, intervention on water resources as an entry point for adaptation, need to take together water and energy issues as well as to pay attention to technologies for a win-win situation. Also, the impact being felt through trends including decrease in agricultural productivity, increased incidence of diseases and changes in productivity of coastal ecosystem came up for discussion.

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SECTION III

Section III:

Environmental Resources Trust

GHG Registry Policy Exchange
(March 1 – 11, 2003)

ENVIRONMENTAL RESOURCES TRUST
GHG EMISSION REGISTRY APPLICATIONS POLICY EXCHANGE



Harnessing the Power of Markets ...
to Improve the Environment

A Platform for Measuring Industrial Competitiveness in India

EXECUTIVE SUMMARY

Background

The Louis Berger Group Inc. (LBG) Global Environment Team (GET) is currently implementing the "Greenhouse Gas Pollution Prevention Project – Climate Change Supplement (GEP-CCS)", a program of the USAID/ India Mission. The primary goal of the GEP-CCS program is to improve the understanding of climate change issues among key stakeholders in India who have significant potential to help reduce India's GHG emission intensity. GEP-CCS works very closely with industry, government, NGO's and financial institutions by providing technical assistance, facilitating outreach/ awareness activities, and by catalyzing the development and use of mechanisms that lead to reduced GHG emissions.

In the past two years, during numerous outreach activities, Indian industry and the various GEP-CCS and LBG partner organizations have expressed a pressing need for the development of a GHG registry in India as one of the crucial building blocks for establishing the credibility of emissions reductions effected in India. The development of a registry would provide companies a mechanism to track and trade credible emission reductions. Industries that reduce their GHG emissions could demonstrate credible 'registered' carbon credits that could then be sold, traded or otherwise used as needed to meet corporate objectives. The incentive of having the ability to register GHG offsets nationally in a registry system that is recognized internationally would further encourage Indian industries to quantify and reduce their emissions. Moreover, the registry system could also provide statistical information necessary to strengthen standards and practices for measuring and recording emissions and to aid policy initiatives.

In response to the intense level of interest in registries as a critical next step in GHG reductions, the said policy exchange was proposed and implemented. The exchange was designed to provide Indian stakeholders with an understanding of emissions registries, exposure to the types of registries currently in operation or in development in the US, and the concepts and processes in creating GHG registry systems.

Profile of Policy Exchange Partner

The partner identified for this exchange was the Environmental Resources Trust (ERT) – a U.S. leader in registry development for GHG emissions trading. LBG/GEP-CCS developed a collaborative partnership with ERT to assist in laying the groundwork for the development of future GHG registry systems in India.

With the approval of USAID India, LBG/GEP-CCS invited Mr. Wiley Barbour, Director of ERT's Environmental Registry Services, to India under the policy exchange mechanism. Mr. Barbour is one of a select few US experts who have actually set up emissions registries, including the ERT registry for GHG's, the emissions registry for EPA, and has worked on the development of several of the new state

registries operating in the U.S, including the California Registry. Unlike several other GHG registries that have been discussed or are in planning/ set-up stages, the ERT registry has been up and running and registering trades for over two years.

Objectives

The policy exchange was designed to maximize active engagement with representatives from the Government of India, financial institutions, industry and industry associations – the critical stakeholders in the development of a registry. The specific objectives of the visit were as follows:

- To *share the particulars* of international and national government environmental registry systems, and details of the measurement, verification, recording standards and agreements for GHG emissions registries.
- To *present the benefits* of such a registry system for industry and India and to clarify the often asked question about what motivation/ incentive has led to the creation of registries that function in areas even without regulatory emissions caps.
- To look at the *accounting and data collection basics* necessary for industry to actively engage in registering emissions and in establishing a GHG registry system.
- To provide an understanding of the underlying *obstacles and barriers* of forming a GHG emissions market in India.

Representative Policy Exchange Participants

The policy exchange was meant to engage representatives from the key stakeholders groups that would be involved in bringing about a reduction in India’s GHG emission intensity. The interactions and briefing materials were customized for each stakeholder group so as to target the concerns and problems faced by that group. The following table summarizes the different perspectives adopted vis-à-vis GHG registries for each of the stakeholder groups:

Government	Use of credible emissions reductions data in shaping future emissions and energy policies of the government, and in creating inventories
Industry Leaders	To facilitate participation in the international emissions market, and thereby enable maximization of financial gains from the ability to trade in GHG offsets.
Industrial Associations	Potential for hosting GHG registry system and providing related professional services to complement the registry.
Financial Institutions	Potential financial benefits to client companies (especially those in the energy- energy intensive sectors). Increased comfort on treatment of emissions reductions as a bankable asset due to verification and monitoring done by registry.

Observations

Mr. Barbour visited India during the period March 3-12, 2003. During his stay he had opportunity to meet / interact with numerous representatives from the above stakeholder groups, both in New Delhi and Mumbai. From the government, he met with senior representatives from the Ministry of Environment and Forests (MoEF), Central Pollution Control Board (CPCB) and Bureau of Energy Efficiency (BEE). Amongst the industry associations, Mr. Barbour had detailed meetings with key personnel from the Confederation of Indian Industry (CII) and the Federation of Chambers of Commerce and Industry (FICCI) – the two largest industrial associations in India. In the financial sector, meetings were held with ICICI Bank, Industrial Leasing & Financial Services (IL&FS) and Infrastructure Development Finance Company (IDFC) – the first being amongst the largest FI's in the country, and the latter two being actively engaged in project financing to the infrastructure sectors. IDFC is also the responsible for managing the Indian portfolio of projects under the Prototype Carbon Fund. Interactions with industry leaders took place in the course of a roundtable on CDM organized by CII and Resources for the Future International (RFI).

On the whole, the views expressed at the meetings and briefings, echoed the expressions of interest voiced earlier in the use of GHG emissions registry as a tool for establishing the credibility of GHG emissions reductions achieved in Indian projects. The policy exchange however, also offered an opportunity to get a detailed insight into the specific concerns and areas of interest, which the stakeholders had with respect to GHG registries.

Both the *trade associations*, namely CII and FICCI, appeared very receptive to the idea of a GHG registry. They saw it more as,

- ① a step towards systematization of emissions monitoring through the independently verifiable protocols incorporated in the registry process, and
- ② a means to generate credible data on emissions which could be used for industry to track its own performance, as also to recommend policy interventions for the government to encourage industry towards cleaner technologies/ processes.

In other words, their perspective towards GHG registries was guided by an agenda broader than to just facilitate emissions trading – this being possibly due to the absence of mandatory caps in the current scenario. The fact that the registry was perceived to be an entirely voluntary initiative, where industry could chart its own course – especially with respect to disclosure of information reported - further added to the attractiveness of the tool.

There was a slight difference however, in the positions taken by CII and FICCI. While CII saw itself as a host for the registry, FICCI expressed interest in providing verification services to registry participants. CII saw the registry as a starting point for a broader reporting platform that would incorporate data collection and benchmarking on a wide range of efficiency and environmental indicators. They saw this as a means to increase the relevance and reach of the concept. FICCI on the other hand had already initiated work on protocol development and appeared to be ideally positioned to contribute in the development of registry systems. Both expressed their keenness to move ahead using a partnership approach towards implementation of the registry.

The CII-RFI Roundtable provided a useful opportunity to obtain the views of *industry leaders* – especially from energy intensive sectors like steel, power, electronic goods - on the GHG registry. In general there was a greater appreciation for the competitive global market for GHG reductions and a better realization of the role a registry could play in increasing their competitiveness in such a market. Their interest was

also partly driven by their growing dissatisfaction and disappointment with the CDM market, which was being seen as being too cumbersome, low on economic attractiveness, and laden with ambiguities. Industry interest in the GHG registry was also motivated by a realization that the development of a registry could provide much needed guidance on inventory design, project baseline development and ways to prepare for more intense verification activities. Moreover, they shared the appreciation that such a registry could assist them in benchmarking and exchange of best practices with industry peers. Needless to say, from their point of view, the preferred hosts for the registry would be the trade associations.

Among the *financial institutions* there was an appreciation for the role a registry could play in their activities, especially in giving access to new markets for projects they support. IDFC in particular expressed interest in exploring the potential for bundling of small projects – such as residential solar projects - under a registry system. They endorsed the idea of a private registry paving the way for future public-private partnerships, and were even willing to consider hosting the registry. There was therefore, clear potential for exploring synergies between the financial institutions and the industry associations, since the involvement of the former as a user of the registry information could provide the necessary credibility to the development process of the registry – which might be otherwise seen to be vulnerable to conflicts of interest.

The interactions with officials from the *MoEF and other government bodies* initially provided a mixed perspective on registries. However, subsequent to elaboration of the concept and clarification of its role vis-à-vis CDM, the reaction turned favorable. There appeared to be a need for reassurance on some areas of concern, chiefly with respect to the implications of a possible government involvement in the initiative. The idea of it being a private sector initiative at the pilot stage, therefore found favor with the officials. This interface with the government provided useful inputs in guiding future assistance for increasing awareness among key government decision makers on the role of national registries in the context of the GHG emissions reduction market – under CDM or otherwise.

Outcome

The said policy exchange had the following outcomes:

- An overall confirmation of the need for a GHG registry in the Indian context, and the role it could play in fostering a move towards reduced GHG emissions intensity in Indian industry.
- Increased awareness in all sectors, particularly the trade associations, financial industry and the national government, of the function and importance of GHG registries.
- Identification of potential hosts for a GHG registry and partner organizations for implementing other aspects of such a registry.
- Identification of potential links between key stakeholders (for example, IDFC and CII) offering synergies in the development of the registry. These could be tapped and developed at a later stage.

ANNEXES

Annex A:

Wiley Barbour - Trip Report

**Greenhouse Gas Emission Registry Applications: A
Platform for Measuring Industrial Competitiveness in
India**



Harnessing the Power of *Markets* . .
to Improve the *Environment*.

Trip Report for Policy Exchange Visit

Sponsored by the Greenhouse Gas Pollution Prevention Project, USAID/India

To: Suzanne Young, Louis Berger Group, Inc.
From: Wiley Barbour, Environmental Resources Trust, Inc.
Date: March 11, 2003
Subject: Greenhouse Gas Emission Registry Applications:
A Platform for Measuring Industrial Competitiveness in India

Executive Summary

During the *Greenhouse Gas Registry Policy Exchange Visit*, the Louis Berger Group (LBG) and Environmental Resources Trust (ERT) actively engaged numerous representatives from key stakeholder groups to share experiences, gather views, and improve understanding of emission registry systems. The policy exchange meetings were held with experts and officials from various Government of India Ministries, key industries, financial institutions, and trade associations. *Individual briefing materials* were developed for each stakeholder group to target the concerns and problems for their group and to highlight issues to address in detail.

The meetings and briefings confirmed earlier expressions of serious interest in use of emission registries as a tool to establish credibility of greenhouse gas (GHG) emission reduction projects in India. As expected, each group has unique questions and concerns and the following paragraphs summarize key points raised in these discussions.

The Government of India (GOI) representatives varied in their response to our message; some were initially hesitant but later warmed to the idea, while others were cautiously optimistic. The mixed response is likely due to a variety of reasons including lack of understanding, fear of additional work commitments, and uncertainty over still evolving government policy in this area. Several of the GOI representatives were uninterested in promoting non-CDM project reductions. In general, it appeared their collective level of comfort gradually increased particularly after experiencing the positive reactions at the CII-RFI Roundtable on CDM where their understanding of this process increased. It appears that GOI will not oppose or hinder a pilot GHG registry system developed in the private sector. A key to managing their comfort level is to reinforce their appreciation that the tools developed could be later adopted by GOI; that no official sanction is needed at this time; that all options remain open for future GOI registry development; that this system can enhance environmental credibility and project integrity; and that this system is strongly supported by leading industry and trade associations in India.

The Trade Associations (CII and FICCI) were much more enthusiastic about the concept of a pilot registry system for Indian industry. CII expressed an interest in hosting the

registry while FICCI expressed interest in providing verification services to registry participants. The discussion with CII followed several earlier exchanges on this issue and so were detailed, specific and resulted in concrete follow on items. CII envisions a broader project than just a registry, with benchmarking and data collection on a wide range of efficiency and environmental indicators. This proposal has merit and could be of use in baseline setting, generating additional support from industry, and enhancing the usefulness of this proposed project. FICCI has already begun the process of protocol development for various industry sectors and is in an excellent position to lead in the development of registry reporting and verification protocols. Both groups are important partners in any future development of registry systems and would provide excellent avenues to enlist industry champions in the pilot phase.

Key Indian Industries were well represented at the CII-RFI Roundtable on the Clean Development Mechanism (CDM) and their active support for a GHG registry seems driven in part by their disappointment in the prospects for an active CDM market. Many of the comments we heard stressed dissatisfaction with high transaction costs and low carbon prices for CDM; a complex approval process imposed by the CDM Executive Board as well as additional hurdles to be imposed by GOI; the lack of clear guidelines on baselines, additionality and leakage; and dismay over low demand and slow response for projects. Indian industries now appreciate the competitive global market for GHG reductions and seek to enhance their competitiveness relative to other developing nations by using a registry approach to build credibility. Many also look to a registry development process to provide much needed guidance on inventory design, project baseline development, and to prepare for more intense verification activities.

Financial Institutions (FIs) are actively supporting a pilot registry development process and appreciate the role a registry could play in project bundling. By aggregating small projects – particularly small renewable projects – a registry could effectively lower development and transaction costs. FIs also recognized the use of a registry in identifying and prioritizing projects for different global markets outside of the Kyoto Protocol CDM market. There was strong support for a registry system that could help to identify key characteristics of various projects and to match each project with potential markets. IDFC was very positive about a registry pilot project and even expressed an interest in hosting the registry. IDFC's leadership would be extremely valuable in this process and immediate efforts should be undertaken to map out a strategy for positive collaboration between IDFC and CII.

Conclusion The prospects for developing a successful pilot registry project in India are very strong. Based on the feedback we gathered during the policy exchange visit, it is possible to keep GOI comfortable, trade associations actively committed, financial institutions engaged, and industry and project developers participating in a pilot registry project. It appears that proper design of a pilot registry could support multiple objectives of the US Government in fostering technology transfer, building capacity to deal with emerging environmental issues, and supporting sustainable practices in India. This project is very important to ERT since it is exactly the type of work our organization was created to perform and we eagerly anticipate further opportunities to provide policy, technical and software support to this important project. A key challenge will be to forge an alliance between CII and IDFC by identifying mutually agreeable roles and responsibilities for a registry development partnership between CII and IDFC.

Overview of Policy Exchange Meetings

March 3	USAID/India – E3	<ul style="list-style-type: none"> Mr. John Smith-Sreen, Deputy Director of Office of Environment, Energy and Enterprise Mr. Sandeep Tandon, Project Management Specialist
March 3	Ministry of Environment and Forests (MOEF)	<ul style="list-style-type: none"> Mr. C. Viswanath, Joint Secretary of MOEF Mr. R. K. Sethi, Director
March 5	Confederation on Indian Industry (CII)	<ul style="list-style-type: none"> Mr. K. P. Nyati, Head of Env. Management Division Dr. Suman Majumdar, Counselor
March 5	Federation of Indian Chambers of Commerce and Industry (FICCI)	<ul style="list-style-type: none"> Mr. Jeyaseelan, Senior Director Ms. Rita Roy Choudhury, Team Leader, Environment Division Mr. Surender Kumar, Manager of Agribusiness Information Centre Mr. Tabrez Ahmed, Senior Assistant Director
March 6	Ministry of Environment and Forests (MOEF)	<ul style="list-style-type: none"> Dr. Subodh Sharma, National Communication Coordinator
March 6	Central Pollution Control Board (CPCB)	<ul style="list-style-type: none"> Dr. B. Sengupta, Member Secretary
March 7	Bureau of Energy Efficiency	<ul style="list-style-type: none"> Mr. Shashi Shekhar, Director General of BEE
March 10	Infrastructure Development Finance Company Limited (IDFC)	<ul style="list-style-type: none"> Mr. Anoop Seth, Chief Financial Officer Mr. Ajay Narayanan, Vice President, Environmental Management & Social Development Group Ms. Jaya Singhania, Asst. Vice President – Legal Mr. Sadashiv S. Rao, Vice President – Operations Mr. Khorezad Dordi, Asst. Vice President-Operations
March 10	IL&FS Ecosmart India Ltd IL&FS Wind Farms Limited	<ul style="list-style-type: none"> Mr. Santosh Shidhaye, Business Leader, Industrial Environmental Manager Mr. Subhash Mathurvaishya, Managing Director, IL&FS Wind Farms Limited
March 10	ICICI Bank Limited	<ul style="list-style-type: none"> Mr. Girish R. Mahajan, Chief Manager Mr. A. T. Kusure, General Manager

Detailed Notes on Policy Exchange Meetings

March 3 – USAID Briefing

USAID hosted an initial meeting with LBG and ERT that provided valuable guidance on the dynamics of the key stakeholders in this process. At our opening meeting USAID expressed support for this exchange of technical information as well as keen interest in the policy dimensions to this work. The registry dialogue process was identified as a fundamental building block for achieving credible environmental goals through the use of *market mechanisms* without being limited to any one specific market or policy. A project to develop a pilot registry in the private sector in India provides an excellent opportunity for the US to enhance Indian competitiveness, remain engaged in important climate change work, while maintaining the Administration's position on the Kyoto Protocol.

We discussed the fine line that the US Administration must walk between rejection of the Kyoto Protocol and support for the goals and processes of the United Nations Framework Convention on Climate Change to which the US is a signatory. USAID provided valuable direction on approach and tone for communicating the US position that was useful throughout the exchange visit. In particular, John Smith-Sreen suggested strategies for

pushing for a champion to emerge in each key stakeholder group and this was pursued to great effect in our subsequent meetings. Corporate responsibility was identified as a theme that resonates well with Indian industries and the suggestions and blueprint put forward from CII confirmed this.

March 3 – MOEF

This meeting was difficult given that our discussion was punctuated by numerous and continuous interruptions by phone calls, personnel requesting signatures, and sideline conversations between MOEF speculating on questionable US motives for this work. Despite the interruptions, we appeared to make some progress in allaying fears that this was neither an unnecessary distraction nor an encroachment on GOI turf. We were able to provide a brief demonstration of ERT's on-line registry to Mr. Sethi. Our visit also served to educate MOEF on the need for a registry under Article 8 of the Kyoto Protocol and we may have convinced him that this exercise could provide a valuable "jump start" for registry development that facilitate development of a GOI registry in the future.

March 5 – CII

Mr. Nyati revealed that CII is developing a manual for CDM projects and confirmed industry unhappiness with complex rules and high transaction costs under the CDM. He outlined a wider or more elaborate project than we had initially planned but many of his ideas deserve serious consideration as this project is being planned. Mr Nyati proposed an "Environmental Responsibility Platform" which would gather benchmark data in addition to emission data. He cited needs to benchmark Indian industries so that under performing businesses could understand their relative position domestically as well as globally. He proposed a platform that could enhance sectoral analysis, identify inefficiencies, track waste production, consumption of raw materials, etc. He proposed developing an index based on weighting factors to allow industries within a sector to rank themselves on a scale from low to high.

to whom? — This could be very useful in setting baselines based on performance of the top 20% of domestic industries in a given sector or source category. He also speculated on ways this could be used to incentivize environmental performance, and to provide public recognition to socially and environmentally responsible industries. He was very engaged on how this would work, who would participate, who would verify or certify, who would participate, and clearly expressed a desire for CII to serve as host for the registry. He stressed the importance of credibility, and agreed that perhaps a tiered structure would be the best way to maximize participation (at the lowest tier) while also accommodating the needs of the carbon market (providing a highest tier of verified and screened projects and reductions). He agreed to draft a letter in favor of this proposal.

March 5 – FICCI

FICCI is very interested in serving as the lead group for developing reporting and verification protocols and could also lead teams to conduct verification activities with a little training and support. This meeting identified many areas for future interaction as the FICCI team is very interested in learning more about tools and procedures developed in the US. They would benefit from a targeted exchange program to come to the US and learn more from experts in inventory development and emissions measurement.

They have developed numerous websites aimed at facilitating peer-to-peer exchange and sharing knowledge. ERT's subcontractor and partner in registry software development –

ForumOne Communications – provided written comments on FICCI's web pages and has suggested improvements to enhance functionality and reduce delays in page loading via more efficient web technology. FICCI has an established network of experts, industries and communication channels and will be an important partner in any future development of this project.

March 6 – MOEF & NATCOM

This meeting, although largely a courtesy call, was extremely positive and productive. ERT provided Dr. Sharma with materials developed by the US EPA that will assist his work in the production of India's first National Communication to the UN, and Mr. Sharma graciously gave autographed copies of his climate change book to us. We left with an appreciation for the work that has been done to establish a network amongst government agencies, research centers, and academics that may be very useful as this process develops.

March 6 – CPCB

This meeting was very brief but served its purpose of keeping CPCB in the loop and a follow on meeting was agreed to. Background materials should probably be sent to CPBP prior to that meeting so they will have a chance to better understand this process and its relationship to their role in GOI.

March 7 – BEE

Mr Shekhar seemed moderately interested in this idea and considered a registry project acceptable so long as it was outside the CDM realm. It was unclear if he fully grasped the concept we were describing. He agreed that a private registry could excite interest in Indian industries and suggested a pilot phase working with 10 projects or companies first. He suggested that NTPC should be actively engaged.

March 10 – IDFC

Forum
The meeting with IDFC was the most concrete and productive of all our meetings. They appear to have already decided that a registry could provide access to new markets for projects they support and endorsed the idea of a private registry paving the way for future public-private partnerships. Their questions revealed a deep understanding of the challenges and opportunities faced with developing a project of this nature. They recognized the usefulness of project bundling and were interested in further conversations related to bundling residential solar projects. ERT shared a brief outline of a Solar Offset System (SOS) that ERT is developing under a USEPA cooperative agreement. The SOS will be operational this summer and is an example of a registry approach to support project bundling and this could be an area for future collaboration and discussion. It would be useful for ERT and LBG to discuss the Solar Offset System in more detail at the appropriate time in the future.

March 10 – IL&FS

The meeting with IL&FS was brief but encouraging. It appears that some of their projects would benefit from being amongst the first to register and they supported the idea of being registry participants. An expanded version of an environmental responsibility platform, as suggested by Mr Nyati, attracted a lot of favorable attention from Mr Shidhaye. They viewed the broader support for responsible industry practices as a useful extension of this approach.

March 10 – ICICI

ICICI viewed the development of a GHG market in terms of an early stage in a commodity market. They were very interested in continuing to collaborate on registries but seemed confused on the need for a registry beyond a government registry aimed to support CDM projects. Providing ICICI with additional background materials would be a useful next step in advancing their support and understanding for this effort.

Presentations

Four primary presentations were developed for this visit entitled: Briefing for USAID, GHG Registry for Industry, Registry System Development (several different versions), and Registry System Monitoring and Verification Needs. These have all been delivered to the Louis Berger Group.

Annex B:

CII Roundtable Presentation

GHG Registry for Industry

Environmental Resources Trust
1000 15th Street, Suite 1000
Washington, DC 20004
Tel: 202 462 1000
Fax: 202 462 1001
www.ert.org



Environmental Resources Trust

- ERT is a non-profit organization;
- Dedicated solely to building markets that improve the environment;
- Focused on direct action – bringing private parties together in service of their own best interests *and* the environment;
- Committed to building the infrastructure for international GHG emissions trading; and
- Working with governments, international companies, financial institutions and local market participants.



General Registry Goals

- Encourage early, voluntary action to manage emissions
- Develop GHG emissions “currency”
- Support for best practices in GHG accounting
- Foster adoption of independently verifiable protocols for tracking emissions performance
- Enhance public confidence in economically motivated action that reduces GHG emissions
- Enable leader industries to demonstrate corporate responsibility



Operating the Program: Role of the Registry

- Provide access to data on emissions and allowances
- Track and record allowance transfers
- Maintain account balances
- Annual reconciliation of allowances and emissions
- Maintain and archive transaction logs
- Case-by-case review of trades is not necessary

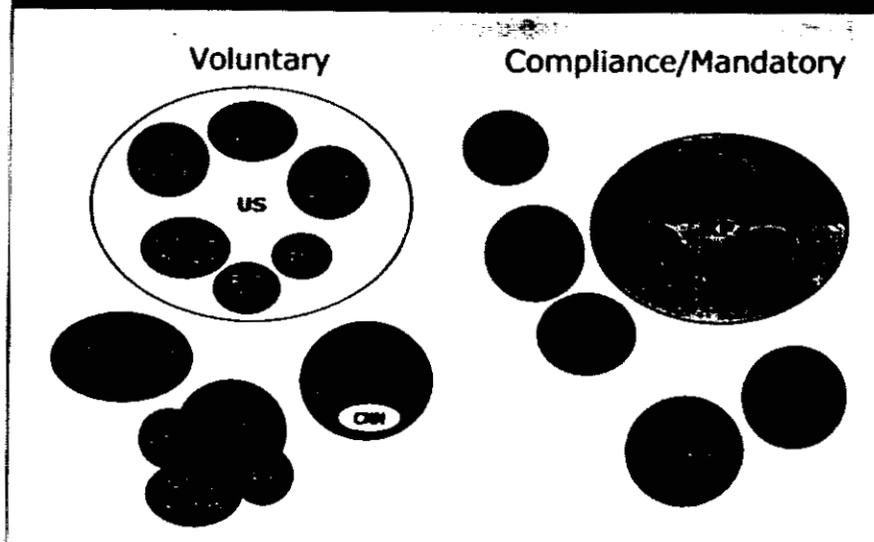


Essential Characteristics of a Market Oriented Registry

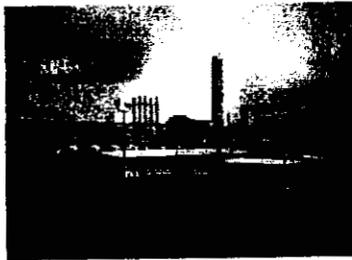
- Defines the commodity and promotes fungibility
- Sets measurement, verification & reporting (MVR) standards
- Provides transparency
- Reduces transaction costs
- Provides a mechanism for transfer
- Establish records of clear ownership



GHG Reporting and Trading Programs



Example of Energy Sector Project: Plant built to capture gas from flare



- Inventory developed for all new emission sources
- Measurement protocol developed & implemented
- Now the hard part begins

- Gas analyzed and metered
- New company converts waste gas to product
- Direct emissions from flare combustion are reduced
- Flare reductions quantified



Registry Policy Needs

- Technical standards can be readily established for measuring and monitoring emissions
- Policy guidance for baseline setting, additionality screens, leakage analysis is more difficult
- Clear accounting rules needed for projects and companies to move forward
- A Registry system can enhance consistency, standardization and transparency for emerging GHG markets in India

Annex C:
Other Presentations

GHG Registry for Industry

Wiley Barbour
Environmental Resources Trust, Inc.
www.ert.net



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Request for proposal all or part of this material should be made to ERT

Environmental Resources Trust

- ERT is a non-profit organization;
- Dedicated solely to building markets that improve the environment;
- Focused on direct action – bringing private parties together in service of their own best interests *and* the environment;
- Committed to building the infrastructure for international GHG emissions trading; and
- Working with governments, international companies, financial institutions and local market participants.



ERT GHG RegistrySM Program

- Major U.S. and Canadian companies in key emitting sectors working with ERT to track emissions
- Over 100 million metric tons of CO₂ equivalent emissions verified and registered, including more than 21 million metric tons of CO₂ reductions
- 2001 transfers exceeded 1.5 million tons CO₂e
- Registering and verifying the largest US IJI-approved infrastructure projects in electricity and oil & gas sectors (in Argentina and Eq. Guinea)



Registry Basics

- A well-designed registry program ensures measurable, verifiable, and comparable environmental results
- Registries can apply to several types of environmental commodities – air emissions most common
- It provides a central, independent repository for credible information about emissions activities
- An emissions registry performs a critical data management and accounting role and serves as a ledger of all transactions



General Registry Goals

- Encourage early, voluntary action to manage emissions
- Develop GHG emissions “currency”
- Support for best practices in GHG accounting
- Foster adoption of independently verifiable protocols for tracking emissions performance
- Enhance public confidence in economically motivated action that reduces GHG emissions
- Enable leader industries to demonstrate corporate responsibility



Operating the Program: Role of the Registry

- Provide access to data on emissions and allowances
- Track and record allowance transfers
- Maintain account balances
- Annual reconciliation of allowances and emissions
- Maintain and archive transaction logs
- Case-by-case review of trades is not necessary



Integrated Approach to Monitoring and Registration

- **Develop Monitoring, Reporting and Verification (MRV) Protocols** to ensure comparable and consistent emissions data
- **Require rigorous verification and auditing practices** to enhance data quality and inspire market confidence
- **Use registries to ensure accurate tracking of emissions and allowances, and to provide access to these data**



Operating the Program: Source Responsibilities

- **Sources develop compliance strategy**
 - fuel switching, efficiency improvements, control devices and process modifications, and emissions trading
- **Sources monitor & report all emissions**
 - install metering and monitoring devices
 - Measure and track fuel consumption
 - periodic performance tests and calibrations
 - submit measured emissions data and test results
- **Sources may trade allowances, but must hold sufficient allowances to cover annual emissions at the end of the period**

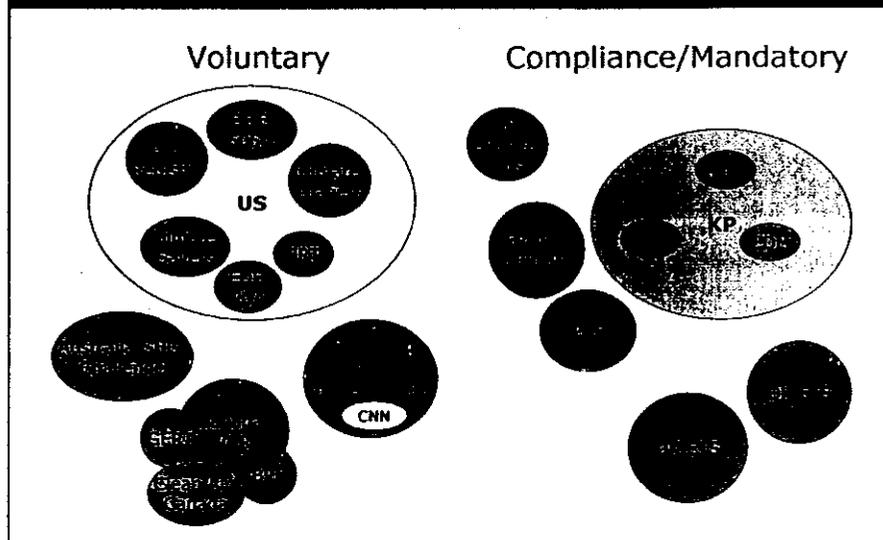


Essential Characteristics of a Market Oriented Registry

- Defines the commodity and promotes fungibility
- Sets measurement, verification & reporting (MVR) standards
- Provides transparency
- Reduces transaction costs
- Provides a mechanism for transfer
- Establish records of clear ownership

GHG Registry

GHG Reporting and Trading Programs

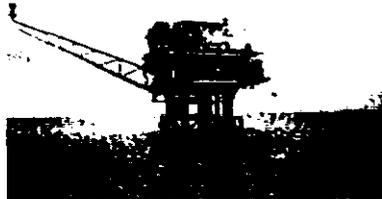


Emission Registries in the US

- US Acid Rain Trading Program and Allowance Tracking System (ATS)
- US DOE's 1605(b) GHG Registry
- Chicago Climate Exchange
- California Climate Action Registry
 - Other states currently developing registries include California, New Hampshire, New Jersey, and Wisconsin - all voluntary and not complete
- ERT's GHG Registry™

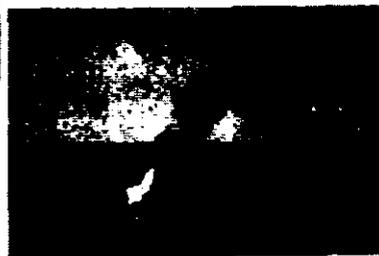


Example of Energy Sector Project: Base case emissions



Offshore gas resources
extracted and pumped to shore
in remote African location

After valuable condensates
are removed the residual
gas is flared in massive
ground flare (10⁶ cfd)



Example of Energy Sector Project: Plant built to capture gas from flare



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- A Registry system can enhance consistency, standardization and transparency for emerging GHG markets in India



GHG Reporting and Emissions Trading



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- Major U.S. companies in key emitting sectors working with ERT to track emissions
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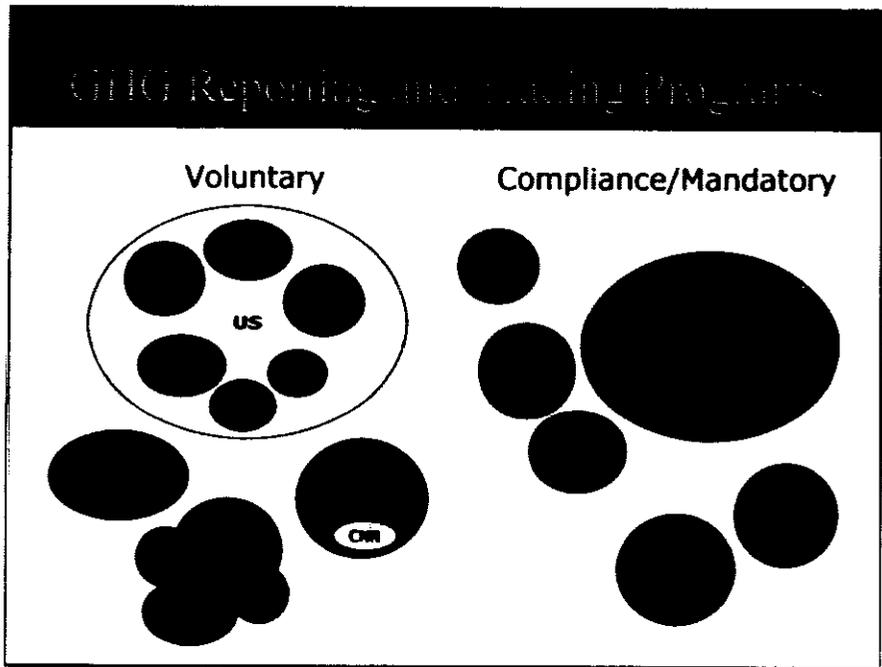


- A well-designed registry program ensures measurable, verifiable, and comparable environmental results
- Registries can apply to several types of environmental commodities – air emissions most common
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- An emissions registry performs a critical data management and accounting role and serves as a ledger of all transactions



Key Objectives of a GHG Program

- Encourage early, voluntary action to manage emissions
- Enable a smooth transition to a “capped” emissions trading market
- Develop GHG emissions “currency”
- Support for best practices in GHG accounting
- Foster adoption of independently verifiable protocols for tracking emissions performance
- Enhance public confidence in economically motivated action that reduces GHG emissions

GHG Registries and Exchanges

- US Acid Rain Trading Program and Allowance Tracking System (ATS)
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- ERT's GHG RegistrySM



Emission Trading in China



ERT discussing emission registries last year with Shanghai Pollution Control Board

- Several emission trading pilot programs are now being implemented in China for SO₂ control
- The City of Shanghai is developing an emission registry for the 19 power plants that serve the mega-city



What does ERT's GHG Registry service include?

- A web accessible, secure Oracle database for the recording of verified year-on-year GHG emission performance.
- A repository of qualified emissions reports and transactions
- Independent assessment and/or development of each Registry client's reporting system, methods, and baseline GHG data
- Recordation of valid GHG emission reductions for possible future trading as part of the Registry service.



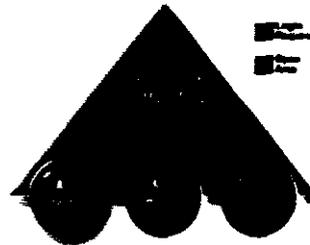
What is the GHG Registry program?

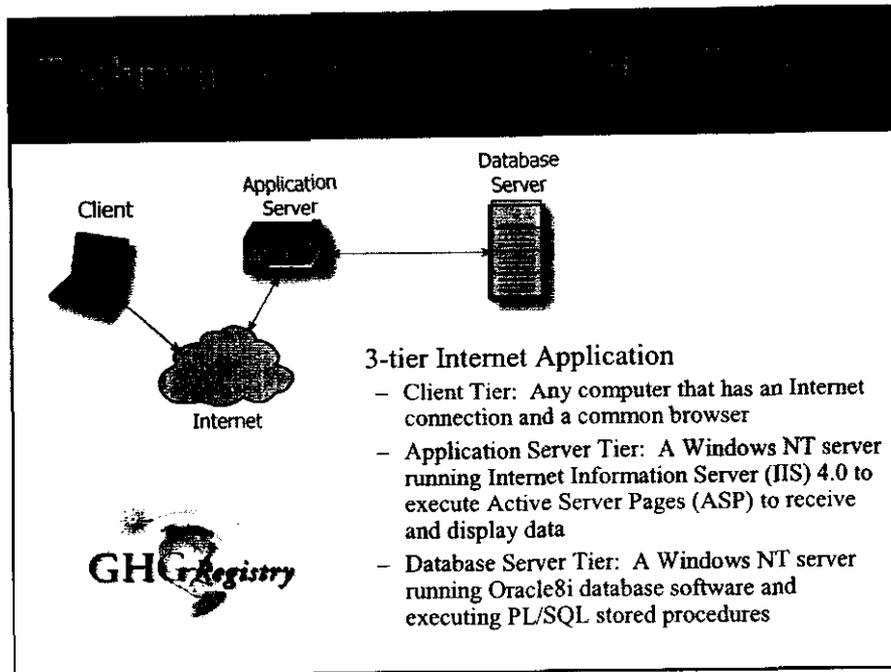


The system that provides the tracking function for ERT's GHG Registry program

An Internet application comprised of 3 sections:

1. Public access
2. Administrative access
3. Registered user access





GHG Registry

Environmental Resources Trust
Greenhouse Gas Registry

GHG Registry

Welcome to the Environmental Resources Greenhouse Gas Registry.

If you are a member of the Registry, you can login to the secure site to either view reports or update information in the system. If you are not a member of the Registry and would like to be, go the ERT Contact page to find out how to contact ERT for membership. Non-participants to the Registry can click on Public Access to view the most recent information available.

NOTE: This system requires a browser that is compatible with Java and JavaScript. Also, this site is best viewed at a 1024 x 768 resolution to view it at the most comfortable.

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This website is on the sites at ERT.net and their diligent work with the environment.

EcoAir | EcoLand | EcoPower

About | GHG Reports | System Membership | ERT News | GHG Related Links | ERT Home

The Greenhouse Gas Registry is designed to enable the reporting and tracking of greenhouse gas emissions by voluntarily reporting companies.

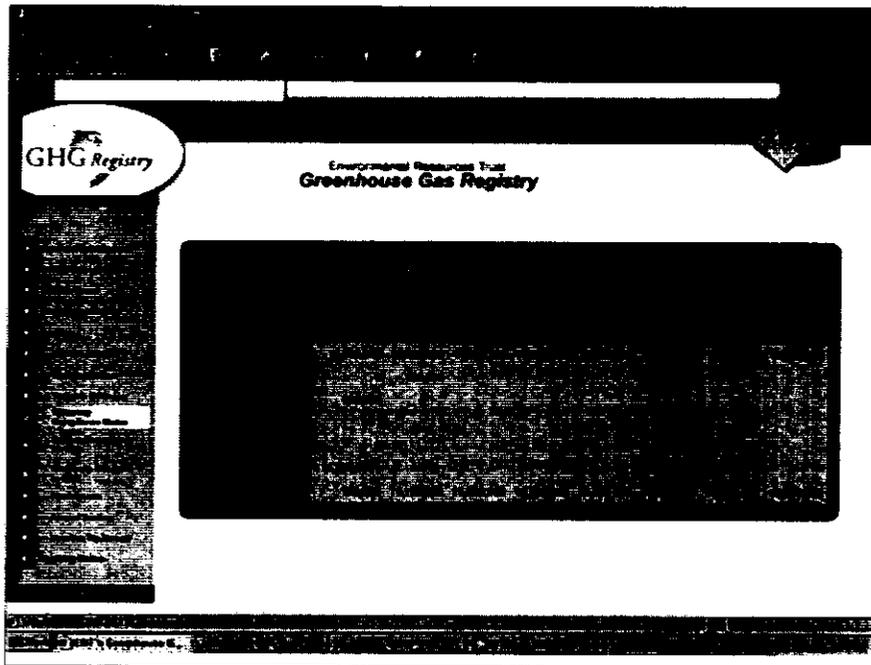
Sign more about the Registry.

Public Access

GHG Registry

Look at what ERT is doing.

Check ERT sites to reduce GHGs.



Market Organization

- Defines the commodity and promotes fungibility
- Sets measurement, verification & reporting (MVR) standards
 - to give market participants confidence in the data reported
 - to provide transparency
- Reduces transaction costs
 - investigation
 - contracting
 - transfers
- Provides a mechanism for transfer
- Establish records of clear ownership



Operational Approach From the Registry

- Provide access to data on emissions and allowances
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Design of a Market-Oriented Source-Specific System

- Sources develop compliance strategy
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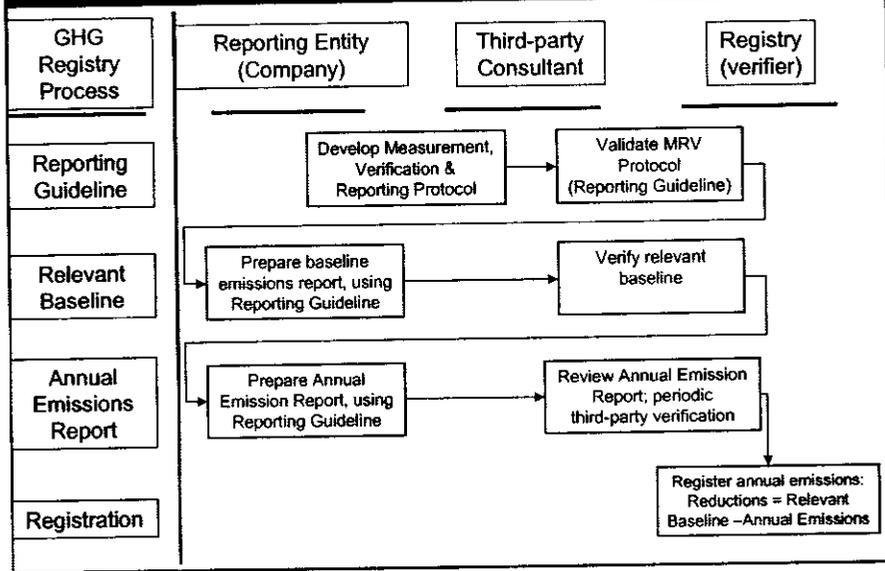


Essential Characteristics of Market-Oriented Register

- Defines the commodity and promotes fungibility
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GHG Registry Process



GHG Registry System: Monitoring & Verification Needs

World Bank
Environmental Policy Group
Washington, DC



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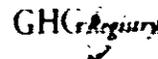
ERT Registry Standards

- **Scope:** Actual direct emissions
 - No indirect emissions; no rate-based reporting
- **Boundaries:** Focus on registering entity-wide emissions
 - Large companies can register by business unit
 - Project level acceptable where there is an independent baseline
- **Monitoring Protocol:** Must satisfy verification needs
 - Build on existing data management systems
- **Baseline:** "Reasonably ascertainable"
 - Accounts for changes in market share, acquisitions & divestitures
 - Verified against MRV Protocol
- **Attestation & Verification:**
 - Independent verification & other sources of externally audited data
 - Corporate attestation, including clear ownership

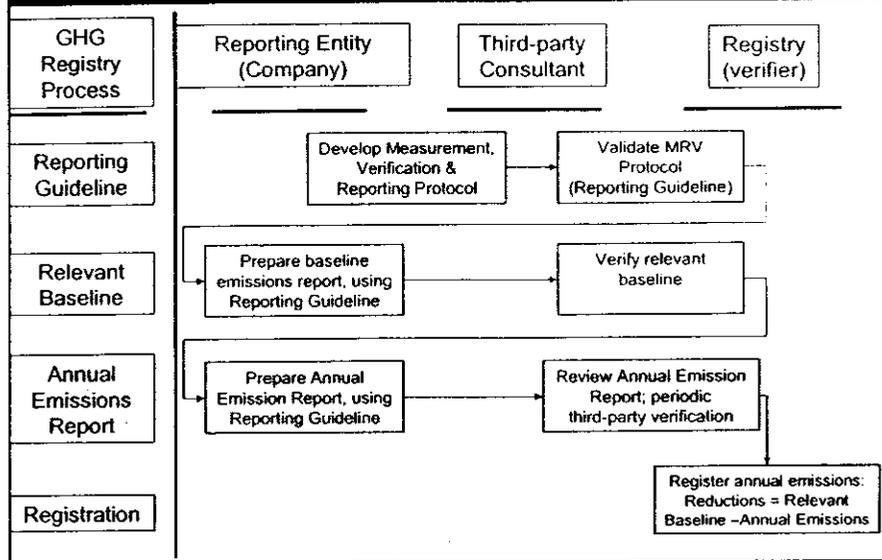


Essential Characteristics of a Market Oriented Registry

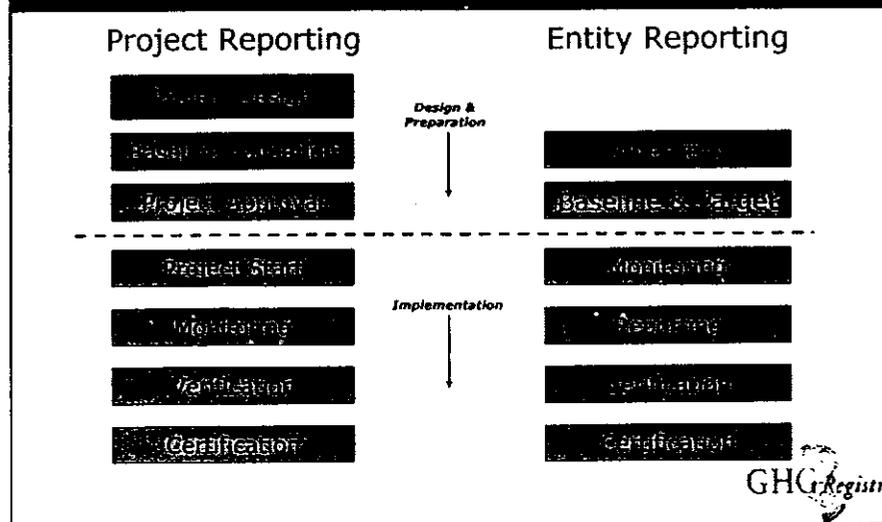
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GHG RegistrySM Process



Monitoring & Verification Steps



Verifiable MRV Protocol – Elements

1. Inventory Design

- Organizational and operation boundaries
- Corporate-wide, complete, comprehensive inventory of GHG flux or clear project boundaries
- Identification of emissions sources and sinks

2. Methodological Approach

- Clarification of measurement techniques
- Documentation of emission factors & calculation methods
- Supporting data for emissions quantification



Verifiable MRV Protocol – Elements

3. Data Management Procedures

- Description of data management procedures
- Discussion of data quality assurance measures
- Data uncertainty addressed

4. Verification Requirements and Reporting

- Detail of an internal verification procedure
- Reporting guideline including format, frequency, and supporting documentation requirements
- Review above as it applies to the baseline analysis



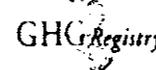
Annual Reporting and Registration

- Registrant implements MRV protocol
- Registrant submits Annual Emissions Report (AER), including supporting documentation and relevant baseline update (*e.g.* for acquisitions, divestitures or other structural changes)
- ERT reviews AER and registers year-on-year emissions performance in denominations of serialized metric tons of CO₂e emissions
- Emissions reductions = updated baseline - actual emissions



Some Definitions

- **Auditing** is the examination of reported data and/or original records to check their accuracy.
- **Certification** is the objective and independent assessment, by an accredited auditor, that the reported GHG inventory conforms to the standards of the accrediting agency.
- **Verification** is the objective and independent assessment that the reported GHG inventory properly reflects the GHG impact of the company or project in conformance with pre-established GHG accounting and reporting methods



Periodic Third-Party Verification

- Third-party verification: *critical for credibility, transparency and fungibility*
- Registries should match due diligence with a flexible approach to verification
 - Registrant contracts for qualified 3rd party verifier, or
 - Registry verifies in-house or 3rd party contractors
- End Goal: verified emissions inventory and/or corporate/project reductions



System Integrity

- Not enough to minimize potential conflicts of interest - even the appearance of C.O.I. must be avoided to maintain confidence
- Establish rules of procedure for auditors to ensure independence and disclosure
- Consider prohibition of dual services – consulting and auditing services pose inherent C.O.I. issues



It's All About Confidence...

"The Enron crisis is an opportunity to reinvigorate the checks and balances in the financial system. Bringing more transparency to company statements, ensuring the independence of public-company auditors...can help restore public confidence in our markets."

Arthur Levitt, former SEC Chair, in New York Times Op-Ed, Jan. 17, 2002



Build Verification into System

- Auditors don't make the standards
- Project design should incorporate anticipated verification activities from the onset
- Project and offset approval process should rely on critical and impartial review
- Recognize link between monitoring costs, value of offsets, and confidence limits



Site Inspection of oil well platform



There is no substitute for on-site verification!

GHC Registry

Annex D:

Other Supplemental Materials

Why should my company participate in verification and registration?

In the current policy situation, companies have several principal motivations for registering their GHG emissions. First, the process of measuring, verifying, and registering corporate emissions provides a company with a valuable education about its emission performance and a basis to compare opportunities for internal reductions versus external offset purchases. Second, if a company currently is undertaking emission reduction efforts, third-party verification provides valuable support for baseline protection under a future regulatory regime. Third, if a company perceives market mechanisms as the most cost-effective means of reducing national GHG emissions, early participation in registry efforts will demonstrate to regulators that emission trading is both cost-effective and environmentally sound.

ERT provides several different services to accommodate the needs of our varied registry clients. We offer: 1) a tracking service for year-on-year GHG emissions, where no performance target is set and no serialized reductions are recorded; 2) a tracking service measuring performance against a mutually agreed upon year-on-year GHG emissions target; performance against this target determines the amount of reductions registered; and 3) a project tracking and recording service through which emissions-reductions projects are tracked and project-specific reductions are serialized in the registry. In addition to registry work, ERT also provides validation and verification services to corporate and governmental clients worldwide.

Why should my company buy verified, registered tons?

Companies around the globe currently are investing in emission reductions. Some companies are applying these tons to voluntary targets; others are using them to meet compliance goals; and still others are engaging in price exploration. As nations increasingly institute voluntary or mandatory trading programs in anticipation of the implementation of the Kyoto Protocol, increased trading naturally will occur.

The ultimate market value of these tons will be determined by investor confidence in their fungibility. Companies must be certain that the tons they purchase may be applied to meet their allowances under a future regulatory framework. In order for companies to be certain of the quality of the tons they purchase and the likelihood that the tons will be accepted under future trading scenarios, companies should insist that the tons they purchase have been verified and registered by an independent third party. In addition, by relying on an independent registry to apply consistent measurement, verification, and reporting standards, purchasers can avoid the expense of due diligence investigations and contract negotiations to allocate risks for each transaction.

For further information, please contact

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