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Outreach of IPCC findings in developing countries: lessons learned

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Abstract

After the completion of IPCC's Third Assessment Report, Working Group III on Mitigation embarked upon an outreach programme to disseminate the IPCC assessments in developing countries and countries with economies in transition, in particular the Working Group III assessments on climate change mitigation, technology transfer and emissions scenarios. ` The report confirms the importance of such outreach activities in countries in which the reports are much less accessible than in OECD countries. The activities also provide experience to improve future reports by better addressing priority concerns and local characteristics in developing countries and economies in transition. Climate change being a global problem, it is important to inform scientists, decision-makers and other stakeholders in these countries about the state-of-the-art IPCC reports and discuss their implications for the countries involved.

Contents

Samenvatting

Van 1998-2000 is door het Intergovernmental Panel on Climate Change (IPCC) een serie rapporten uitgebracht met een actuele en volledige evaluatie van de kennis op het gebied van het klimaatsysteem, van de kwetsbaarheid voor klimaatverandering en aanpassing daaraan en van de mogelijkheden om het probleem aan te pakken. Deze rapporten werden geschreven door experts uit zowel industrie- als ontwikkelingslanden en worden gebruikt door beleidsmakers, wetenschappelijke onderzoekers, het bedrijfsleven en andere geïnteresseerden over de gehele wereld. Echter, vanwege verschillen in beschikbaarheid van geld en middelen, hebben ontwikkelingslanden en transitieëconomieën meer moeite met het vinden van de rijke informatie van de IPCC rapporten voor verder nationaal onderzoek en beleidsontwikkeling op het gebied van klimaatverandering en de aanpak daarvan. Het management van het IPCC heeft naar wegen gezocht om de inhoud van de rapportages verder te communiceren dan de wetenschappelijke gemeenschap die bij het opstellen ervan betrokken is. Na de afronding van het Derde Assessment Rapport in 2001 is de Technical Support Unit van Werkgroep III van IPCC bij het RIVM in Nederland begonnen met een programma om de inhoud van de rapportages verder te communiceren in ontwikkelingslanden en transitie-economieën, vooral via het organiseren van seminars. Deze hadden als doel om vooral die onderdelen van de rapportages te bespreken die het meest relevant zijn voor de landen in kwestie. Een secundair doel hiervan was om te onderzoeken of het in de IPCC rapportages vervatte materiaal voldoende de specifieke interesses en problemen in deze landen behandelde.

Het onderhavige rapport vat deze bijdrage van Werkgroep III aan de communicatie van IPCC materialen samen. Het rapport bevestigt de relevantie van deze vorm van communicatie in de betreffende landen. Aanbevelingen worden geformuleerd om de effectiviteit van dergelijke activiteiten in de toekomst te verbeteren door betere samenwerking met lokale instellingen en internationale organisaties zoals UNEP en UNDP. Het rapport start met een overzicht van de informatie-activiteiten van het IPCC (hoofdstuk 1) en met een samenvatting van ieder geörganiseerd seminar (hoofdstuk 2). Hoofdstuk 3 behandelt de rol van de sprekers en de relatie met specifieke doelgroepen, gevolgd in hoofdstuk 4 door een beschrijving van de belangrijkste behandelde onderwerpen en prioriteiten bij de lokale deelnemers aan de seminars. Hoofdstuk 5 behandelt aanbevelingen van lokale organisatoren van de seminars, en hoofdstuk 6 concludeert wat er in het programma is geleerd van de ervaringen en noemt aanbevelingen voor toekomstige programma's. Appendices 1.1 tot en met 1.7 bevatten de rapportages van de diverse landenactiviteiten.

Summary

From 1998-2001, the Intergovernmental Panel on Climate Change (IPCC) completed a series of reports providing a comprehensive and up-to-date scientific assessment of climate change science, adaptation, vulnerability and mitigation issues. All these reports were written by experts from both developed and developing countries and have been used by policymakers, academic communities, the private sector and other interested people around the world. However, owing to the differences in resource availability, developing countries and countries with economies in transition often encounter more difficulty in accessing and using the rich information of the IPCC assessments for further national analyses and decision making in the area of climate change (such as mitigation). During the IPCC Plenary and Bureau meetings discussions on outreach have been held, addressing ways to effectively disseminate information beyond the scientific community that has elaborated the IPCC reports.

Responding to this, following the finalisation of the Third Assessment Report in 2001, the IPCC Technical Support Unit of the Working Group III on Mitigation started an outreach programme by interacting with the users of the IPCC reports in developing countries and in economies in transition, primarily through the co-sponsoring of seminars. These seminars aimed to disseminate the IPCC findings by discussing with a wider audience in different developing countries and economies in transition those elements in the IPCC assessments that would be most relevant to them. This also had the secondary goal to explore if and how their interests and problems were adequately represented in the IPCC reports.

This report summarizes this TSU-WGIII contribution to the IPCC outreach activities. The analysis presented here confirms the relevance of doing outreach in developing countries and countries with economies in transition. Actions and other main recommendations are proposed that could may make future IPCC outreach activities more effective. Outreach efforts can be made more effective and focused by collaborating with a variety of local institutions as well as international organizations such as UNEP and UNDP.

The report starts by giving an overview of outreach activities in the IPCC (chapter 1) and of each one of these seminars (chapter 2). Then, the role of the speakers and the profile of the audience is summarized (chapter 3), the subjects covered and the main interest of the audience as a whole (chapter 4) and the suggestions from the local organizers (chapter 5). Chapter 6 concludes what is learnt from these experiences and finally recommendations are formulated for future outreach activities. Appendices 1.1 through `.7 contain the reports provided by the local organizers.

1 What has been done so far?

1.1 IPCC outreach activities

In the past four years the Intergovernmental Panel on Climate Change (IPCC) completed a series of reports, providing a comprehensive and up-to-date scientific assessment of climate change science, adaptation, vulnerability and mitigation issues[1]. All these reports were written jointly by experts from both developed and developing countries and have been used by policymakers, academic communities, the private sector and other interested people around the world. Policy makers use the IPCC reports as authoritative reference materials; they are not policy prescriptive. The assessments are scientifically objective and neutral and represent the scientific consensus on climate change, noting dissenting views. This is the reason why the IPCC reports are an important scientific reference for a broad audience interested in the problem of climate change. The IPCC provides assessments that are relevant to inter- and-intra-governmental decision processes (to the world's leading experts working in the areas covered in its assessments). It must produce objective assessments and ensure the necessary transparency in its processes so that decision-makers can evaluate the reports' objectivity[1].

However, owing to the differences in resource availability, developing countries often encounter more difficulty in accessing and using the rich information of the IPCC assessments for further national analyses and decision making in the area of climate change, such as mitigation. Some of these difficulties (to have access to this specialised information) are linked to the limited availability of materials. There is a lack of financial resources for acquiring sufficient copies of the printed volumes and for obtaining computers, printers, paper for printing, and for access and fast enough connection to the Internet. Other problems are linked to the availability of human resources in the area of climate change, including an important gap in knowledge on climate change in general and on the updated and reliable information on the science of climate change and how to respond to it specifically. The lack of expertise, the difficulty in applying the information to national or local circumstances, the difficulty in finding the right information (accounting for the separation between politics and the science of climate change) are other problems to be added to the list of difficulties.

Limitations of IPCC

One may doubt if these above-mentioned difficulties are indeed issues to be addressed through the IPCC channels. Indeed, the point of departure in the WGIII outreach programme has been that local host organizations and other international organizations such as UNEP[2] should be responsible for the contents of the activities, clearly separating approved and/or accepted IPCC materials from other materials prepared for and presented during these activities. However, the IPCC does intend to increase the awareness of climate change by making available to a wider scientific and non-scientific audience the state-of –the-art knowledge on the science on climate change, its potential impacts and mitigation[2]. During the IPCC Plenary and Bureau meetings discussions on outreach have been held, addressing ways to effectively disseminate information beyond the scientific community that has elaborated

[1] B-27/Doc.2 item 1, August 2002
[2] IPCC-XVII/Doc.6, B-27/Doc.2, B-27/Doc.14, B-27/INF.1, August 2002

the IPCC reports[3]. Therefore, while IPCC cannot be responsible for interpreted information derived by others from its reports, it can stimulate their distribution and usage as a source of information and as a basis for political and scientific debate in member countries.

What IPCC has done so far?

The Panel has increased awareness of the problem of climate change through three main actions. It has made (http://www.ipcc.ch/) all the reports that have been produced so far available in different UN languages at the IPCC website (http://www.ipcc.ch/pub/reports.htm#sprep). Second, it distributes these reports for free and upon request to developing countries and countries with economies in transition, in printed version or as CD-ROM[4]. Third, it has distributed brochures of the summaries of these reports during the climate change negotiations in the UNFCCC and in other fora. Thus, handing out IPCC materials and making them available through the website has been the traditional way of doing IPCC outreach.

1.2 Outreach activities by Working Group III

Unfortunately, however, as we have mentioned before, developing countries continue to experience difficulties in having access to and making use of this information. Therefore, an additional attempt was made to increase the understanding of climate change mitigation issues in these countries. After the finalisation of the Third Assessment Report in 2001 - the TAR (2001), the Technical Support Unit (TSU) of Working Group III (WGIII) on mitigation of the IPCC has started an outreach programme, interacting with the users of the IPCC reports in developing countries and in economies in transition. This was done primarily through the co-sponsoring of seminars. These seminars aimed to disseminate the IPCC findings to a wider audience in different countries with a focus on the issues that would concern them the most. This also had the goal to explore how and if their interests and problems were adequately represented in the reports.

After completion of the TAR, in 2001 a call for proposals was issued by WGIII of the IPCC inviting local institutions in developing countries and economies in transitions (EITs) to submit specific proposals to disseminate information from the WGIII reports in their countries[5]. Proposals had to respond to the need to increase awareness of climate change paying attention to the local circumstances of these countries, focusing on the WGIII mandate: mitigation. The proposals were selected on the basis of a set of criteria (see next chapter). This resulted in a series of outreach seminars, involving twelve institutions in seven countries, around 1400 participants and the shipment of around 5000 printed reports and CD-ROMs. It also involved the voluntary work of around 130 speakers of which around 40 had taken part in preparing IPCC reports The other speakers were chosen from the respective countries to bring in the users of IPCC information. The involvement of these experts has guaranteed both the transparency and the neutrality of the contents of the reports, and an effective link with the local reality.

In addition to the national/regional outreach activities which will be described below in more detail, the WGIII has also supported the development by the United Nations Environmental Program (UNEP) of an IPCC-WGIII popularized guide to the TAR-WGIII 2001: Mitigation.

[3] Reports of the 18, 19, 20, 21, 22, 24, 25, 27th sessions of the IPCC Bureau and the IPCC-XVII/Doc.6, IPCC-XVII/CRP.1, IPCC-XVIII/Doc2, B-28/Doc.8.
[4] IPCC-XVII/Doc.6
[5] IPCC-XIX/Doc.2

The WGIII co-chairs and TSU have provided comments on the draft texts of this guide, but the final responsibility for the contents rests with UNEP. As a result, this booklet 'A Simplified Guide to the IPCC's Climate Change 2001: Mitigation' was published by UNEP in October 2002 and distributed to all participants of the outreach seminars[6]. Finally, the WGIII TSU is supporting the translation into all UN languages of this above-mentioned booklet, as well as another UNEP popular booklet 'Managing Technological Change'[7]. This guide introduces and explains the ideas and issues covered by the Special Report on Methodological and Technological Issues in Technological Transfer (SRTT).

[6] It can be downloaded at the following website: http://www.unep.ch/conventions/index.htm through the link ÏPCC WGIII Guide'.
[7] It is available at the following link http://www.uneptie.org/energy/publ/index.htm

2 The seminar programme

2.1 Selection of proposals

The outreach proposals received were evaluated on the basis of the following criteria:

- relevance of the project objectives and the scope of the agenda / workshop programme;
- link with ongoing activities on climate change and/or plans for follow-up in the host country, to avoid an incidental event;
- the goal of enhancing or developing the technical skills and institutional capability in these countries to enable them to participate more actively in the international discussions on climate change;
- relevance of the target audience, notably a variety of experts, policy makers and other stakeholders, such as the private sector and NGOs;
- planning to apply the IPCC information to local current policy making and research;
- efforts to produce popular materials making the link between the IPCC reports and the local circumstances, including translation of the IPCC material into material for policy makers, if relevant in local languages;
- dissemination of the materials, e.g. through printed materials and websites;
- previous involvement of the project proponent in IPCC activities;
- an equitable distribution of available funds between all regions as much as possible;
- support from national governments.

As a result of applying these criteria, seven projects were selected for implementing WGIII outreach activities: Brazil, China, Cuba, India, Russian Federation, Sri Lanka and Tanzania.

2.2 A brief description of the seminars

2.2.1 Brazil

Outreach consisted of two seminars (for in total 231 policy makers, business and environmental NGOs, researchers and academia) and of three thematic discussions groups (agroforestry, industry and municipalities) and three institutions were involved: Coppe/CentroClima (Prof. Emilio la Rovere, website: www.centroclima.org.br, email: emilio@ppe.ufrj.br), Brasus (Suzanne Maia, website: www.brasus.net, email: brasus@brasus.net) and Cenbio (Prof. Jose Roberto Moreira , website: www.cenbio.org.br, email: bun2@tsp.com.br). Interesting discussions were held among others things on the need to develop regional scenarios for Latin America, on the potential use of the Clean Development Mechanism, on the problems related to technological transfer and on sustainable development concerns. The local organisers translated the Summary for Policy Makers of the TAR (SPM of the TAR), of the Special Reports on Technological Transfer (SRTT) and on Emission Scenarios (SRES) and the Synthesis Report into Portuguese. A survey was distributed among the participants to evaluate how they use the IPCC information and the usefulness of the subjects covered by the seminar. This type of survey can be used as a useful tool to point out the main interest of the audience and design more targeted future outreach workshops. The translations and the outcomes of the seminars are available at the above-mentioned websites and also through the following link:

http://www.ipccprojeto.org.br/seminario1.htm. The translations are also available at the IPCC website (link to non-UN languages http://www.ipcc.ch/nonun.htm).

2.2.2 China

Outreach in China consisted of a two-day seminar for 140 high level policy makers, students, industry, international organisations and multinational corporations, media, representatives of foreign embassies, government representatives and researchers from seven cities. It involved two institutions, the Research Center for Sustainable Development of the Chinese Academy of Social Sciences (CASS, Dr. Jiahua Pan, website: www.iwep.org.cn, email: panjh@163bj.com) and the Energy Research Institute (ERI) of the State Development and Planning Commission (SDPC, Dr. Kejun Jiang, website: www.ccchina.gov.cn/indexl.htm, email: kjiang@eri.org.cn). Rich discussions were held on the Clean Development Mechanism (CDM), on the link between sustainable development and climate and the need to improve regional scenarios for the IPCC. Equity concerns of climate change, impacts of climate change on the Chinese economy, and challenges and opportunities for climate change mitigation in China were the main issues discussed. Local organisers translated into Chinese the SPM of the TAR-WGIII and elaborated a summarised report in Chinese intending to provide a complete picture of climate change mitigation issues relevant to China but with an emphasis on a sustainable development-oriented response to climate change. Some findings of the IPCC WGI and WGII reports were also included providing some background information for climate change mitigation. The outcomes and proceedings of the workshop are available through the following links: http://www.iwep.org.cn/english/index.htm and www.ccchina.gov.cn/indexl.htm.

2.2.3 Cuba

Outreach activities consisted of a regional workshop for 71 policy makers, academia, industry, NGOs and national experts. It involved two institutions as local organizers, the National Team on Climate Change of Cuba based on the Institute of Meteorology (Abel Centella, website: www.met.inf.cu, email abel@mail.met.inf.cu) and the Centre for World Economy Studies (CIEM, Ramon Pichs, email: rpichs@ciem.cu**).** Nine regional experts from other Caribbean states and Mexico attended the workshop with separate UNDP funding (Havana office). Discussions were held, inter alia, on the need to develop regional scenarios for Latin America, on the capabilities of the countries of the Caribbean region in dealing with climate change and the importance of a regional cooperation in these areas. The audience was particularly interested in the discussions related to alternative energy sources (notably sugarcane), regional scenarios for Latin America and a model – PRODOM – that calculates costs of mitigation. A questionnaire was distributed among the participants to evaluate how they use the IPCC information and the usefulness of the subjects covered by the seminar. The workshop materials are available electronically at the website: http://www.onu.org.cu/havanarisk/eventos/cchange4/evento.html.

2.2.4 India

Outreach in India consisted of a two-day workshop for 51 middle level government decision-makers, NGOs and business representatives. It involved one institution, the Tata Energy Research Institute (TERI, Preety Bandhari, website: http://www.teriin.org/, email: preety@teri.res.in). Interesting discussions were held, inter alia, on the need to enhance the benefits of climate change efforts by associating them with the broad social developmental

objectives in various sectors of the society. This seminar was a good opportunity for stakeholders to interact and to exchange views on national experiences in implementing mitigation. The presentations of this workshop are available at the following website: http://www.teriin.org/events/docs/ipccWGIII.htm

2.2.5 Russian Federation

Outreach in Russia consisted of a three-day seminar for 150 participants representing the government, academic institutions, the private sector, NGOs, international organisations and regional environmental centres. It involved one organizing institution Eco-Accord (Olga Speranskaya, website : http://accord.cis.lead.org, email: speransk@ntserver.cis.lead.org). The local organisers translated into Russian the IPCC power point presentations available on the IPCC website and published in Russian a summary analysis of the findings of the TAR-WGIII for countries with economies in transition. Among other issues, this seminar indicated that there is a lack of material on climate change in Russian to make a wider dissemination of the IPCC reports possible. The participants reviewed the opportunities for applying the IPCC findings in Russia and other New Independent States for decision-making on mitigation of climate change. A press conference was held. The proceedings of this workshop and this brochure are available at a website through the following link: http://accord.cis.lead.org/sem2002/climate.pdf.

2.2.6 Sri Lanka

Outreach in Sri Lanka consisted of a series of seminars for in total 697 participants in different provinces. It involved two institutions LIFE-MIND (Prof. Mohan Munasinghe, http://www.geocities.com/mindweblanka/, email: Mind@slt.Lk or munasinghe@eureka.lk) and the Centre for Climate Change Studies (CCCS) of the Department of Meteorology (Mr. N. Amaradasa, website www.meteo.slt.lk, email: meteo@slt.lk). These seminars aimed at reaching different levels of policy makers and administrators, personnel of printed and electronic media, the middle level of the scientific community, the private sector, NGOs, planners and researchers. The seminars provided general information on climate change and focused mainly on technological options, sustainable development, vulnerability, and mitigation and adaptation issues. Local organisers plan to develop an analytical tool for the policy analysts and decision-makers for development planning at different levels to identify the most critical points where policy, technological, financial and institutional interventions are needed to cope with problems arising from climate change. Detailed information about these activities is available at the following website: http://www.meteo.slt.lk/cccs.html.

2.2.7 Tanzania

The Centre for Energy, Environment, Science and Technology Foundation (CEEST, Hubert Meena, website: www.ceest.com, email: ceest@intafrica.com) carried out a two-day workshop for 52 participants from government, non-governmental and research institutions. A press conference was held and was conducted in English and Kiswahili languages. The discussions linked the IPCC information to the local circumstances. The main subjects of interest of the audience were the IPCC findings on mitigation and sustainable development and the link with the on-going climate change negotiations; CDM; transportation and technology transfer. The proceedings and the presentations of the seminar are both available at the following links respectively: http://www.ceest.com/ipccworkshop.pdf and http://www.ceest.com/powerpoint/powerpoint.html.

3 The role of the speakers and the profile of the audience

3.1 The role of the speakers

In all the seminars, authors of the IPCC reports played a double important role. Almost exclusively, IPCC lead authors and/or Bureau members from the region were involved. They represented a credible scientific voice on the contents of the IPCC reports and they linked the main findings of the reports to the local interest and concerns. Local speakers not previously involved in the IPCC reports but working on climate change issues also played an important role. Their presence allowed the participants to know what was in fact being done on climate change in their own countries. This mix of speakers was a successful formula to target the discussions on the local contexts and increase the awareness on climate change. Above all this mix turned out to be an effective method to clarify for the different audiences what the scientific consensus on climate change was, but also the gaps in knowledge and the need of future research. It has helped to clarify the link between the IPCC scientific assessment and on-going negotiations (such as those on climate change in the context of the UNFCCC and the 2002 Johannesburg World Summit on Sustainable Development), i.e. how the IPCC reports are or can be used for policy development by their governments. Since the IPCC needs to ensure the high quality of IPCC products, it is important to safeguard the strong reputation of the IPCC as an organization that produces policy-relevant but not policy-prescriptive scientific assessments. This is also an important goal to have in mind, while selecting suitable speakers for the IPCC outreach seminars.

The right balance between speakers resulted to be crucial for the effectiveness of the seminars. Too many IPCC authors, who are not local speakers may imply too abstract presentations, which in turn may result in difficulty for the audience not familiar with the IPCC reports. The audience may not understand how the IPCC reports relate to their local circumstances. On the other hand, too many local speakers not involved in previous IPCC reports may lead presentations and discussions too far away from the main findings of the IPCC reports. It is recommended to find local speakers or regional speakers previously familiar with the IPCC reports, who can adequately present the main results of the IPCC findings which are relevant in the region or country.

3.2 The profile of the audience

In all the seminars, various representatives from academia, researchers, NGOs, and notably governmental were involved. In general terms, the audiences had low to medium familiarity with the discussions on climate change. Only a few had an in-depth knowledge of climate change and for some it was the first time they had the opportunity to discuss this issue in detail. Thus, the IPCC WGIII outreach seminars appeared quite essential for further understanding the findings of the reports in the various target countries. In Cuba, more than 75% of the participants had a low-medium level of familiarity with the IPCC reports before the workshop. In Tanzania and in Sri Lanka, a need to disseminate popular booklets of the IPCC reports locally was identified. Some participants had no previous knowledge of the IPCC climate change assessments. Some participants felt that the discussions were too academic because they had difficulties following the discussions. Therefore, different materials are necessary in order to meet the needs of these diverse levels of the audience. Most of the participants use climate change concepts in their work. For some the media was identified as a key tool for awareness campaigns and for translating the complicated IPCC

reports into simple language for the public. In addition, most of the audience came from the city where the seminars took place. Therefore, it would be necessary to hold seminars in different cities to broaden the awareness campaign. In general terms, most of the participants worked in energy research activities, or in the decision-making processes on energy issues and not only with climate change.

4 The subjects covered and the main interest of the audience

In general, presentations focused on the IPCC WGIII findings, linking them to local concerns and the gaps in knowledge. Especially the lack of regional In general, presentations focused on the IPCC WGIII findings, linking them to scenarios and the need of research in this area, technology transfer issues, the potential local implications related to the use of the Clean Development Mechanism, concerns about sustainable development, practical experiences through case studies, and the need to reinforce capacity building were some main points of interest of the audience. Another point of interest was the link of the IPCC reports with international environmental negotiations, such as those in the context of the UNFCCC.

	Link with environ-mental organizations	**Some main discussion items**
Brazil	Climate Change	CDM, regional scenarios, technological transfer, implication at the national level, sustainability
China	Climate Change World Summit	CDM, equity, sustainability, mitigation, technology transfer
Cuba	Climate Change World Summit	Sustainability, regional scenarios, financial mechanisms
India	Climate Change World Summit	CDM , scenarios, technological transfer, implications of the climate change negotiations, sustainability, P&M, financial resources for local initiatives
Russian Fed.	Climate Change	Implications of the climate change negotiations, ratification, financial mechanism, awareness campaign
Sri Lanka	Climate Change	Models results, CDM, Climate change negotiations implications, financial mechanisms, adaptation and vulnerability issues, sustainability
Tanzania	Climate Change	Financial mechanisms and CDM, capacity building, linkage between poverty and energy, adaptation and mitigation concern

Some discussions were about the linkage between climate change and development notably poverty and equity issues. The outreach seminars were a good opportunity for exchange of information and possible future co-operation between the stakeholders in the various countries.

5 Suggestions from the local organizers

Some participants suggested that future outreach activities should start at an earlier time in the IPCC assessment process, including during the development process of the fourth assessment of the IPCC - IPCC AR4 - and to keep doing awareness workshops. While such activities could build on published IPCC reports, they would also provide a platform to identify expertise and views from developing countries and economies in transition that could be relevant for the AR4 and further improve its quality and relevance. All the seminars were held in main cities and therefore only a partial section of policymakers could be targeted. Similar workshops could be planned in various parts of a country targeting other levels of policy makers and stakeholders. The outreach seminars were a useful platform to make the IPCC information available and to understand how the local stakeholders look at it. Workshops resulted to be a useful tool to encourage research in developing countries.

The workshops may help local stakeholders to design recommendations to prepare action plans related to vulnerability reduction, impacts, adaptation and mitigation issues and link these to national sustainable development objectives and priorities. Outreach seminars may help prioritise climate change research issues in relation to sustainable development. More focus could be given to lower levels of policy makers who know much less about climate change and the IPCC reports.

The seminars showed that there is a strong demand for popularized booklets based on IPCC assessments and other materials on climate change according to national/regional needs in the local languages. Popular booklets could be made available into local languages, since many policy makers and some researchers do not (easily) read English. More attention should be paid to the role of translation of the IPCC reports into local languages; availability of materials through events, brochures, CDs and in electronic format. An idea could be to focus outreach activities on improving the accessibility of the IPCC information for target groups or subjects. With the support of the IPCC, UNEP may play an important role in preparing these popular booklets. During the WG3 outreach programme, such popular booklets were available for the SRTT (developed by UNEP Paris), but similar booklets for the TAR were only finalized after most of the workshops had been held. Copies were distributed to the participants only then. Responding to the demand, still later, these booklets were translated into the main UN languages by UNEP with IPCC WGIII support.

In general, participants appreciated hard copies of reports and summaries more than the CD-ROMs depending on their access to computers. Some suggested that the IPCC reports should be distributed to the audience before the workshop for a better focus on the discussion. If this would be realised, more time would be needed to implement outreach activities.

Some local organizers have suggested that a deeper involvement of the industry should be sought in future outreach seminars. Private sector expertise is needed to develop up-to-date assessment of mitigation options in various sectors.

It would be useful to have the following set of presentations generally available in future outreach seminars: an overview of the link between scientific assessment and the political climate change negotiations; and an overview of the results of the WGI and II and III reports relevant for the region concerned. Because of WGIII funding, the workshops focused on WGIII reports, with some, but limited attention to the WGI and WGII issues. In the future

outreach activities covering all Working Groups would be useful. This would require funding being available for all three WGs. A separate session for each working group and an updated overview of regional scenarios and any other subject that would be the main interest of the country/region is recommended.

Participants expressed their interest in increasing the frequency of awareness workshops as a tool for capacity building of their experts on climate change issues. In big countries, workshops in different towns should be a future tool to implement outreach activities. Considering that the IPCC reports do not always reach the right people or those who already work on outreach in their own countries, there is a need to think about ways to identify and involve the appropriate persons and institutions. This could be done for instance by announcing in the climate change list and/or in any national climate change discussion list (such as the Brazilian Forum on Climate http://www.forumclimabr.org.br/index.asp) that may exist in different countries. The IPCC Bureau Members could be more actively involved in indicating main research institutions and climate/environmental list in their countries to be informed about a future call for proposal for outreach activities.

The WGIII outreach workshops have shown that the IPCC reports are used by policy makers and the academic community, but are too complicated to reach a broader audience of the civil society. There is a sense (derived from the requests for materials received and from the evaluation made by the local organizers) that the envisaged main target audience, climate change policy makers in the governments and private sectors do need different types of materials, including popularized booklets. The SPM's and the TS's are used, but the underlying reports appear to be too complicated for lower levels of policy makers. They seem to be primarily of interest as standard book by researchers, teachers and students.

6 Discussion and recommendations for future outreach activities

Based on the seven outreach project experiences, below we address the main points of the WGIII evaluation and summarize key recommendations for future IPCC outreach activities and communication strategies in four areas: general issues (6.1), the start of the programme and criteria for the selection of proposals (6.2), the implementation such as the IPCC support to local organisers (Trust Fund, availability of materials in different languages) (6.3) and the IPCC outreach policy in general (6.4).

6.1 Before starting the programme: criteria for selection of proposals

Regional coverage

Considering the set of criteria used for the selection of outreach projects, in hindsight, most of these have been met. As for the equitable distribution of available funds between all regions, only Africa was underrepresented. From the 20 initial proposals received for outreach, six were for projects in Africa, but most of these did not meet the criteria[8]. Because of the specific circumstances, outreach in Africa would need to have a focus on regional or adaptation issues or national communication strategies to reach a broader audience and to be eligible for outreach funding. Of the 20 proposals received, three were for outreach in Latin America (one which regional scope with a additional, separate UNDP funding), which were all selected (two proposals were combined into one joint project). The rest of the developing country proposals was for Asia of which two with a regional scope (again demanding resources beyond what was available).

Competing or joint project proposals

Eight competing projects were received for specific countries. Usually these had a complementary scope and therefore project proponents were suggested to resubmit joint proposals for better cost-effectiveness. Only two institutions did not resubmit a joint proposal. Co-operation turned out to be useful to allow more institutions to be involved in doing outreach and to reach a broader audience. However, in one case three institutions were involved based in different cities, which made on the one hand a wider coverage possible, but also made communication and administration more complex. Even if collaboration resulted to be fruitful in most cases, institutions were sometimes not enthusiastic about the request initially. For future programmes, it is recommended to explicitly encourage joint project proposals in the call for proposals and mention the possible request for co-operation in case of competing proposals. Depending on the funds available and the nature of the proposals, the funding agency may wish to put the competing proponents in contact; if agreement on co-operation cannot be reached, one out of the competing proposals will be selected. It has to be taken into account that co-ordination of a joint proposal can lead to a a few months of delay with the start of the outreach activities since the proponents would have to agree on the sharing of responsibilities and tasks.

[8] B-27/INF.2 and FCCC/SBSTA/2002/CRP.3/Rev.1 June 2002

Coverage of stakeholders

The moderate familiarity of the participants with the subjects covered shows that these seminars has helped to enhance their knowledge or developing the technical skills and institutional capability to enable them to participate more actively in the international discussions on climate change. A greater diversity of participants may imply less advance familiarity with the IPCC and its reports and hence a different type of (popular) materials and (local) presentations may be required.

Target public

Different audiences have an interest in IPCC information and could therefore be targeted. WGIII aimed at representatives from NGOs, policy makers, researchers and academia, and business, with at least some technical expertise in the associated areas, and for whom the information is relevant for their work. This requires different types of materials and would imply different levels of discussion at seminars. Generally, we do not consider students, school children and the general public as audience for IPCC outreach activities. Nevertheless, IPCC outreach activities could be accompanied by short briefings for the press or the interested public, making use of the availability of IPCC experts in a country. Different types of workshops or sessions in a workshop could be foreseen (technical sessions for scientists and climate change policy makers, general overview of the main issues for non-experts). In many countries, NGOs play an important role in diffusing climate change information, and can be involved in the activities. However, NGOs generally have an interest in advocacy, an activity with the risk to move the outreach beyond the diffusion of the neutral IPCC reports. On the other hand, through NGO involvement in outreach different (and broader) audiences could be reached. Involving NGOs, a balance should be sought, and a clear distinction between the neutral IPCC information and the NGO interpretation is required.

Financial resources

Adequate regional distribution of available resources should be the basis for the selection of any proposal, as much as possible. This is an important criterion, as the different capabilities of the proponent should not imply to hold seminars only in a few regions or countries. If local organizers would know in advance that the financial resources would be distributed, they might probably submit joint proposals to raise the possibility of being selected.

At the onset of the programme, it is important to evaluate the availability of additional funding opportunities. In the WGIII programme, it was assumed that resource persons from developed countries would cover their own costs. It was arranged that travel and subsistence costs of IPCC experts from developing countries as speakers in the outreach seminars was supported by the IPCC Trust Fund. While due to the limited extent of the programme this could be arranged in an ad hoc manner. For a broader programme covering all Working Groups explicit allocation of funds in the IPCC budget would be required. This would allow for a broad participation of speakers from different developing regions in future outreach seminars. This will show a commitment of the IPCC as a whole in doing outreach and will avoid the unbalanced situation of outreach by only one Working Group. In addition to this, additional funds could be identified through ongoing multilateral (e.g., UNDP) or bilateral programmes, as was arranged in the WGIII Caribbean workshop. Evidently, local in-kind or financial support can contribute to the success of the activities and increase the commitment of the local organizers.

Cost-effectiveness of projects
The seminars have shown that there are different ways to implement outreach activities. Though the efforts made to adapt the proposals to the funds available (including the in-kind support provided by different institutions including the local organizers), the result for the cost-effectiveness in terms of number of participants reached per unit of funding varied. The WGIII outreach programme has provided experience that may help to increase cost-effectiveness in the future, both in terms of people reached and quality of the efforts. For example, to reach different levels of policy makers (and hence a broader audience) different types of materials are needed and by preparing those in advance and tailoring them to the needs of the participants, the effectiveness can be improved.

In general, the presentations successfully made a link of the IPCC findings to the local circumstances, including the development of local materials and the availability of the proceedings to a wider audience via websites. However, the results vary with respect to the application of IPCC findings in the local context, e.g., developing plans for follow-up activities to maximize effectiveness for the longer term. We consider outreach activities to be more effective if they are part of ongoing efforts in the area of capacity building, such as linking outreach to the obligatory UNFCCC national communications of the countries involved.

On-going and future activities
The link of the proposal with on-going activities is an important requirement. This ensures involving a public interested in climate change, a relevant proposal for the country and broadening the scope of the existing national capacity building efforts.

Related to the above, the possibility of future activities is another important requirement; this ensures that outreach is not an incidental event. Local organizers may benefit better of the awareness seminars to prioritise their actions in climate change notably research needs and capacity building.

6.2 Running the programme: recommendations for the implementation phase

Speakers
In general, speakers should be a combination between IPCC experts proposed by either the local organizers or the IPCC organizers, and local experts and policy makers proposed by the local organizers. In the WGIII programme, speakers proposed by the local organizers were discussed with the TSU to achieve a proper balance meeting the programmes objectives. The involvement of IPCC authors from the country or region itself and/or of other speakers conversant in the local language (not needing translation) should receive priority when selecting potential speakers. This allows a better participation of the audience. The IPCC speakers need to have been previously involved in the writing of the IPCC reports, willing to disseminate the IPCC findings and to make the link with the national interests. The agreement between the TSU and the local organizers on the choice of these IPCC authors is an important requirement to reach these objectives as much as possible. Speakers familiar with the climate change debate, with the IPCC reports or other international negotiation process relevant to the country can meet the needs of the audience. After selecting the speakers, local organisers should inform the speakers beforehand about the potential level of the audience. This would allow them to prepare their presentations accordingly.

TSU support materials
The distribution of materials (reports, CDs, summary brochures) was an important tool for the participants. It increased the interest, the transparency of the message and gave the impression that the outreach programme was an important activity for the IPCC. Not all local organisers have time or resources to prepare targeted local materials, or may be insufficiently familiar with the IPCC reports. Therefore, making reference of the IPCC website is not enough as a source of information for the participants. A list of available materials (and language in which they are available) should be made available to the local organizers to choose which materials they would prefer to hand out. Timing of sending materials is important, taking into account possible delays by local customs requirements for (large amount of) materials[9].

At the time of the WGIII outreach programme, translations of the TAR were not yet available, neither were popular booklets in different UN language languages. Currently, more of these materials are available from IPCC (translations of summaries) and UNEP (popular guides) for new TAR-based outreach activities. For the AR4, it is recommended to have the official translations, popular guides and agreed presentations ready for outreach as soon as possible after the publication of the main reports. Outreach proposals that include elaboration of popularized national/oriented booklets beyond the IPCC and UNEP materials, e.g. in non-UN languages, may receive special attention/priority, because these materials can be used more widely. Materials from the UNFCCC Secretariat can provide complementary information.

6.3 Possible implications for the IPCC communication strategy

What have we learned from the experiences in doing outreach in developing countries and in economies in transition? The main lesson is the following: we have learnt that there is a strong, real, and largely unmet demand for IPCC information materials and outreach events tailored to the specific needs of various audiences around the world. We have also learnt that the IPCC can be effectively involved in raising awareness about climate change, its impacts and possible responses to it, by sharing the neutral information of its assessment reports in different ways. One of these is to mobilize its large base of experts (lead authors) to serve as local speakers in outreach seminars. Another important avenue towards effective outreach is the timely availability of IPCC materials in local languages, starting with the six UN languages. The IPCC is a relatively small organisation, essentially with a mandate to undertake scientific assessments in support of the climate policy process and not so much explicitly to raise awareness. However, the two are closely related: experts and policy makers from developing countries and economies in transition who are familiar with the background and substance of the IPCC reports can more effectively participate in climate change research and climate policy development. IPCC therefore could increase its efforts within the limitations of the available resources and partnerships to implement an effective outreach programme in developing countries, contributing to a broader and stronger research basis for its future assessments.

Co-sponsoring outreach seminars
A non-negligeable amount of financial resources in the IPCC budget and/or in the TSU budgets would be needed for outreach not only after but also during the assessments. These funds are needed to finance travel and subsistence of local and sometimes international

[9] IPCC-XVII/Doc.6, April 2001

experts during outreach seminars, preparation of meeting materials, logistic and coordination activities, and follow-up. A combination of funds from IPCC, international organizations and local sources can stimulate that the outreach efforts are embedded in the future climate change research and policy development plans of the countries concerned. While IPCC could take a leading role, initiating outreach activities, it can also support activities organized by other institutions by providing technical expertise and available information materials.

Increasing role of focal points

The IPCC focal points could play a more active role in outreach. They could indicate names of main academic and research institutions in the area of climate change in their countries which can be involved in organizing events or participate in them, and to whom information materials could be sent. They might help identifying names of institutions in their country or region already involved in similar outreach activities. In the future, these names could be used in the distribution of a call for proposal for outreach activities and to disseminate the IPCC reports and popular booklets. These institutions could be contacted exploring further possibilities for partnerships in awareness and information campaigns notably in preparing nationally focused materials and co- sponsoring future outreach seminars.

IPCC website, handouts of IPCC materials and translations

It is recommended to develop a database of people requesting copies of particular materials to identify the users of the IPCC materials (to get a better picture of the actual user groups, enabling more focused outreach activities in the future). This may require a more active operation of the IPCC website, making it more interactive with the public, making use of new tools. For example, a suggestion would be to create a web page for most frequently asked questions about the IPCC or the IPCC findings in different languages, with simple explanations (possibly in collaboration with UNEP). The search facility for IPCC reports on the web could be further improved, e.g. search tools by themes could be an additional option. A link to specific sites where popularized materials based on IPCC reports can be found could be made. The IPCC reports and derived UNEP and other booklets should receive a systematic evaluation of the perceived usefulness and effectiveness, e.g. by making enquiries and surveys through the IPCC website (and of course in the outreach workshops) or through targeted questionnaires. Considering the difficulty in reading in English, an effective awareness campaign for the IPCC would imply a more diverse use of the IPCC website in the various UN languages, linked to the sites of the various Working Groups, which also could consider having the main information in the different languages.

The policy for distribution of materials for free and upon request is very important for raising awareness in developing countries. That policy however could be revised by adding a more active component to it. A nationally–oriented policy could be implemented, notably distributing the materials actively (not only on request) to the main research and academic institutions in developing countries, including main library systems. A combined policy for distribution of materials with UNEP could be more effective to reach different levels of audiences. The IPCC's primary mandate centres on the information needs of the UN Conventions addressing climate change issues that require scientific and/or technical assessment. Currently the UNFCCC is the key body addressing climate change issues and in general the TAR is used as reference documents for informing the deliberations on agenda items of the COP and its subsidiary bodies[10]. The IPCC materials may also be disseminated

[10] B-27/INF.2 and FCCC/SBSTA/2002/CRP.3/Rev.1 June 2002

during other negotiations such as the biodiversity and desertification negotiations. However, the distribution of materials during the UN negotiations is still a very limited way of disseminating IPCC information on climate change. It does not cover the much larger potential of users of the IPCC reports around the world.

Increasing the partnership with other organizations such as UNEP

It would be more effective for an outreach campaign if the IPCC strengthens its partnership with international organizations such as UNEP in preparing popularized materials based on the IPCC assessments to reach beyond the main IPCC audience of climate change policy makers and researchers. Similar to the childrens' version of UNEP's Environmental Outlook Report, targeted (to schools, industry, etc.) publications could be derived from the TAR by organizations other than IPCC. Individuals involved in writing IPCC reports and Bureau members may provide guidance and assist informal review of the material prepared by UNEP and other organizations. Something similar applies to media products such as radio programmes, TV and national newspapers, reaching also those, who do not have access to Internet.

So far, in 2002, the TSU-WGIII was the only group that had supported the development of popular booklets by UNEP. Communications from various countries suggest that such booklets would be very useful for the other Working Group reports as well. These will not be IPCC publications, even though the material contained would emanate from IPCC reports[11]. In popular publications a disclaimer should be included[12]. If done, this would be in line with recent discussions held in the Bureau[13]. The IPCC has discussed the need to work with other agencies that popularize its outputs. It has also discussed the possibility of experts involved in the IPCC process informally proof the resulting material, avoiding formal IPCC involvement. Documents prepared this way should have an IPCC disclaimer attached.

General conclusions

Several (and important) improvements have to be implemented to make an IPCC outreach programme more effective. The series of outreach seminars held in 2002 have indicated some main directions for a new round of outreach activities in the scope of the IPCC. The primary and target audiences for the IPCC outreach activities are proposed to be researchers, academia, the private sector, different levels of policy makers and the NGOs community. Considering that the most extensive usage of the IPCC assessments appears to be by researchers and technical policy advisors, a specific strategy to donate materials to these groups in developing countries and economies in transition could be implemented, including main universities or research centres in developing countries that already implement activities in climate change.

The strategies that we have proposed on the basis as a result of the IPCC WGIII outreach experiences address criteria to select local organizers, to reach the right audience and to maximize the cost-effectiveness of the activities. Involving IPCC and local speakers in outreach activities not only after the finalization of assessments but also during the development of new reports – disseminating the information from the previously published reports - is an attractive and interesting approach that could help identifying promising young researchers and help increasing the participation of developing countries experts in the IPCC reports. There is a demand to hold outreach seminars in different regions inside large

[11] IPCC-XVII/Doc.6, April 2001
[12] Report of the 24 session of the IPCC Bureau, December 2001
[13] Report of the 25 session of the IPCC Bureau, April 2002

countries, which the current, limited WGIII programme could not address. A more extensive programme could involve different local problems and different local stakeholders. There is also an unmet demand for regional workshops, allowing for exchange of views and information across countries in a particular region. However, regional workshops are expensive because of the travel costs involved, and lack of or weakness of regional institutions may risk the outreach becoming an incidental event. Such activities can be effective if integrated in an existing regional programme, as demonstrated by our experience with the outreach regional workshop held in Cuba.

Appendix 1 Outreach Reports

This appendix contains the reports of the outreach seminars of the 7 countries. The reports are shown in the following 7 annexes.

1. ***Outreach Report Brazil***
   1a. Report of Outreach July 2002
   1b. Report of Outreach December 2002
   1c. Follow-up Project Report

2. ***Outreach Report Cuba***

3. ***Outreach Report India***

4. ***Outreach Report Russian Federation***

5. ***Outreach Report Sri Lanka***

6. ***Outreach Report Tanzania***

7. ***Outreach Report China***

Appendix 1.1 Outreach Report Brazil

Appendix 1.1.a Summary of Results of First Seminar of the IPCC WGIII Outreach Project – Brazil

Basic Data
Date: 5th of July, 2002
Location: Trainning Center of the Banco Nacional de Desenvolvimento – BNDES, Auditorium Reginaldo Treiger, Rio de Janeiro – RJ – Brasil
Time: From 9:30 a.m. to 6:00 p.m.

Number of Total Participants: 143
Number of Team Member Participants[14]: 29
Participants Excluding Team Members: 114
Number of Surveys collected: 63

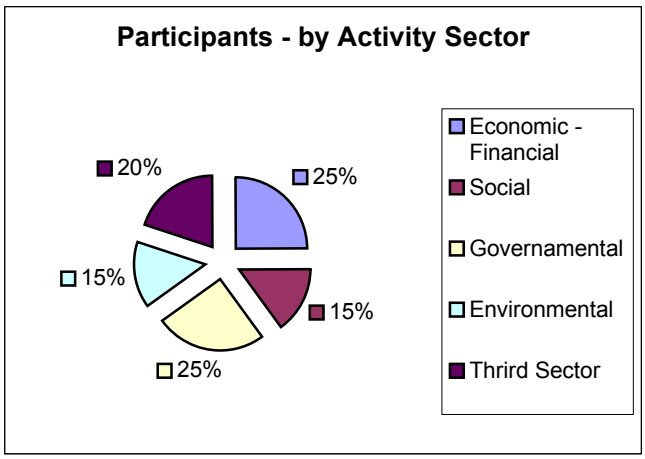
Overview of the Seminar

- Location and facilities

The Seminar took place in down town of Rio de Janeiro City, in the BNDES auditorium, which has seats for 128 people. This auditorium was ceased to Centro Clima by BNDES, almost 3 months before the date of seminar. Facilities there are excellent. Coffee-breaks and lunch were served to all participants in a foyer just besides the auditorium.

- Public

The Seminar were started around 9:30 and was very well attended through to the end, with a relatively low attrition rate at the end of the day (between 5:00 and 6:00 p.m., when the event ended), despite the fact that it was a Friday and many of the participants had come from outside of RJ. There was a good representation of various areas of Economic, Social (educational), Environmental and Government activities, of public and private sectors, as well as the Third Sector, both private and public.



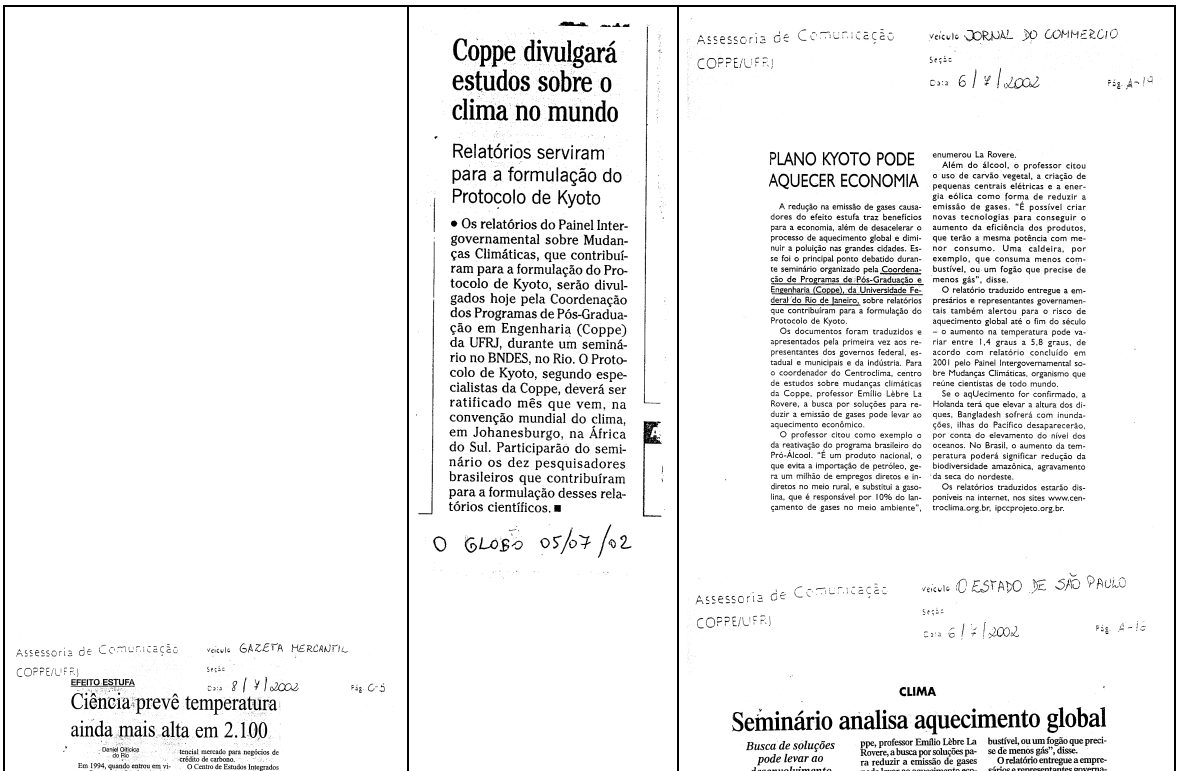
- Press - Media

The Media was also present at the seminar where different interviews were given by the speakers. From Centro Clima, Prof. Emilio Lebre La Rovere gave interview to: Gazeta

[14] Members of CentroClima or COPPE/UFRJ, CENBIO, BRASUS and IPCC

Mercantil newspaper, Estado de São Paulo newspaper, 10 min on line to CBN National Radio Channel. As a result of the COPPE Press Agency work, the seminar was also in the spot in O Globo newspaper and Jornal do Comércio newpaper. The environmental magazines: Ecologia e Desenvolvimento, Almanaque do Meio Ambiente and the Centro Clima internet site.

- Brazilian Press Clipping



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EFEITO ESTUFA

Ciência prevê temperatura ainda mais alta em 2.100

Daniel Ofício do Rio

Em 1994, quando entrou em vigor a Convenção Quadro das Nações Unidas sobre Mudanças do Clima, os cientistas previam que até 2100 a temperatura da Terra aumentaria entre 1ºC e 3,5ºC. O Painel Intergovernamental sobre Mudanças Climáticas (IPCC) divulgou na última sexta-feira, no Rio de Janeiro, um relatório com nova previsão: até o fim do século, o Planeta estará entre 1,4ºC e 5,8ºC mais quente.

Um ano e meio depois de concluído o relatório final do Grupo de Trabalho III do IPCC, que serve de base nas negociações para a elaboração do Protocolo de Quioto, o Brasil começa a conhecer as conclusões sobre os efeitos de emissão de gases na atmosfera e as várias alternativas e propostas para sua redução.

Antes restrito à comunidade acadêmica, que acompanha mais de perto a discussão, o documento elaborado em conjunto por mais de 30 países, ganhou uma versão resumida em português e está sendo apresentado aos setores industriais, financeiros, científicos e de organizações não governamentais (ONGs).

O início do MDL

Mais do que incentivar a participação brasileira nos programas de redução de emissão de gases na atmosfera, o objetivo dos integrantes do IPCC é ajudar no desenvolvimento de projetos que podem transformar o Brasil em um participante ativo do Mecanismo de Desenvolvimento Limpo (MDL). O Mecanismo será implantado logo após a validação de Quioto, prevista pelos ambientalistas para setembro deste ano.

Por meio do MDL, países que tenham compromisso de redução de emissão de gases de efeito estufa — na maior parte desenvolvidos, listados no Anexo 1 da Convenção Quadro das Nações Unidas sobre Mudanças Climáticas — poderão adquirir certificados de emissões reduzidas (ou chamados créditos de carbono) nos países em desenvolvimento, que implantam projetos de redução dessas emissões. O Brasil é visto pela comunidade internacional como um potencial mercado para negócios de crédito de carbono.

> Até o fim do século, o Planeta estará entre 1,4ºC e 5,8ºC mais quente

O Centro de Estudos Integrados sobre Meio Ambiente e Mudanças Climáticas — Centro Clima, da Coppe/UFRJ — finalizou o documento que contém os critérios de avaliação e quantificação de iniciativas que reduzam a emissão de gases de efeito estufa. "Criamos os mecanismos que garantirão aos projetos a certificação de redução de emissão. Agora é a vez do sociedade se mobilizar para tirar proveito da criação desse mecanismo", afirma o professor Emilio Lèbre La Rovere, coordenador executivo do Centro Clima, da Coppe.

Projetos em curso

Grupos de trabalho, com representantes dos setores industriais, agro-florestas e de governos municipais, estão sendo formados para ajudar a difundir os benefícios que os projetos de MDL poderiam propiciar. Algumas iniciativas isoladas já existem, como na área de reflorestamento. O Projeto Plantar, em Minas Gerais, incentiva o plantio de árvores para fornecer carvão vegetal à indústria siderúrgica, em substituição ao carvão mineral, cujos efeitos negativos na atmosfera são maiores. "Há também iniciativas na área de fontes alternativas de energia, como a do uso da casca de arroz no Sul do Brasil. No entanto é preciso incentivar as iniciativas", afirma La Rovere.

No Brasil, assim como em diversos outros países, uma série de dificuldades precisam ser vencidas. As desigualdades entre nações ricas e pobres e o consequente entrave para a formulação de políticas — quem mais polui é quem mais consome — também é verificada no âmbito interno dos países. "Existem enormes dificuldades nas negociações em função das desigualdades. No Brasil, 10% da população consome o triplo de combustível, por exemplo, ajuste 90% da população fica no transporte coletivo de passageiros. Será justo que as parcelas de mais alto consumo sejam protegidas por que vivem em países subdesenvolvidos? É preciso inverter esta lógica. O Brasil é visto pela comunidade internacional como um potencial mercado para negócios de crédito de carbono", afirma Luiz Pinguelli Rosa, diretor da Coppe/UFRJ.

Coppe divulgará estudos sobre o clima no mundo

Relatórios serviram para a formulação do Protocolo de Kyoto

• Os relatórios do Painel Intergovernamental sobre Mudanças Climáticas, que contribuíram para a formulação do Protocolo de Kyoto, serão divulgados hoje pela Coordenação dos Programas de Pós-Graduação em Engenharia (Coppe) da UFRJ, durante um seminário no BNDES, no Rio. O Protocolo de Kyoto, segundo especialistas da Coppe, deverá ser ratificado mês que vem, na convenção mundial do clima, em Johanesburgo, na África do Sul. Participarão do seminário os dez pesquisadores brasileiros que contribuíram para a formulação desses relatórios científicos. ■

O GLOBO 05/07/02

Assessoria de Comunicação COPPE/UFRJ — Veículo JORNAL DO COMMERCIO — Seção — Data 6/7/2002 — Pág A-12

PLANO KYOTO PODE AQUECER ECONOMIA

A redução na emissão de gases causadores do efeito estufa traz benefícios para a economia, além de desacelerar o processo de aquecimento global e diminuir a poluição nas grandes cidades. Esse foi o principal ponto debatido durante seminário organizado pela Coordenação de Programas de Pós-Graduação e Engenharia (Coppe), da Universidade Federal do Rio de Janeiro, sobre relatórios que contribuíram para a formulação do Protocolo de Kyoto.

Os documentos foram traduzidos e apresentados pela primeira vez aos representantes dos governos federal, estadual e municipais e da indústria. Para o coordenador do Centroclima, centro de estudos sobre mudanças climáticas da Coppe, professor Emílio Lèbre La Rovere, a busca por soluções para reduzir a emissão de gases pode levar ao aquecimento econômico.

O professor citou como exemplo o da reativação do programa brasileiro do Pró-Álcool. "É um produto nacional, o que evita a importação de petróleo, gera um milhão de empregos diretos e indiretos no meio rural, e substitui a gasolina, que é responsável por 10% do lançamento de gases no meio ambiente", enumerou La Rovere.

Além do álcool, o professor citou o uso de carvão vegetal, a criação de pequenas centrais elétricas e a energia eólica como forma de reduzir a emissão de gases. "É possível criar novas tecnologias para conseguir o aumento da eficiência dos produtos, que terão a mesma potência com menor consumo. Uma caldeira, por exemplo, que consuma menos combustível, ou um fogão que precise de menos gás", disse.

O relatório traduzido entregue a empresários e representantes governamentais também alertou para o risco de aquecimento global até o fim do século – o aumento na temperatura pode variar entre 1,4 graus a 5,8 graus, de acordo com relatório concluído em 2001 pelo Painel Intergovernamental sobre Mudanças Climáticas, organismo que reúne cientistas de todo mundo.

Se o aqUecimento for confirmado, a Holanda terá que elevar a altura dos diques, Bangladesh sofrerá com inundações, ilhas do Pacífico desaparecerão, por conta do elevamento do nível dos oceanos. No Brasil, o aumento da temperatura poderá significar redução da biodiversidade amazônica, agravamento da seca do nordeste.

Os relatórios traduzidos estarão disponíveis na internet, nos sites www.centroclima.org.br, ipccprojeto.org.br.

Assessoria de Comunicação COPPE/UFRJ — Veículo O ESTADO DE SÃO PAULO — Seção — Data 6/7/2002 — Pág A-16

CLIMA

Seminário analisa aquecimento global

Busca de soluções pode levar ao desenvolvimento econômico

CLARISSA THOMÉ

RIO – A redução na emissão de gases causadores do efeito estufa traz benefícios para a economia, além de desacelerar o processo de aquecimento global e diminuir a poluição nas grandes cidades. Esse foi o principal ponto debatido ontem durante seminário organizado pela Coordenação de Programas de Pós-Graduação e Engenharia (Coppe), da Universidade Federal do Rio de Janeiro, sobre relatórios que contribuíram para a formulação do Protocolo de Kyoto – acordo internacional para redução da emissão de gases. Os documentos foram traduzidos e apresentados pela primeira vez ontem a representantes dos governos federal, estadual e municipal e da indústria.

Para o coordenador do Centroclima, centro de estudos sobre mudanças climáticas da Coppe, professor Emílio Lèbre La Rovere, a busca por soluções para reduzir a emissão de gases pode levar ao aquecimento econômico. Ele citou a reativação do programa Pró-Álcool.

"É uma solução nacional, que evita a importação de petróleo, gera um milhão de empregos diretos e indiretos no meio rural, e substitui a gasolina, que é responsável por 10% do lançamento de gases no meio ambiente", disse La Rovere, que participou da preparação dos relatórios, agora traduzidos.

> PROGRAMA DO ÁLCOOL É UMA DAS SAÍDAS

Além do álcool, o professor citou o uso de carvão vegetal, a criação de pequenas centrais elétricas e a energia eólica como formas de reduzir a emissão de gases. "É possível criar novas tecnologias para conseguir o aumento da eficiência dos produtos, que terão a mesma potência com menor consumo. Uma caldeira, por exemplo, que consome menos combustível, ou um fogão que precise de menos gás", disse.

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O aquecimento pode provocar uma série de tragédias. A Holanda terá de elevar a altura dos diques, Bangladesh sofrerá com inundações, ilhas do Pacífico desaparecerão, engolidas pelo mar. No Brasil, o aumento da temperatura poderá significar redução da biodiversidade amazônica e agravamento da seca do nordeste. Os relatórios estarão disponíveis na internet, nos sites www.centroclima.org.br e ipccprojeto.org.br.

- Organization - material

The organization of the seminar was impeccable and Centro Clima team members were congratulated for the excellent job they had done.
A binder containing translations of parts of the selected IPCC reports made by the presenters in Portuguese, and the original IPCC Reports were distributed to all participants.

- Project Site

Also coordinated by Centro Clima, an internet site of the IPCC WGIII Outreach Project has been developed. The site www.ipccprojeto.org.br contains information about the objectives and activities of the complete Outreach project during the year of 2002. It´s linked with an updated database of contacts and the site will be an useful tool for the Working Groups activities development dissemination. Invitations were sent automatically through the site and confirmations were received by the site or phone.
Complete information about the seminar, including, translations, presentations, pictures and press releases will be on the site.

BRASUS-CentroClima-CENBIO Project Team Comments:

The event achieved the number of participants that had been targeted by the Project Team, as well as the kind of representation it sought. The content and manner of presentations seemed very well suited to the audience, informing the context of the Project, presenting the IPCC as well as the focus of the studies under its Working Group 3 (WGIII). They also provided an historical overview of how climate change has evolved in both international and national contexts; where Brazil stands at the moment on the key issues, and what factors will influence decisions to be taken in the near future. The presentations of the reports issues by WGIII on baseline emissions, mitigation strategies and technology transfer – as well as the synthesis report – appeared to flow in good order and sequence, and hold the interest of the various participants. The event experienced no major problems, and kept mostly on schedule after the initial delay in starting the event. Fortunately, materials requested by the Project Team and sent by the IPCC WGIII to Brazil over a month before the event were released by customs in time to provide them to the participants before they departed the seminar.

The lunch hour was used successfully to build on a small base established the previous day for the three Working Groups that are an important element of the project to define continuing information dissemination strategies for 1) Municipalities; 2) Industries; and 3) Agriculture-Forestry sectors. The three thematic Working Groups will include federal government, academia, financial and media representatives, and include size and regional variations in their composition. The Working Groups will consult with other organizations in their sector over the course of three months to define the strategies for dissemination in each of their respective sectors. The groups will also make proposals for establishing local fora and policy supports to enable the continuation of the outreach effort initiated through this IPCC WGIII Project for a widening segment of Brazilian society. Such local bases are expected to aim at incorporating this information into project implementation and business development plans.

The luncheon gathering of 24 potential WG members reviewed the objectives, tasks and products of the WGs within the context of the Outreach Project, the methods to be used, and the support (financial, logistical and technical) that could be provided by the Project Team members. The temporary WG leaders (two per WG) will finalize the composition of the WG by July 10th and propose a working plan for their respective group for approval by July 17th.

All-in-all, the Project Team members conclude that the event was a major success and a solid start for the work ahead with the Working Groups. It also served to establish a lucid context for the Project's concluding Seminar in December in Brasilia, when the results of the dissemination strategies and other recommendations defined by the WGs will be presented.

Initial Evaluation of Surveys[15]

Of 120 surveys distributed to the seminar participants, with the announced aim of providing inputs to establish a baseline of knowledge by sector and area of activity for the Project's targeted public, 63 surveys were collected. These were (surprisingly) complete for almost all of the questions, demonstrating a good will to provide useful information as requested by the event's organizers. A preliminary evaluation of the questionnaires shows the following results:

Representation of Responding Participants[16]: 32 Public Sector, 21 Private Sector, 16 Third Sector (mix of private and public sector NGOs)

Area in which participants work: (Note: 37 respondents listed multiple areas among the 20 options offered.)
The greatest number of participants indicated that their area of activity was environment (31), followed by education/research (18), infrastructure (17), development (12), planning (10) and finance (9). There were **no** participants from heavy industry, only one each in mineral extraction, sales, and business administration areas, and only two in the areas of construction and communication/marketing, with the remainder of categories showing between 3 and 7 representatives each.
The greatest number of participants (33) indicated that they had 'medium' familiarity with the Kyoto Protocol process prior to the Seminar, 23 indicated that they had profound familiarity, and 7 indicated superficial familiarity.[17]

A total of 56 respondents indicated that they utilize climate change concepts in their active area(s) today and of these, 43 indicated that the concepts were based on IPCC publications, versus 7 that do not use these concepts.

All except for 5 participants answered 'Yes', that they believe that in 3-5 years climate changes concepts will need to be incorporated in their area of activity.

In all 3 thematic areas of the presentations (Emissions, Mitigation and Technology Transfer), participants overwhelmingly responded (more than 50 of 63 surveyed) that the information provided generally clarified information on the topics; while the technical knowledge on these areas was clarified slightly more for the emissions area (45 positive responses) than for the other two areas (39 for each), but this response still was a positive indication. Both 'identification of opportunities' and 'applicable mechanisms for Brazil' were rated by about 50% of the respondents as being clarifying for all three categories – this appears to be the area

[15] See Attachment 1 for survey. In some questions, responses were across multiple categories, partially blank, or qualified, which accounts for why the numbers of responses per question do not add up to the number of surveys evaluated.
[16] It could not be determined by evaluating the questionnaires whether or how many participants from COPPE/CentroClima completed the questionnaire. If this number were significant, since almost 20% of the events participants were from the event's host/local organizer, this would have an impact on results. It is noted that the seminar attempted to otherwise limit the representation of other (non-COPPE/non-CentroClima) entities to one or two, in order to secure the widest possible representation of Brazilian organizations of all types, sizes and regions within the targeted limit of roughly 100 external participants.
[17] The number of those with great familiarity, combined with the statistic of a large number of survey respondents indicating that they were involved in education and research areas, may possibly be due to a correspondingly large number of respondents affiliated with COPPE/CentroClima – there were only 7 participants from non-Project Team universities, though others working in the educational area may have educational programs through their non-university affiliated organization.

for greatest potential improvement for information dissemination. For explanations of the 'Global Scenario', Emissions clearly was seen as more helpful by 55 of the total respondents, with Mitigation and Technology Transfer rated positively by 47 and 42 of the respondents, respectively - overall, a good rating. Finally, on the issue of the National Scenario, all three areas were rated positively by 39 respondents on Emissions, 31 on Mitigation, and 32 for Technology Transfer, indicating another area where improvements in the presentation of the information could be improved.

About two-thirds (42) of the respondents indicated they already receive information on climate change, citing most often COPPE/UFRJ (8), and the Brazilian Ministry of Science and Technology, IPCC and FBMC equally as their source (7 each). Other sources cited by at least 3 respondents included environmental (magazines) publications, the Internet, UNDP and UNEP.

Overall, 46 of the respondents found that the information presented was clear and objective; and all but 5 of the total number of respondents want to receive further information on the progress of the Project's Working Groups (51 on a systematic basis, 10 only when results are concluded).

Rio Seminar for IPCC WGIII Outreach Project, July 5, 2002
Questionário para participantes no Seminário sobre Divulgação dos Trabalhos do IPCC WGIII sobre Mudanças Climáticas (Favor preencher e entregar antes de sair do Workshop)

1. (em) Qual setor trabalha?
   ( ) Público
   ( ) Privado
   ( ) Terceiro setor

2. Qual a área de atuação:
   ( ) Indústria Pesada
   ( ) Indústria em geral
   ( ) Extrativismo mineral
   ( ) Infraetrutura (energia, transporte, água/saneamento, telecomunição)
   ( ) Construção
   ( ) Florestal
   ( ) Agricultura
   ( ) Ambiental
   ( ) Financeira/Economica
   ( ) Planejamento
   ( ) Gestão
   ( ) Comunicação / Marketing
   ( ) Vendas
   ( ) Políticas
   ( ) Regulamentação
   ( ) Administração Pública
   ( ) Administração Empresarial
   ( ) Jurídica
   ( ) Educação/Pesquisa
   ( ) Desenvolvimento

3. Que familiaridade tinha sobre o processo do Protocolo de Quioto antes deste Seminário?
   ( ) Superficial
   ( ) Mediana
   ( ) Profunda

4. Atualmente, utiliza conceitos relevantes às mudanças climáticas?
   ( ) Sim ( ) Não

   Caso afirmativo, os conceitos utilizados se baseiam em publicacoes do IPCC?
   ( ) Sim ( ) Não

5. Você acredita que em um prazo médio (3 a 5 anos), necessitará aplicar estes conceitos no seu trabalho?

   ( ) Sim ( ) Não ( ) Não sei

6. Voce acha que o Seminário auxiliou o esclarecimento dos assuntos apresentados (Emissões – EM; Metodologias – MET; Transferência de Tecnologia – TT) nos quesitos abaixo?

	EM	MET	TT
Informações em geral	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Conhecimento técnico	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Identificação de oportunidades	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Mecanismos aplicáveis no país	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Cenário Global	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Cenário Nacional	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não

7. Sua instituição recebe informações referentes ao tema 'Mudanças Climáticas':

   ( ) sim, recebemos – Cite a fonte das informações:_____
   ( ) não recebemos, porém pesquisamos na _____
   ( ) não recebemos e não pesquisamos.

8. As informações disponíveis são claras e objetivas?

   ( ) não ( ) sim ( ) não tenho informação

9. Teria interesse em receber informações sobre os progressos dos GTs do projeto?

   ( ) sim, sistemáticamente
   ( ) sim, somente as conclusões
   ( ) não

Appendix 1.1.b Final Project Report: Summary of Results of the Second Seminar of the IPCC WGIII Outreach Project – Brazil

Basic Data:
Date: 5th of December, 2002
Location: Auditorium of the Confederação Nacional da Indústria – CNI, Brasília – DF – Brasil
Time: From 9:00 a.m. to 6:00 p.m.

Number of Total Participants: 87
Number of Team Member Participants[18]: 7
Participants Excluding Team Members: 80
Number of Surveys collected: 38

Overview of the Seminar

- Location and facilities

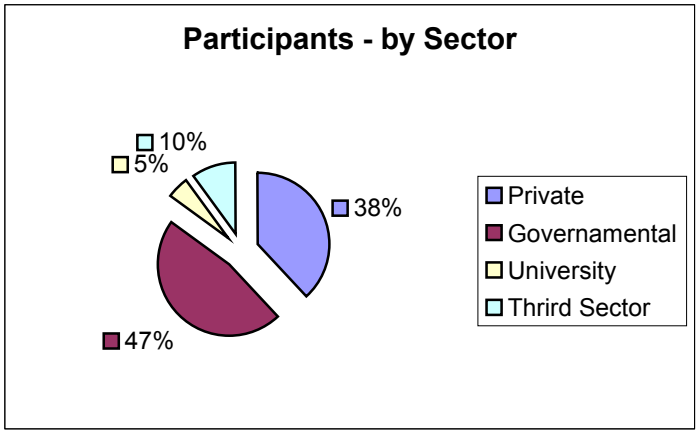
The Seminar took place in center of Brasília, the capital city of Brazil, in the auditorium of the National Confederation of Industries (CNI) headquarters, which has seating for 158 people. The use of this modern and well-equipped auditorium was contributed to the event organizers (CENBIO and BRASUS) by CNI in August, informally, formalized in writing in early October. Coffee-breaks were served to participants in an area just outside the auditorium, and lunch was held in an adjacent dining hall.

- Participation

The Seminar started around 9:20 a.m. and ended around 5:30 p.m. About 50% of the participants were from the Federal District itself, mainly representing government agencies or non-government organizations (NGOs). The overall audience reflected particularly strong representation of private sector enterprises and government agencies (state and federal), with only about 10% of the audience reflecting NGOs and the remainder academic organizations.

Due mainly to the recent federal elections of Congress members and the President, and the timing of this event - which occurred during a hectic government transition period and jockeying for positions of various relevant leaders in the new Cabinet, it is considered that the event did not capture as many congressional members, nor members of the new federal administration as was desired by the organizers. The transition activities involved many NGO organizations vis-a-vis interface with the new government on the exact day of the seminar.

[18] Members of CentroClima or COPPE/UFRJ, CENBIO, BRASUS and IPCC.



A binder containing the Seminar's itinerary, overall project presentation, questionnaire and form for requesting particular presentations (indicating in what media form) was provided to participants upon registration. The binder has space to hold additional presentations and materials. All materials were provided in Portuguese, with the presenters from the first and second outreach seminars having made and refined translations of selected parts of the relevant IPCC/WGIII reports. Other United Nations Environment Programme (UNEP) and IPCC materials in English were provided to participants upon registration or during the event, including: 'A Simplified Guide to the IPCC's 'Climate Change 2001: Mitigation' ' (September 2002); 'IPCC: Climate Change 2001: Mitigation' (WMO and UNEP); and Methodological and Technological Issues in Technology Transfer,' (WMO and UNEP).

Based on the questionnaires submitted for the December seminar, CD Roms with copies of all the presentations made in Brasilia, plus annexes including materials that were presented at the July outreach seminar in Rio de Janeiro but not at the December event, will be sent to 34 respondents, and printed copies of the materials to an additional 4 respondents, by the end of December.

- Project Web Site

The internet site www.ipccprojeto.org.br developed for managing invitations and responses for the first seminar of the IPCC WGIII Outreach in Brazil Project, initially managed under CentroClima, held the presentations for that event to the present. The organizers of the second event used more traditional e-mailed and faxed invitations, and telephoned and e-mailed confirmation, for handling participants in the second event.
CentroClima will confirm whether this site will exist post-Project closure, or whether the materials developed for this project will be available through another site related to CentroClima or the COPPE/RJ center at the Federal University of Rio de Janeiro. CENBIO will provide the materials developed through project on its own website, www.cenbio.org.br , and BRASUS will maintain these materials and others – including pictures, descriptions of the project, names and contacts of key participating institutions and Working Group members – on its web page, www.brasus.net .

A data base of contacts for the project was developed and used for the invitation lists for both the first and second seminars, as well as supporting ideas and activities of the three Working Groups (Industry, Municipalities and Agro-Forestry sectors). The data base was originally linked with the project site for purposes of the first event, but not used in this manner since then.

Initial Evaluation of Surveys[19] Distributed at the Second Seminar in Brasilia

Of the 80 surveys distributed (to non-organizing team) seminar participants, with the announced aim of providing inputs to establish a baseline of knowledge by sector and area of activity for the Project's targeted public, 38 surveys were collected. These were (surprisingly) complete for almost all of the questions, demonstrating a good will to provide useful information as requested by the event's organizers. A preliminary evaluation of the questionnaires turned in to event organizers shows the following results:

Representation of Responding Participants: 52% Public Sector, 21% Private Sector, 16% Third Sector (mix of private and public sector NGOs).

Area in which participants work: (Note: 50% respondents listed multiple areas among the 20 options offered.)
The greatest number of participants indicated that their area of activity was environment (22%), followed by infrastructure (10.4%), development (9%), education/research (7.8%),planning (6.5%), public administration (6.5%), policy/agriculture (5.2%), heavy industry and forest (3.9%). There were **no** participants from financial, communication / marketing, construction, and business administration areas.

The greatest number of participants (65.8%) indicated that they had 'medium' familiarity with the Kyoto Protocol process prior to the Seminar, 23.7% indicated superficial familiarity, and 10.5% indicated that they had profound familiarity.

A total of 77.77% respondents indicated that they utilize climate change concepts in their active area(s) today.
About 97% of survey participants answered 'Yes', that they believe that in 3-5 years climate changes concepts will need to be incorporated in their area of activity.
The percentage of participants that also had participated in the Outreach Project's first event in July 2002 was 24%.

For question 'h', the following results are presented:

	EM	**MET**	**TT**
General Information	97%	87%	92%
Technical Knowledge	71%	44%	46%
Identification of opportunities	76%	44%	60%
Applicable Mechanisms for Brazil	89%	69%	78%
Global Scenario	89%	72%	82%
National Scenario	67%	68%	58%

The above information shows that, in all 3 thematic areas of the presentations (Emissions, Mitigation and Technology Transfer), participants responded strongly that the information provided generally clarified their understanding of all three thematic topics; while the

[19] See Attachment 1 for distributed survey. In some questions, responses were across multiple categories, partially blank, or qualified, which accounts for why the numbers of responses per question do not add up to the number of surveys evaluated.

technical knowledge on these areas was clarified more for the emissions area (71% positive responses) than for the other two areas (about 45% for each). Both 'Global Scenario' and 'Applicable Mechanisms for Brazil' were rated by 70% or more of the respondents as being clarifying for all three categories. For Identification of Opportunities, the presentation on Emissions was clearly seen as more helpful by most respondents, though Technology Transfer received a strong 60% rating. National Scenario was the category with the smallest spread (only 10%) among the three areas, with a good ranking for all.

About 60% of the respondents indicated they already receive information on climate change, citing most often COPPE/UFRJ, and the Brazilian Ministry of Science and Technology, Ministry of Development, IPCC and FBMC. Other sources cited included environmental (magazines) publications, the Internet, UNDP, BNDES, UNFCCC and UNEP.

Overall, 64% of the respondents found that the information presented was clear and objective.

Nine of the seminar participants were members of one of the Project's three working groups: 4 from the Agro-forestry Working Group, two from the Municipality Working Group, and three from the Industry Working Group.

Of the survey respondents, 84% indicated their interest in continuing to receive IPCC information and materials in the future. The list of these persons is provided in Attachment 2.

Other comments by Project Team Members

A separate brief report translating the gist of the conclusions of the three Working Groups will be submitted by BRASUS by December 31, 2002. Here, it is simply noted that the strategies of the three groups had various common areas of overlap, particularly in the manner of distributing IPCC/WGIII materials. The Agro-Forestry group had an extensive target list of recipients as well as the most appropriate media form to reach these targeted audiences.

Briefly, some key highlights are:

- The Agro-Forestry group leadership participated in the pilot project focused on incorporating presentations by one of the experts (who presented materials at both of the seminars) in training programs and project launching in relevant areas: in this case, a sustainable and integrated development project utilizing renewable energy resources in four rural regions of the State of Mato Grosso to promote local development provided the occasion to offer information on climate change to an audience of 105 persons. These participants came from state, federal and municipal governments, NGOs, universities, financial institutions, private sector companies, industry federations, small producer cooperatives, and various rural, environment and forestry management organizations were surveyed as to their state of knowledge, interest, and need for information on the climate change topics.
- The Municipalities Working Group particularly identified the need to make climate change concepts part of the everyday vocabulary of 'regular' people, and recommended that a sympathetic animated 'figure' be designed to represent the average citizen learning about climate change on television and radio program and in educational materials.
- The industry group developed a presentation that it considers to include the most important information that industry members would want to know on a priority basis, suggesting that the presentation be shown in internal company events as well as for other audiences at industry conferences, seminars and other events. It was noted that CNI is a

key disseminator of information for industry, and that CNI has formed a working group on various relevant climate change issues that has already established an extensive communications network for disseminating information throughout Brazil.

- For continuing dissemination, financial resources have to be found to hire dedicated personnel to continue refining and actually implement what the voluntary working groups have outlined as a viable strategy.
- Due to the change in Government effective in January, the working groups could not readily identify government members with which to seek partners for concluding an implementation plan. Therefore, the Working Group leaders and BRASUS will meet once more at the end of January or February and try to at least establish the first link with the new Government of Brazil to take up the effort to distribute useful, practical information on climate change that is applicable to Brazil.

It is noted that, in addition to the materials distributed at the December seminar, the Project Team provided limited copies of the following IPCC materials, with support from IPCC/WGIII – TSU, at the first seminar, on July 5, 2002 in Rio de Janeiro: 'Climate Change 2001: Impacts, adaptation, and Vulnerability – Summary for Policymakers and Technical Summary of the Working Group II Report'; 'IPCC Special Report on Land Use, Land-Use Change, and Forestry – Summary for Policy Makers'; and the 'IPCC Special Report on Emissions Scenarios – Summary for Policy Makers'.

At a Project Working Group pilot outreach activity undertaken in the context of a training seminar for a renewable energy project being launched in Cuiaba, Mato Grosso State on August 14, 2002, the BRASUS team provided two brochures with translations of the Climate Change Convention ('CQNUMC – Convênio sobre Mudança do Clima') and the Kyoto Protocol ('Protocolo de Quioto – à Conveção sobre Mudança do Clima'), both reprinted with permission of the Brazilian Ministry of Science and Technology.

Questionnaire for Seminar II, Brasília, DF - Brazil
Questionário para participantes no Seminário sobre Divulgação dos Trabalhos do IPCC WGIII sobre Mudanças Climáticas, 05 de Dezembro de 2002 (Favor preencher e entregar antes de sair do Workshop)

1. Qual setor trabalha?
   ( ) Público
   ( ) Privado
   ( ) Terceiro setor

2. Qual a área de atuação:
   ( ) Indústria Pesada
   ( ) Indústria em geral
   ( ) Extrativismo mineral
   ( ) Infraetrutura (energia, transporte, água/saneamento, telecomunição)
   ( ) Construção
   ( ) Florestal
   ( ) Agricultura
   ( ) Ambiental
   ( ) Financeira/Economica
   ( ) Planejamento
   ( ) Gestão
   ( ) Comunicação / Marketing
   ( ) Vendas
   ( ) Políticas
   ( ) Regulamentação
   ( ) Administração Pública
   ( ) Administração Empresarial
   ( ) Jurídica
   ( ) Educação/Pesquisa
   ( ) Desenvolvimento

3. Que familiaridade tinha sobre o processo do Protocolo de Quioto antes deste Seminário?
   ( ) Superficial
   ( ) Mediana
   ( ) Profunda

4. Atualmente, utiliza conceitos relevantes às mudanças climáticas?
   ( ) Sim ( ) Não

5. Você acredita que em um prazo médio (3 a 5 anos), necessitará aplicar estes conceitos no seu trabalho?
   ( ) Sim ( ) Não ( ) Não sei

6. Voce acha que o Seminário auxiliou o esclarecimento dos assuntos apresentados (Emissões – EM; Metodologias – MET; Transferência de Tecnologia – TT) nos quesitos abaixo?

	EM	MET	TT
Informações em geral	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Conhecimento técnico	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Identificação de oportunidades	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Mecanismos aplicáveis no país	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Cenário Global	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não
Cenário Nacional	( ) sim ( ) não	( ) sim ( ) não	( ) sim ( ) não

7. Sua instituição recebe informações referentes ao tema 'Mudanças Climáticas':
   ( ) sim, recebemos – Cite a fonte das informações:_____
   ( ) não recebemos, porém pesquisamos na _____
   ( ) não recebemos e não pesquisamos.

8. As informações disponíveis são claras e objetivas?
   ( ) não ( ) sim ( ) não tenho informação

9. Você ou outra pessoa da sua instituição participou do Iº Seminário sobre Divulgação dos Trabalhos do IPCC WGIII, realizado em 05/06/2002 no Rio de Janeiro?
   ( ) não ( ) sim

10. Você ou outra pessoa da sua instituição participou dos Grupos de Trabalho (GT-Indústria, GT-Agroflorestas, GT-Municípios) formados neste projeto?
    ( ) não ( ) sim Qual?_____

11. A sua instituição tem interesse em participar na continuidade do processo de divulgação das informações do IPCC?
    ( ) não ( ) sim

    Caso sua resposta for afirmativa, informe abaixo o nome de sua instituição, a pessoa para contato, o cargo que ocupa e os meios para contato (telefone, fax, e-mail, etc.).

_____
_____
_____
_____

12. Você gostaria de receber cópia de quais apresentações do seminário?

Gylvan Meira Filho	( ) não	( ) sim	
Emílio Lebre La Rovere	( ) não	( ) sim	
Sérgio C. Trindade	( ) não	( ) sim	
José Roberto Moreira	( ) não	( ) sim	
GT - AgroFloresta	( ) não	( ) sim	
GT - Indústria	( ) não	( ) sim	
GT - Municípios	( ) não	( ) sim	
Suzanne B. Maia	( ) não	( ) sim	(Obs. Já incluída na pasta)

Em caso afirmativo, informe:

Forma de recebimento:
( ) Impresso
( ) Correio Eletrônico
( ) CD

Nome do solicitante:_____

Instituição:_____

Contatos: Telefone:_____

e-mail:_____

Endereço:_____

_____

_____

_____

Contacts for persons who want to continue IPCC materials and information

(from December 5, 2002 Seminar Survey)

NOME	INSTITUIÇÃO	ENDEREÇO	Printed	CD	E-Mail
Adriano Santiago de Oliveira	MMA	Esplanada dos Ministérios, bl. B, sala 824 Brasília – DF e-mail: adriano.oliveira@mma.gov.br Fone: 61 317-1027			X
Alberto J. Palombo	Hidroenviroment – LLC	SQN 206, BL. H, ap. 104 Brasília – DF CEP 70.844-080 e-mail: apalombo@hidroenviroment.com Fone: 61 932 0696			X
Anton Hofer	WIP-Renewable Energies	Sylversteinstrasse 2 81369 Munich – Germany e-mail: anton.hofer@wip-munich.de Fone: +49 89 7201 2735		X	
Antonio Hélder Oliveira Lima	CNPq	SEPN Quadra 509, bl A, 3º andar Brasília – DF CEP 70.750-901 e-mail: ahelder@cnpq.br Fone: 61 348-9320	X		
Breno de Souza França	ANEEL	SGAN 914, ED. Monte Carlo, Bl. A, ap. 132 Brasília – DF CEP 70.790-140 e-mail: breno@aneel.gov.br Fone: 61 426-5350	X	X	X
Camilla Lott	CVRD	Av. Graça Aranha, 26 - 3º andar – Centro Rio de Janeiro – RJ e-mail: camilla.lott@cvrd.com.br Fone: 21 3814-9643		X	X
Carlos Luiz Regazzi Filho	CNI	Rua Mariz e Barros, 678, 3º andar, Tijuca, Rio de Janeiro – RJ CEP 20.270-002 e-mail: cregazzi@cni.org.br Fone: 21 2204-9620			X

Christina Elizabeth Paes de Vasconcelos	MME	Esplanada dos Ministérios, Bl. U, 5º andar, sala 500 – Secretaria de Energia, Brasília – DF e-mail: christina@mme.gov.br Fone: 61 319-5672		X	X
Cleyr Pedrosa Mitchell	MDA	Esplanada dos Ministérios, Bl. A, 8º andar – Secretaria Executiva, Brasília – DF e-mail: cleyr.mitchell@mda.gov.br Fone: 61 314-8030		X	
Ernesto Maraci Netto	INCRA	Setor Bancário Norte – Palácio do Desenvolvimento, 16º andar, sala 1612, Brasília-DF e-mail: maraci@incra.gov.br Fone: 61 411-7688	X		
Esequias Costa Sales	TRANSPETRO S/A	Av. Presidente Vargas, 328 - 9º andar, Rio de Janeiro – RJ e-mail: sales.e@petrobras.com.br		X	
Fernanda Vanessa Mascarenhas Magalhães	MCT – Coordenação Geral de Política Tecnológica	Esplanada dos Ministérios, Bl. E, sala 393 Brasília – DF e-mail: fmagalhães@mct.gov.br Fone: 61 317-7812			X
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Appendix 1.1.c Follow-up Project Report: Continuing Results of the IPCC WGIII Outreach Project – Brazil/2002- in 2003

I. Introduction

After the official closure of the IPCC WGIII Outreach Project in Brazil, executed from March to the end of December 2002 by Brasil Sustentavel (BRASUS), CentroClima and CENBIO, the National Biomass Reference Center for Brazil, housed in the University of Sao Paulo, a commitment was made by BRASUS to continue disseminating the various materials produced during the Project and to report on these in July 2003 to the IPCC WGIII's Technical Support Unit. This report fulfills that commitment.

II. Overview of Dissemination Activities in 2003

In summary, the materials that were distributed by BRASUS in 2003 included:

a. A CD Rom of the summaries in Portuguese made by the specialists involved in the project, of the IPCC WGIII reports, and their presentations of these summaries in two Seminars implemented by the project team in July and December of 2002. The CD also continued the presentations of the three working groups established by the Project Team to explore the means of successfully targeting and exposing a larger slice of Brazilian civil society to the information of the IPCC WGIII, in its translated and summarized form, through various media forms, as well as photographs of the December seminar.
b. A printed set of the Project's translated materials and presentations distributed at the second seminar.
c. The Brazilian Government's translation of the UN Framework for the Climate Change Convention, published as a booklet by UNEP; and another on the Kyoto Protocol, originally published in Portuguese by UNDP and reprinted by the Brazilian Ministry of Science and Technology and BRASUS for purposes of dissemination under the IPCC Project.
d. A primer on Climate Change, produced in Portuguese by the Research Institute of the Amazon (IPAM), which included a special insert developed by BRASUS with the three working groups of the Project, discussing some fundamental points covered by the project literature and relevant to the nature of the working groups – i.e., the Industrial Sector, the Agro-forestry Sector and the Municipal Sector.
e. Printed publications in English of the IPCC WGIII reports, furnished by Ms. Annick Osthoff of the WGIII TSU, as well as the UNEP booklet on 'A Simplified Guide to the 'IPCC's Climate Change 2001: Mitigation,'' until these were all distributed (by the end of March 2003).

The materials were also distributed in various manners and at various moments. In January, there was a broad dissemination to those who had participated in the December Seminar of the IPCC Outreach Project, held in Brasilia, and had requested the materials (and indicating in what format) on the written questionnaire provided at the event. In the aftermath of the event, there were also about six requests for materials from those who had been invited to the Seminar but could not attend it, as well as a few others who had heard of the event and wanted the materials.
In February, BRASUS distributed above-identified materials a, b and c to participants of a training session it was conducting on renewable energy market studies for multi-disciplinary

expert teams, involving approximately 44 persons including 26 energy, agronomy and forestry engineers, sociologists, and market development experts; 10 members of the Regional Market Manager consortia of private enterprises, rural cooperatives/associations and NGOs that are involved in four different rural regions of Mato Grosso state (MT); and representatives from partner organizations including the state planning and environmental agencies (SEPLAN and FEMA, respectively), the MT Federation of Industries, and two municipal governments.

In March, BRASUS was invited to speak of its work with sustainable development and the IPCC project at a meeting with other NGOs sponsored by FEMA-MT, at which approximately twenty climate changes brochures with the special project insert (item d) were distributed. Unfortunately, there was no document control tool applied, so it is unknown exactly who picked up these materials.

In April, at a Workshop on projects for renewable energy productive applications in Brazil, held in Recife (Northeast Brazil), BRASUS distributed 16 copies each of the CD Rom of the December Seminar proceedings, and the Climate Change booklet with the special insert, to all 16 participants, representing 10 different institutions – 3 being universities (Amapa, Ceara and PE), one a special technology center, 2 private enterprises (one international and its Brazilian subsidiary), 1 international training company and 1 other its Brazilian subsidiary, 1 NGO and 1 a Northeast regional electric and water resource utility.

In May, during an International Marketing Seminar on Renewable Energy Market and Business Opportunities organized by BRASUS, in Cuiaba, Mato Grosso, the Seminar CD Rom and the Climate Change booklet with the insert produced by the Project were distributed to 69 (of a total 189) participants. These participants represented state government (26); businesses (8); municipal government officials (7); rural producers/associations (6); universities (8); federal enterprises or programs (3) and other groups (11).

In late July, a large Environmental Fair was held in Alta Floresta, in the State of Mato Grosso, keynoted by the Governor of the State and the Brazilian Minister of Environment, at which BRASUS provided 20 copies of the Seminar CD, of which 19 were distributed along with 34 copies of the Climate Change brochure and special insert, to a total of 37 persons representing schools and universities (23), local and state governments (6), NGOs (5) and businesses (3).

The recipients of materials distributed at this event were not contacted in the survey, given their short time upon receiving the information.

Finally, for another event held on July 23, 2003 in Cuiaba, MT on Solar Energy, the host Energy Policy Group (a university-based group that provides services mainly to the state government) requested and received 100 Climate Change brochures with the insert, but no feedback has been obtained post-event.

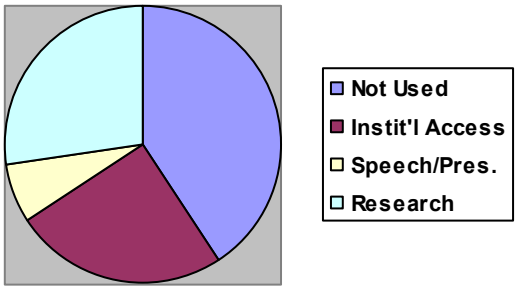
In summary, a total of at least 169 persons received from BRASUS one or more of the above-listed IPCC project materials in the January – July 2003 period, as shown in attachment one to this report.

In late June and early July, BRASUS personnel conducted a telephone and e-mail survey of those who had received the indicated IPCC project materials **by the end of May 2003**. The

survey aimed to gather a quick understanding of the use and usefulness of the materials to the recipients and/or their organizations. Out of 125 contacts attempted, all more than once, only 44 persons actually provided answers to the survey as to whether they had used the distributed IPCC materials and how. The basic gist of whether the materials have been used to date (although some only received the materials in May) are summarized below.

Responses of those reached in survey (July 2003) whom had received IPCC materials:

Use of material	Have not used (yet)	Made publicly available in institution of work	Use as research/ reference material	Use to prepare speeches and presentations	TOTAL PERSONS RESPONDING
Nº persons	18	11	12	3	44



III. Other Information and Conclusions

BRASUS continues to maintain the materials distributed at the two seminars of the IPCC WGIII Outreach in Brazil Project on its website, www.brasus.net.

The general plan of the three project working groups to meet with the new government and attempt to find resources to carry on the dissemination activity has not been followed through. Mainly the distances between the locations of the Working Group members, lack of time due to professional obligations, and lack of financial resources to assist in concerted efforts at dialogue with the Federal Government and other stakeholders as an organized group appear to be the main obstacles. Without specific resources to help prioritize and contract responsible parties to continue the discussions, BRASUS does not believe that further efforts will be undertaken for this type of dialogue to implement the Working Groups' proposal for reaching out to an increasing number of would-be stakeholders. However, BRASUS believes that some of the members of the working groups, and others that have received and appear to be actively using the provided materials from the IPCC project, show an expanded audience and scope of interest in climate changes issues that indicate that Brazilian civil society, as well as an increasing number of local government officials, are seeking out and using information on this subject.

Finally, BRASUS believes that 'live' events, such as training courses, workshops and seminars, provide an efficient mean of distributing material, and calling attention to what is being provided with what objective in mind through the use of speakers who are aware or involved in the issues of climate change. On repeated occasions, BRASUS has taken

advantage of the presence of Dr. Sergio C. Trindade at its various events to talk about climate change and indicate how the materials on the topic are being made available. BRASUS will continue to try and provide the materials from the outreach project, increasingly through electronic form, as long as it can financial support such activities.

The BRASUS team thanks the IPCC WGIII, and especially the TSU, for its support and patience in the additional Project activities that have been undertaken in 2003. We believe that these activities have helped to scatter quite a few seeds for thought and cultivation in many different directions in Brazil – most prominently in the Central West, North and Northeast regions – and that there will be many future benefits reaped as awareness and understanding of the relevance of climate change mitigation and emission reduction strategies becomes that much closer to everyday activities at work, home and school.

Suzanne B. Maia
President
Brasil Sustentavel (BRASUS)
Brasilia-DF, Brasil

July 31, 2003

Appendix 1.2 Outreach Report Cuba

IPCC Outreach Workshop on Mitigation Working Group III, Acuario Nacional de Cuba, Havana, 23-24 September 2002, Final Report

By Ramón Pichs Madruga (CIEM, Cuba)

I. Basic Information

1. Date and location

The IPCC Outreach Workshop on Mitigation was held at 'Acuario Nacional de Cuba', in Miramar, Havana, on 23-24 September 2002.

2. Organization and Sponsorship

This workshop was organised by the National Team on Climate Change of Cuba and the Centre for World Economy Studies (CIEM) of Havana, with the co-sponsorship of the Intergovernmental Panel on Climate Change (IPCC) and the UNDP Office in Havana; as part of the outreach activities on recent reports of Working Group III (Mitigation) of the IPCC.

Translation in Spanish-English-Spanish was provided during the meeting, with the support of the UNDP office in Havana.

3. Objectives

The main objectives of the workshop were:
Explain how to access IPCC information by experts and key stakeholders.
Improve understanding among key stakeholders (policy-makers, industry representatives, NGOs and academic experts) by disseminating and explaining the main findings of the IPCC Working Group III recent reports and related summary reports[20]:
IPCC Working Group III Third Assessment Report (TAR) and corresponding sections of the TAR Synthesis Report.
IPCC Special Report on Emission Scenarios.
IPCC Special Report on Methodological and Technological Issues in Technology Transference.
IPCC Special Report on Land Use, Land Use Change and Forestry (LULUCF).
Proceedings of the two Regional Expert Meetings on CC and Development, Equity and Sustainability (DES)
2. Encourage a preliminary discussion on the implications of relevant IPCC-WG III findings on national climate change response strategies, with general reference to the regional context.

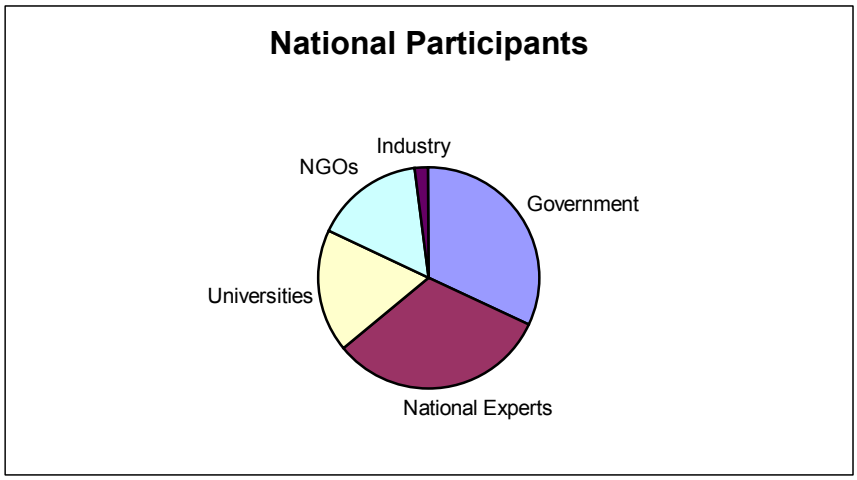
4. Participants

The participants in the workshop included 56 Cubans and 15 international invitees.
Members of the IPCC Bureau: 4 (1 from Cuba).
Lead Authors or Review Editors of WG III-TAR and IPCC SRs: 6 (3 from Cuba).

[20] TSU WG III and IPCC Secretariat provided the basic documentation distributed to the participants.

a) National participants:

Government representatives:	18 (32%).
National experts (excluding university representatives)	18 (32%)
University representatives and specialised media:	10 (18%)
NGOs:	9 (16%)
Industry representative:	1 (2%)
TOTAL	*56 (100%)*



Government representatives included participants from several key ministries as: Ministry of Science, Technology and Environment; Ministry of Sugar Industry; Ministry of Fishing Industry; Ministry of Construction; Ministry of Finance and Prices; Ministry of Economy and Planning; Ministry of Education; Ministry of Agriculture; Ministry of Basic (Heavy) Industry; and Ministry of Armed Forces.

National experts (other than university representatives) included participants from several academic and scientific centres/institutes, such as: Centre for Research and Development of Transport Sector; Forestry Research Institute; Cuban Observatory of Science and Technology; National Institute of Economic Research; Cubaenergía; Centre for Marine Research; Institute of Ecology and Systematic; Institute of Meteorology; and Centre for World Economy Studies (CIEM).

NGO representatives included several NGOs that took part in the Global Forum of Peoples during the Summit on Sustainable Development in Johannesburg, South Africa (August, 2002), such as: Foundation Man and Nature 'Antonio Nuñez Jiménez'; Economic Society Friends of the Country; Cuban Association for Animal Food; National Association of Economists of Cuba; Meteorological Society of Cuba; CubaSolar; Centre for Studies on Europe and Council of Churches of Cuba.

Only the Electricity Union was registered as *industry representative*, but several important industries were represented at Ministry level (see government participants).

Geographical distribution of national participants:

Havana City:	47 (84%)
Other provinces:	9 (16%)
TOTAL	*56 (100%)*

b) International invitees:
3 international representatives: Ms. Cora Minderhoud, Ambassador of The Netherlands in Cuba; Dr. Pablo Mandeville, Resident Representative a.i., UNDP Office in Havana; and Mr. Antonio Perera, UNDP Office in Havana.
9 regional experts, mainly from the Caribbean States and Mexico.
3 resource persons from IPCC WG III[21]*: Annick Osthoff*, Technical Support Unit, WG III - The Netherlands; *Jose Roberto Moreira*, IPCC Lead Author - Brazil; *Emilio Lebre La Rovere*, IPCC Lead Author – Brazil).

II. Workshop Sessions[22]

Day 1 (23 September 2002)

Opening Session:

The opening session took place with the attendance of Ms. Cora Minderhoud, Ambassador of The Netherlands in Cuba; Dr. Pablo Madeville, Resident Representative, a.i., UNDP Office in Havana; Dr. Osvaldo Martínez, President of the Commission of Economic Affairs of the Cuban Parliament and Director of CIEM; Dr. Annick Osthoff, Technical Support Unit, WG III - The Netherlands; Mr. Abel Centella, Scientific Director of the Institute of Meteorology and Head of the National Group on Climate Change; and Dr. Ramón Pichs, IPCC Bureau Member, WG III, and Deputy Director of CIEM.

Dr. Pablo Mandeville highlighted the challenges associated to climate change and emphasised the importance of the integrative approach in dealing with climate change issues, incorporating both adaptation and mitigation response strategies in the context of broader strategies of sustainable development.

After summarising the main conclusions of the IPCC Synthesis Report of TAR (2001), *Dr. Osvaldo Martínez* acknowledged the relevance of the IPCC Third Assessment Report for the decision making process at the national level. He also pointed out that development, equity and sustainability concerns must be properly considered in dealing with climate change challenges.

Mr. Abel Centella referred to the priority given to climate change issues in the national context considering, among other factors, the condition of Cuba as small island developing state. He also mentioned the progress achieved by the National Group on Climate change, as part of the local efforts in this field.

[21] *Dr. Bert Metz*, Co-Chair IPCC WG III - The Netherlands and *Dr. Thelma Krug*, IPCC Lead Author – Brazil could not attend the meeting because their flights to Havana were cancelled as consequence of Hurricane *Isidore*, that affected Cuba and other Caribbean territories in those days.

[22] This section was prepared with contributions by the rapporteurs (*Session A:* Avelino Suárez; *Session B*: Juan Llanes, *Session C:* Adriano García and Julio Torres; and *Session D:* Luis Paz).

Dr. Ramón Pichs introduced the meeting by recalling the intensive work of the IPCC since its creation in 1988, and by highlighting the contributions of the three IPCC working groups to the TAR. He also referred to the various special reports and other scientific documents published during the TAR cycle. He recognised the support of the Government of The Netherlands, the IPCC and the UNDP Office in Havana for the preparation of this important outreach activity.

Session A: IPCC Third Assessment Report (Synthesis Report)

This session was devoted to the presentation and discussion of the main findings of the IPCC Synthesis Report of TAR. Bert Metz, International Environmental Assessment Division, RIVM, The Netherlands and Co-chairman of the IPCC WG III prepared the basic presentation. As Bert Metz could not attend the meeting, Ramón Pichs exposed the presentation. The Local Co-ordinator / rapporteur of this session was Avelino Suárez (Cuba).

Bert Metz's presentation highlighted, among other issues, the following ideas:
Climate change is not an environmental issue, but a development issue.
Global mean surface temperatures have increased during the past 140 years.
Precipitation patterns have changed (1990-2000).
The frequency, persistence and magnitude of El Niño events have increased in the last 20 years.
Weather-related economic damages have increased (1960s-1990s).
Most of the observed warning in the past 50 years is attributable to human activities.
Global mean surface temperature is projected to increase during the 21st century.
Land areas are projected to warm more than the oceans with the greatest warming at high latitudes.
Coral bleaching events are expected to increase.
Increased water availability in some water-scarce regions, and decreased water availability in many water scarce regions.
Initially increased agricultural productivity in some mid-latitude regions & reduction in the tropics and sub-tropics even with warming of a few degrees.
Extreme weather events are projected to increase during the 21st century.
Why (poor people in) developing countries are most vulnerable to climate change: impacts worse.
Why (poor people in) developing countries are most vulnerable to climate change: lower capacity to adapt.
Emissions have to go down to very low levels to stabilise concentrations in the atmosphere.
There is a wide band of uncertainty in the amount of warming that would result from any stabilised concentration of GHGs.
The stabilisation challenge depends on the reference scenario and the stabilisation level.
Shortage of fossil fuel is not going to help us stabilise CO_2 concentrations.
Mitigation options.
Long-term technical potential for renewable and nuclear energy supply.
GHGs emissions per kilometre for different vehicle technologies.
Technical options for CO_2 capture and storage.
Projected mitigation costs are sensitive to the assumed emissions baseline.
Short term: technology improvements have the potential to reduce global emissions by 2010 and 2020 to levels below those in 2000.
Mitigation potential till 2020.

Cost of implementing Kyoto Protocol for industrialised countries.
Costs of climate change mitigation for developing countries.
Impact of Kyoto Protocol on oil prices.
Barriers to achieving the potential of technologies.
Policies, measures and instruments.
Climate change decision-making.
International cooperation: a global climate change regime.
Critical gaps in the knowledge.

During the discussion on the relevance of IPCC findings for climate change mitigation policies in Cuba with general reference to the sub-regional context, three discussants presented their comments. *Abel Centella (Cuba)* mainly referred to mitigation and adaptation policies in Cuba as parts of the same climate change response strategy. *Juan Llanes (Cuba)* focused on the main results of the mitigation studies in the National Group on Climate Change. He highlighted the importance of IPCC reports for national research in this field. *Brian Challenger (Antigua and Barbuda)* analysed the main challenges of small island developing states in dealing with climate change, emphasising the barriers for climate change response strategies (adaptation and mitigation) in these countries.

This session reserved some time for general discussion among the participants on the above-mentioned topics. The most debated issues included the technological potential for various stabilisation levels of $C0_2$ concentrations ('0-emissions' technologies and other options); and the requirement for radical changes in life styles in industrialised countries as a basic component of global mitigation strategies.

Session B: WG III Contribution to the Third Assessment Report.

The main focus of this session was the presentation and discussion of the main findings of the WG III Contribution to the Third Assessment Report. The basic presentation was exposed by Jose Roberto Moreira, CENBIO / University of Sao Paulo, and Co-ordinating Lead Author of the TAR. The Local Co-ordinator / rapporteur of this session was Juan Llanes (Cuba).

The detailed presentation of Jose Roberto Moreira began with an explanation of the structure and organisation of the various working groups of the IPCC during the TAR cycle, highlighting relevant issues as the selection of authors (geographical balance and combined background from different disciplines); the role of the collaborators, reviewers and review editors; the literature consulted; and the preparation of the full report, the Summary for Policy Makers and the Technical Report. Then, Jose Roberto Moreira presented the basic contents of the various chapters of the WG III TAR:
Chapter 1: Setting the Stage: Climate Change and Sustainable Development.
Chapter 2: GHG Emission Mitigation Scenarios and Implications.
Chapter 3: Technological and Economic Potential of GHG Emissions Reduction.
Chapter 4: Technological and Economic Potential of Options to Enhance, Maintain, and Manage Biological Carbon Reservoirs and Geo-engineering.
Chapter 5: Barriers, Opportunities, and Market Potential of Technologies and Practices.
Chapter 6: Policies, Measures and Instruments.
Chapter 7: Costing Methodologies.
Chapter 8: Global, Regional, and National Costs and Ancillary Benefits of Mitigation.
Chapter 9: Sector Costs and Ancillary Benefits of Mitigation.

Chapter 10: Decision-making Frameworks.
Gaps in knowledge.

During the discussion on the relevance of IPCC WG III TAR for climate change mitigation policies in Cuba with general reference to the sub-regional context, two discussants presented their comments. Juan Zúñiga (Cuba) focused his presentation on the software prepared by the National Group on Climate Change (Mitigation) for the techno-economic assessment of *button-up* mitigation measures. Julio Torres referred to the techno-economic assessment of sugar cane biomass use for electricity generation in Cuba, as a mitigation action with considerable potential in the country.

The Q&A session included some recommendations for improving the software presented by Juan Zúñiga; comments on the potential for sugar cane biomass use to electricity generation in Cuba; and clarifications on the commitments for GHG emissions reduction in the context of the UNFCCC.

Session C: Selected IPCC Special Reports

This session was devoted to the presentation and discussion of the main findings of three IPCC Special Reports, which were especially relevant for WG III TAR. The local co-ordinators / rapporteurs of this session were Adriano García (Cuba) y Julio Torres (Cuba).

Jose Roberto Moreira, CENBIO / University of Sao Paulo, and Lead Author of the Special Report on Methodological and Technological Issues in Technology Transfer (SRTT) presented the main findings of the SRTT.

Jose Roberto Moreira's presentation highlighted, among other issues, the following ideas:
importance of issues related to technology transfer in the context of the UNFCCC.
international financing for technology transfer (Foreign Direct Investment, Official Development Assistance, NGOs, etc.)
innovation systems.
barriers and opportunities for technology transfer of environmentally sound technologies (EST).
policies for an effective process of technology transfer.
education, training and other activities for capacity building.
sectoral experiences: transport and agriculture.

During the discussion on the relevance of IPCC SRTT for climate change mitigation policies in Cuba with general reference to the sub-regional context, three discussants presented their comments. *Alfredo Curbelo (Cuba)* referred to the relation between technology transfer and technological innovation; the role of foreign direct investment; and the importance of proactive national policies in this field, among other interesting aspects. *Eduardo Reyes (Panama) and Wilfrid Saint-Jean (Haiti)* commented on the experiences on their respective countries concerning technology transfer in climate change response strategies.

The general discussion among the participants on the SRTT basically reflected some national experiences in this field, with particular reference to the existing barriers for technology transfer in the developing countries.

Emilio Lebre La Rovere, Centro Clima / COPPE / Federal University of Rio de Janeiro (Brazil), and Lead Author of the Special Report on Emissions Scenarios (SRES) presented the main findings of the SRES.

This basic presentation on the SRES pointed out, among other issues, the following ideas:
What are scenarios?
Why new scenarios?
Basic features of the new scenarios.
Main driving forces of GHG emissions.
How to use SRES scenarios.
Future work on emissions scenarios.
Regional approach: the Latin American Case.

During the discussion on the relevance of IPCC SRES for climate change mitigation policies in Cuba with general reference to the sub-regional context, two discussants presented their comments. *Adriano García (Cuba)* referred to the national experience in the preparation of macroeconomic scenarios of GHG emissions: the methodological approach, main results and proposals for further improvement. *David Pérez (Cuba)* presented national emissions scenarios for the electric sector (reference scenario and mitigation scenarios): basic assumptions and main results.

The Q&A session on the SRES included an interesting debate on the various mitigation options presented by the discussants, specially the nuclear option. Special attention was given to the development of alternative approaches for solving the weaknesses of existing methodologies for building GHG scenarios. It was also recognised the necessity to foster the regional capabilities for integrated assessments and promoting joint efforts in this area of research.

Avelino Suárez Institute of Ecology, Ministry of Science, Technology and Environment (Cuba), and Lead Author of the TAR presented the main findings of the IPCC Special Report on Land Use, Land Use Change and Forestry (LULUCF).

This basic presentation of the SR-LULUCF underlined, among other issues, the following topics:
Global carbon cycle.
Basic definitions
Carbon accounting
Measuring and monitoring
Estimates of average annual carbon stocks.
Project-based activities.
Reporting guidelines for the relevant articles of the KP.
Potential for sustainable development.

Avelino Suárez also referred to the implications of climate change response strategies (mitigation and adaptation) on biological diversity, considering the main findings of the IPCC Technical Paper on Climate Change and Biodiversity (2002).

During the discussion on the relevance of IPCC SR-LULUCF for climate change mitigation policies in Cuba with general reference to the sub-regional context, two discussants presented their comments. Eduardo Calvo (Peru) referred to the complexity of the technical, political

and socio-economic issues related to LULUCF, pointing out the contrasting positions that prevail in the negotiation process under the UNFCCC. Arnaldo Alvarez (Cuba) presented the national efforts in designing and implementing strategies of mitigation that include the forest component.

The general discussion among the participants reflected the complexity of LULUCF issues in the context of the IPCC work and in the negotiations under the UNFCCC and the Kyoto Protocol. It was also discussed the potential for increasing the forest coverage in Cuba as part of certain sectoral restructuring as the recently announced restructuring of the sugar cane agro-industry.

Ramón Pichs, Centre for World Economy Studies (Cuba), and Vice-president of Working Group III of the IPCC presented a synthesis on climate change mitigation and sustainable development, based on the proceedings of the two expert meetings on development, equity and sustainability (DES). The local co-ordinator / rapporteur of this session was Luis Paz (Cuba).

The basic presentation highlighted, among other issues, the following ideas:
Development, equity and sustainability (DES) as key elements of sustainable development (SD) strategies.
DES as a cross-cutting issue of the TAR (particularly for WG II and III).
Results of two IPCC Expert Meetings on DES in the Context of Climate Change: Colombo, Sri Lanka, April 1999 and Havana, Cuba, February 2000.
DES in the Assessment Reports of the IPCC: FAR, SAR and TAR.
Climate change and equity (intra and intergenerational equity; and North-South gap).
DES under the paradigm of Ecological Economics.
Technology and social change.
Spatial and temporal scales.
DES and decision-makers.
Adaptation and mitigation: an integral approach (mitigative capacity and adaptative capacity).
DES in the Synthesis Report of TAR (Question 8 of the SYR).

During the discussion on the lessons of IPCC Expert Meetings on DES for climate change response strategies in Cuba with general reference to the sub-regional context, three discussants presented their comments. Américo Saldivar (Mexico) advocated for the introduction of DES issues in climate change strategies, as well as the implementation of a global tax on GHG emissions that would provide the required financial resources for establishing a fund for development. He emphasised the principle of common but differentiated responsibilities, and referred to the ecological debt of the industrialised countries. Angel de la Vega (Mexico) highlighted the synergies between adaptation and mitigation strategies in dealing with climate change challenges in the regional context. As member of the official delegation of Cuba to the Summit on Sustainable Development, Johannesburg, August 2002, Orlando Rey Santos (Cuba) focused his comments on the results of the Summit, concerning climate change and energy.

The Q&A sessions mainly referred to the future of DES as a cross-cutting issue in the IPCC work, particularly in the AR4.

Final Session: General Discussion and Closure

This session was co-chaired by Abel Centella (National Group on Climate Change, Cuba) and Ramón Pichs (Centre for World Economy Studies, Cuba and Vice-president WG III, IPCC).

The rapporteurs of the various sessions (A to D) presented their reports for comments by the participants. Then, a general discussion was opened, with references to several areas for future work:
Improving the capacity building process in the region, concerning climate change research.
Fostering the exchanges of experiences, research studies, and other scientific results.
Encouraging joint efforts in this field (scientific research).
Promoting regional studies in crucial areas as socio-economic and GHG emissions scenarios for Latin America and the Caribbean, considering the gaps of knowledge in this area.
Increasing the regional/sub-regional participation in the future work of the IPCC (AR4).

The Workshop was closed as expected around 18:00 hours on 24 September 2002, with consensus among the participants that the presentations and discussions were very fruitful for the stakeholders attending the sessions. The organisers expressed their recognition to the Acuario Nacional de Cuba, the UNDP Office, and the interpreters for their assistance during the two-day meeting.

Main results of the Survey distributed in the Workshop

1. Survey response level

Surveys distributed:	**68**		
Surveys collected:	**50**	=>	**73.5%**

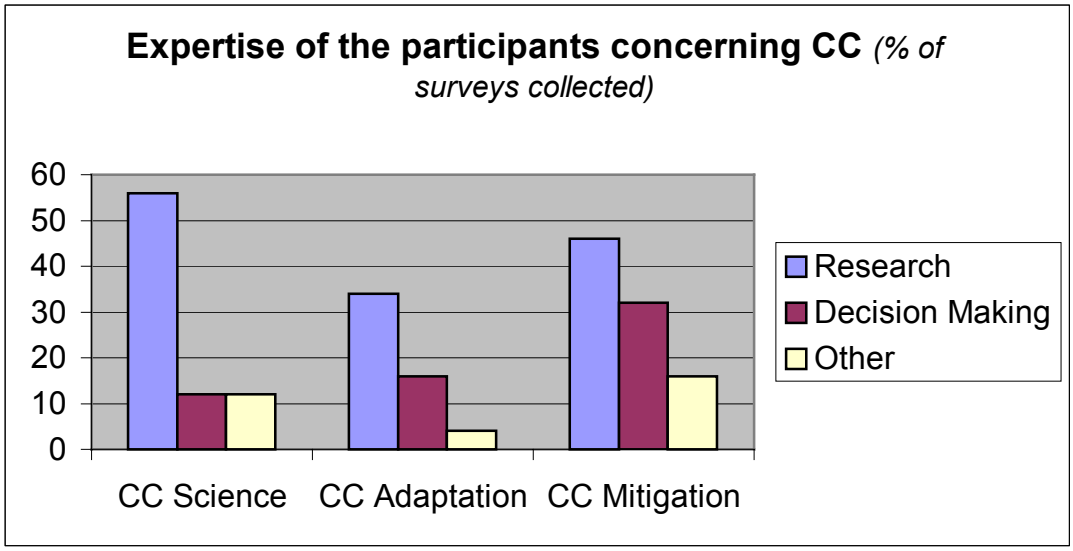
Familiarity of the participants with Climate change issues before the workshop (% of total collected surveys).

Low:	**8.2%**
Medium:	**32.6%**
High:	**59.2%**

Familiarity / expertise of the participants in various areas of Climate Change (% of total collected surveys).

	Research	***Decision-Making***	***Other Activities(*)***
Scientific Aspects.	**56%**	12%	12%
Adaptation	**34%**	16%	4%
Mitigation	**46%**	**32%**	16%

Note: (*) Mainly teaching activities.



4.Familiarity / expertise of the participants in key activities linked to climate change mitigation
(% of total collected surveys).

	Research	***Decision-Making***	***Other Activities(*)***
Energy Sector	***34%***	***28%***	*8%*
Residential Sector	*10%*	*6%*	*4%*
Transport Sector	*14%*	*8%*	*6%*
Industrial Sector	*14%*	*14%*	*6%*
Agricultural Sector	*14%*	*16%*	*10%*
Waste Management	***22%***	*16%*	*10%*
LULUCF	*14%*	*14%*	*8%*
Cost Methodologies	*18%*	*4%*	*0%*
Emissions Scenarios	***26%***	*14*	*0%*
Other activities.	*14%*	*4%*	*4%*

OBS:
More than one third of the participants are involved in energy research activities, and 28% are active in decision making processes on energy issues..
More than one fourth of the participants are familiar with the research work on emissions scenarios; and 22% are involved in research activities on waste management.

Familiarity of the participants with IPCC reports before the workshop
(% of total collected surveys).

Low:	***34.7%***
Medium:	***40.8%***
High:	***24.5%***

OBS:
More than 75% of the participants had a low-medium level of familiarity with the IPCC reports before the workshop.

Importance of the IPCC Reports for the future work of the participants
(% of total collected surveys).

Low:	***0%***
Medium:	***2%***
High:	***98%***

OBS:
Almost all the participants (98%) consider that the IPCC reports will be very important for their future work.

Relevant sources of information on climate change for the participants (% of total collected surveys).

Written press:	*40%*
Radio and TV:	*38%*
Specialised sources:	***52%***
Non-systematic publications:	*37%*
Linkages with individual experts:	***65%***
Seminars/Meetings on CC:	***69%***
Seminars / Meetings on other issues that refer to CC:	*49%*
INTERNET:	***55%***
Other sources:	*14%*

OBS:
The most important sources of CC information for the stakeholders attending the workshop are: seminars / meetings on CC (for 69% of the participants); linkages with individual experts (65%); INTERNET (55%) and specialised publications (52%).

Assessment of the contribution of this workshop for the participants (Scale: 0 to 5, where: '0' = no contribution and '5' = Significant contribution)

Relevant information on the global context (mitigation of CC):	**4.59**
Relevant information on the national context (mitigation of CC):	**4.46**
Interaction with national experts:	4.32
Interaction with international experts:	3.70
Contacts for future activities in this field:	3.70
Diffusion of concepts and technical definitions related to CC mitigation:	**4.53**

OBS:
The workshop was particularly successful in providing relevant CC information on the global and national context; including the diffusion of concepts and technical definitions related to CC mitigation.

Note: This survey was partially based on the survey of the First Seminar of the IPCC WG III Outreach Project Brazil, 5 July 2002

Final Programme

IPCC Outreach Workshop on Mitigation, Havana 2002

Venue: Havana, Cuba (Acuario Nacional de Cuba).
Date: 23-24 of September 2002.
Sponsors:
-IPCC
-UNDP Office in Havana
Local Organisers:
-National Group on Climate Change, based on the Institute of Meteorology, INSMET (IPCC Focal Point in Cuba); in association with the Centre for World Economy Studies (CIEM) of Havana.
Target audience: A representative group of key stakeholders (policy makers, academic experts, NGOs and industry representatives).

Day 1 (23 September 2002)

8:30-9:30 Registration

9:30-10:30 Opening Session
9:30-9:45 *Dr. Pablo Mandeville*. Resident Representative, a.i., UNDP Office Havana.
9:45-10:00 *Dr. Osvaldo Martínez*. President of the Commission of Economic Affairsof the Cuban Parliament, and Director of CIEM, Cuba.
10:00-10:15 Mr. *Abel Centella*. Head of the National Group on Climate Change, and Scientific Director of the Institute of Meteorology, Ministry of Science, Technology and Environment of Cuba.
10:15-10:30 *Dr. Ramón Pichs*. Deputy Director of CIEM, and Vice-president Working Group III, IPCC.
10:30-11:00 Coffee
11:00-11:20 Introduction to the Workshop *(Ramón Pichs, CIEM-Cuba)*

SESSION A:
INTRODUCTION AND IPCC THIRD ASSESSMENT REPORT (SYNTHESIS REPORT)

Resource Person: *Ramón Pichs, CIEM – Cuba (on behalf of Bert Metz, IPCC, Co-Chair WG III).*
Local Co-ordinator / Rapporteur: *Avelino Suárez, CITMA-Cuba.*

11:20-12:00 Basic Presentation on the IPCC and the main findings of the IPCC TAR Synthesis Report (particularly WG III findings) *(Ramón Pichs, CIEM – Cuba, on behalf of Bert Metz, Co-chair WG III-IPCC)*
12:00-13:00 Discussion / Relevance for CC mitigation policies in Cuba with general reference to the regional context.
Discussants: Abel Centella, INSMET – Cuba; Juan Llanes, Havana University;& Brian Challenger (Antigua and Barbuda).
13:00-14:30 Lunch

SESSION B:
IPCC THIRD ASSESSMENT REPORT WORKING GROUP III

Resource Person: *Jose Roberto Moreira, CLA IPCC-TAR, WG III (Brazil).*
Local Co-ordinator / Rapporteur: *Juan Llanes, Havana University – Cuba.*

14:30-15.00 Basic Presentation with Main Findings of TAR WG III *(Jose Roberto Moreira, Co-ordinating Lead Author IPCC-TAR, WG III - Brazil).*
15:00-15:30 General discussion on TAR-WG III
15:30-16:00 Coffee
16:00-18:00 Discussion / Relevance for CC mitigation policies in Cuba with general reference to the regional context.
Discussants: Juan F. Zúñiga, Cubaenergía; Julio Torres, CITMA – Cuba.
19:00 Reception

Day 2 (24 September 2002)

SESSION C:
SELECTED IPCC SPECIAL REPORTS

Resource Persons: *Jose Roberto Moreira (Brazil), Emilio Lebre La Rovere (Brazil), Avelino Suárez (Cuba).*
Local Co-ordinators / Rapporteurs: *Adriano Garcia, INIE; y Julio Torres, CITMA.*

9:00-9:30 Presentation with main findings of IPCC Special Report on Methodological and Technological Issues in Technology Transfer *(Jose Roberto Moreira, Lead Author SRTT, Brazil).*
9:30-10:00 Discussion
Discussants: Alfredo Curbelo, CITMA – Cuba; Eduardo Reyes, Panama, and Wilfrid Saint-Jean, Haiti.
10:00-10:30 Presentation with main findings of IPCC Special Report on Emissions Scenarios *(Emilio Lebre La Rovere, Lead Author SRES, Brazil)*
10:30-11:00 Discussion
Discussants: Adriano García, INIE – Cuba; and David Pérez, Cubaenergía.
11:00-11:30 Coffee

11:30-12:00 Presentation with main findings of IPCC Special Report on LULUCF *(Avelino Suárez, Lead Author TAR, Cuba).*
12:00-12:30 Discussion
Discussants: Eduardo Calvo, Peru; and Arnaldo Alvarez, Institute for Forest Studies - Cuba.
12:30-14:00 Lunch

SESSION D:
SYNTHESIS AND LESSONS FROM RELEVANT IPCC WG III REPORTS.

Resource Person*: Ramón Pichs, CIEM – Cuba.*
Local Co-ordinator / Rapporteur: *Luis Paz, INSMET-CITMA, Cuba.*

14:00-14:30 Presentation on Climate Change Mitigation and Sustainable Development (based on the proceedings of the two expert meeting on DES) *(Ramón Pichs, CIEM – Cuba)*
14:30-15:30 Discussion
Discussants: Angel de la Vega and Américo Saldívar, UNAM - México; and Orlando Rey, CITMA – Cuba
15:30-16:00 Coffee
16:00-18:00: General discussion and Closure *(Co-Chairs: Abel Centella, INSMET Cuba; and Ramón Pichs, CIEM – Cuba)*
Main lessons from IPCC TAR WG III (Synthesis by rapporteurs).
Relevance of IPCC WG III findings for CC national mitigation activities / Challenges and opportunities for capacity building.
Presence / participation in IPCC WG III activities/reports.

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Appendix 1.3 Outreach Report India

Summary of IPCC WG III outreach activity in India

Date: **September 5-6, 2002**
Place: **India Habitat Centre, Lodhi Road, New Delhi- 110003**
Total number of participants: **50**

The two day workshop was organised by TERI on behalf of IPCC (Intergovernmental Panel on Climate Change) to disseminate the recent findings of the IPCC Working Group III report among Indian policymakers, and to discuss their relevance in terms of integrating climate change concerns in the national development agenda. The Government of Netherlands supported the workshop.

The venue of the workshop was Silver Oak Hall in India Habitat Centre (IHC), Lodhi Road which is located in the heart of the city.

Organizational Matters

The registration for the workshop started at 9 in the morning on September 5, 2002. Participants from outside Delhi were either staying in IHC or the places nearby and transport was arranged for them to reach the venue in time for registration.

The reading material sent by TSU along with the material produced by TERI was put in the bag and given to each participant. Wherever the no. of copies were less than the participant number, it was given to the participants who either belonged to research institutes or NGOs or big corporates so that it could be put up in the library and many people could benefit out of it.

Most of the participants were quite comfortable with the arrangements at the workshop. Since TERI informed them well in advance, things worked out smoothly and most of the participants could reach on time for the inaugural session. The material distributed at the workshop was well received and participants showed particular interest in mitigation report of the IPCC, IPCC special report on technology transfer and technical summary of WG I which provided a background for climate change. Apart from this, climate change information kit was well received as a guidebook to climate change. Most of the presentations were well received. The case studies in particular generated lot of interest as the audience tried relating the activities presented in the case studies to their stream of work. The audience had representation from government, research institutes, NGOs and corporates.

The workshop brought together the leading Indian experts on climate change mitigation issues. There was active participation by representatives of relevant departments in the Government of India, as well as leaders in this field from research institutions and non-governmental organizations that are involved in climate change issues. Representatives from leading business houses of India also attended the workshop.

Dr. R K Pachauri, Chairman, IPCC and Director General, TERI inaugurated the workshop and thanked working group III for taking the initiative of disseminating the work of IPCC. He stressed that the work of the IPCC is essentially the basis of our understanding about climate change issues. But there is a need to sensitize all of civil society and the citizens on the major threat of the climate changes that are taking place. He equated climate change with war to stress its seriousness.

Dr. Pachauri further outlined the role of IPCC in the climate change and sustainable development. He explained the structure of IPCC and its mandate. He explained the outputs of the various assessment reports of IPCC. He also gave some tentative thoughts about the fourth assessment report and told the audience that things will revolve around the concept of

sustainable development and investigation into alternate development pattern in the policies which will support this kind of growth.

Ambassador Dasgupta gave a synoptic view of various stages in the international negotiations on climate change. He took the audience through the various landmarks in these negotiations. The first step in this was in 1992, the UN framework convention on climate change which was ready for signature at the Rio summit. The next is the Kyoto protocol, which was ready for signature in December 1997. And the 3rd landmark was the Bonn - Marrakesh accords. This was agreed to in 2001. He explained in detail the framework convention, the Kyoto Protocol and the Bonn Marrakesh accords. The various market-based mechanisms specified in Kyoto Protocol were also discussed. Mr. Dasgupta explained in detail the fallout of the withdrawal of various countries from Kyoto and how it has affected the mitigation efforts.

In his opinion, even though actual emission reduction are going to be fairly modest, in the long run everything will depend on the extent to which action was taken to curb greenhouse gas emissions.

In his presentation titled 'Regional climate scenarios' Dr. Rupa Kumar Kolli of IITM Pune spoke about Climate Scenario Development, observed climatic trends over India, GCM Simulations of Indian Climate, GCM-based Future Climatic Scenarios for India Regional climate models in the Indian context and uncertainties in climate scenarios. He listed five main parameters for the suitability criteria for impact assessment i.e. consistency, physical plausibility and realism, appropriateness, representative-ness and accessibility. Dr. Kumar presented observed climatic trends over India showing various parameters like mean surface temperature, annual summer rainfall, observed and simulated mean annual surface air temperature etc. for the last century, besides coupled GCMs simulations of Indian climate and the Hadley Centre Regional Climate Models. Based on his research, he concluded that Indian summer monsoon relatively stable over the past two centuries on sub-continental/seasonal scale, with the inter-annual variability most dominant though some smaller areas of significant trends do exist. India shares the general global warming but notable differences are seen in terms of diurnal asymmetry. Coupled models indicate general warming and enhanced rainfall conditions over India towards the later half of the 21st century, in a GHG increase scenario; however, there is some disagreement among the models on rainfall changes. Observed data as well as model results indicate circumstantial evidence of the role of global warming in modifying monsoon tele-connections. Regional climate models display good skills in reproducing local features. Preliminary results with HadRM2/HadCM2 indicate general warming into 2050s, but no substantial change in monsoon rainfall.

Dr. R K Pachauri in the overview of working group stressed that mitigation is a complex issue of technology, price, policies, institution and other issues. There is a need to look at environmental, economic, political, institutional, social and technological process when addressing mitigation as several of these mitigation measures also have local benefits. He also stressed the importance of different flexibility measures available to mitigate climate change as they bring down the cost of abatement.

He focussed on Special Report on Emission Scenarios (SRES) scenarios and mentioned that these scenarios have been developed taking into account number of driving forces, which are not merely economic but also social and technological. In his opinion, mitigation is not only driven by technology, but also by economic policies and institutional mechanism.

He emphasized that the problem we are facing today is not due to what is happening today but it is the cumulative result of what has happened over last 150 years ever since industrialization era began. He also projected certain scenarios with different CO2 level concentrations and described how it links with the world GDP. He stressed that the most

efficient way in which the mitigation effort is going to succeed is by way of integrating climate change mitigation matters with economic policies.

Dr. Sujata Gupta gave a detailed presentation on various scenarios related to climate change till year 2100 depending upon the intensity of fossil fuels and other variables. She emphasized that it is not only the emissions now but also the level of concentration of GHGs in the atmosphere, which is important and lead to climate change. She opined that cogeneration is the best option for power generation. She expressed concern that increase in the price of energy will be one of the fallout of mitigation efforts.

She hoped that India will be able to take the benefit of Clean Development Mechanism (CDM) soon and stressed that identification of ancillary benefits for developing countries and governments to assess contribution to the sustainable development. She also gave a brief outline about the PREGA (Promotion of Renewable Energy, Energy Efficiency and Greenhouse gas Abatement Projects), a GHG mitigation project being implemented by ADB.

Dr. Dilip Ahuja gave a summary of the chapter 6 of working group III report i.e. policies, measures and instruments and emphasized that the objective of the chapter is to assess these instruments. According to him, there are five major stakeholders in the climate change arena – coal and oil producers, large users of coal, utility manufacturers of energy using products like automobiles, energy saving products like CFL and environment & civil society organizations and different types of policy instruments will affect different interest groups differently. He mentioned about the important points in the conclusion of the chapter, which indicate that a country can choose from several policy instruments. They are domestic and international and they can be regulatory or market based. He analysed the strength and weakness of the policy instruments and the uncertainties involved with them.

Dr. Ajay Mathur, in his presentation on technology transfer highlighted the concept of mainstreaming. In his opinion, mainstreaming the technology transfer for different reasons including the commercial ones with climate change is important. He talked about the creation of demand and supply for the clean technology based products. He also stressed the role of financier, technology supplier and local intermediaries. Lack of venture capital for initiatives, which are local solutions, is another gap in technology front of climate change.

Mr. A. K. Mehta outlined the Government of India perspective on climate change. He referred back to framework convention to stress that the developed countries should take a lead in combating climate change. He highlighted two basic fundamentals of Government of India, one that it is dealing with climate change on the basis of key ability emission and that they are adhering to the principle of common but differentiated responsibility. According to him, Kyoto Protocol is the best for the time being as a mitigation tool and that the world community should subscribe to it.

In the other part of his presentation, he talked about the mitigation opportunities in India. There is a need for a regime that facilitates technology and other resource transfer without which it will be difficult to sustain the mitigation efforts. He stressed the need to enhance the benefits of climate change efforts by associating them with the broad social developmental objectives.

He outlined specific activities, which can be taken up to combat climate change in various sectors including conventional power, renewables, energy efficiency and forestry. He gave an insight into the CDM projects and explained how government of India dealt with the CERUPT tender floated by Government of Netherlands.

Dr. Y.P. Abbi presented a case study on power sector mitigation opportunities in India. He outlined various areas of power sector where lot of intervention can be done and CDM projects can be constructed. The areas include improvement in plant load factor, efficiency of existing plant, transmission and distribution loss reduction, demand side

management and load management. He further apprised the audience about the two case studies in power sector. A 492 MW refinery residue based power plant that will lead to abatement of approx. 100000 tonnes of CO2 per annum was discussed. Another was a 1980 MW supercritical power plant, which also lead to abatement of approx. 0.65 million tonnes of CO2. The IRR improvement in both the cases was highlighted and it was stressed that there is not much difference in returns at the current prices of carbon credits.

Mr. Pradeep Dadhich presented a case study on energy efficiency and fuel switching in a combination of a sugar and paper mill. He explained the baseline of the project in detail and the interventions that can bring about the change in energy spent per tonne of produce. He also gave indicative figures of the investment required and the amount of emission savings that will take place.

Ms. Akanksha Chaurey focussed her case study presentation on solar technology in rural electrification. She gave an overview of solar technology in India and how it is helping in off grid electrification of remote villages in India. She further explained the intervention done by taking up the example of Chilka area in Orissa State and Sunderbans in West Bengal. She also introduced the concept of mini-grid to the audience. In her opinion, renewables is one of the best examples of development in a sustainable way.

According to Mr. Kaushik Deb, transportation sector has lot of potential for mitigation as the sector is witnessing rapid growth and every vehicle put on the road is a source of emissions in some way. Lack of data availability and credible baselines and no definite scenarios constrain the promotion of GHG abatement projects in this sector. Another problem is heterogeneous nature of the modes of transport. With the rise in number of personal vehicles, there is a higher number of vehicle km to meet the same mobility, which in turn means much higher emissions.

Meeting transport demand in a more sustainable manner and facilitate shift towards more sustainable modes is the key. Improving the system efficiency through efficient traffic management in terms of technology, promoting cleaner fuels and cleaner automobile technologies and improving inspection and maintenance of renewed vehicles are some of the steps which can be taken up to reduce the emissions from the transport sector. Inspection and maintenance is an effort that directly improves the fuel efficiency bringing down the emissions per km run by the vehicle. He also gave the estimates of the cost involved and mitigation achieved.

Dr. Warrilow underlined the importance of IPCC by stating that it presents a wide range of issues and tries to give a balanced picture in the literature pertaining to these issues. According to him, the cost of mitigation would be negligible over the next century if one takes into account the GDP growth of the globe during that period. It will be less than 1% of the global average GDP over next 100 years. He suggested industrial removal of carbon dioxide. He stressed that whatever is being suggested in IPCC reports is doable and the world community should strive to achieve it.

Mr. A K Mangotra stressed the importance of renewables and opined that they have big stake in the efforts to mitigate climate change and that they have well established emissions additionality. Renewables have high sustainable development benefits covering far-flung areas and local environment benefits, employment generation market creation and expansion to attract the MNCs and a measure of local energy security. He explained about the 10% additional capacity from renewables in energy generation sector by 2012 and gave a breakup of various options being looked at including wind, small hydro, biomass and solar. He mentioned about the various CDM projects and expressed concern that the small RE projects suffer from the high transaction cost. He informed the audience that India has been able to achieve only 4.3% of its renewables potential. Various efforts are being made including many studies aimed at CDM to facilitate the take off of the concept. He also

stressed evolution of technology with the CDM projects.

Dr. Ranjan Bose detailed out the disparities in the transport energy demand geographically in his presentation. The ownership pattern of vehicles is quite different in different parts of the world and the energy used in developed world is much higher than the developing world. The rate of growth of transportation demand is very high in the developing world with the increased economic activity. The congestion in the developing world due to poor infrastructure leads to drop in the fuel efficiency. He also gave projections of the future demand in various parts of the world. He stressed the use of public transport system as a high priority area to reduce GHG emissions. Alternative fuel is another area that can be looked at to reduce GHG emissions in transportation sector. He advocated the use of non motorized transport wherever feasible. The governments should facilitate the rapid introduction of these modes of transport.

Questions and Issues Raised

- A participant inquired from Dr. Pachauri whether the IPCC priorities change in tune with the decisions taken at the international summits like Rio or Johannesburg. He also enquired about who is the implementing agency across the world to address climate change. Dr. Pachauri responded by clarifying that IPCC is not the implementing agency. It is a body meant for scientific assessment. The implementation is carried out under some international agreements like Kyoto Protocol. Regarding priorities, he clarified that IPCC is sensitive to the demand of international forums but the decisions at such meetings don't directly affect IPCC work.
- A participant asked Mr. Dasgupta that the measures that are being talked about in US are on the lines of emissions trading, then why it does not sign Kyoto Protocol? Mr. Dasgupta clarified that US clearly announced that the target envisaged in Kyoto Protocol would lead to undue pressure on US economy. Moreover, they will not ratify till developing countries also undertake binding commitments. So their domestic programmes are nowhere near to the Kyoto commitments.
- A participant suggested that if some countries are talking about the per capita emission convergence across the world, there should also be efforts for convergence of per capita income. Dr. Pachauri clarified again here that IPCC does not play any role in this policy matter.
- A large number of participants suggested that TERI should take a lead in developing mitigation projects for different industries in India given the fact that TERI is working in this field for long and has wealth of information.
- There were suggestions that there is a need to link poverty eradication with climate change as it is the poor who suffer the most because of the effects of climate change. Moreover, the funds generated through various mechanisms should be utilized to uplift the poor.
- There was a suggestion after Dr. Ajay Mathur's presentation that there is a need for venture capital for renewable energy industries in India. Dr. Mathur told the audience that a facility exists in World Bank by the name International Finance Corporation (IFC) which provides for such funding.
- Most of the participants expressed concern about the high transaction costs involved in the market based mitigation mechanisms as well as the total time required for a mitigation project to get through and expressed hope that some modalities would be worked out soon which will reduce them to realistic levels.
- Some participants were of the opinion that in mitigation efforts under Kyoto Protocol, a major chunk of proceeds would be taken up by different consultants, operatives etc. and very little would actually go into the hands of project promoters. This point came up for

discussion as the case studies for mitigation proceeded and an outline was drawn regarding the efforts which need to be done for a market based mechanism mitigation project to go through.

IPCC Outreach Workshop on Climate Change: Policy Options For India
Lessons from Working Group III on Mitigation
(5-6 September, 2002)

Silver Oak, India Habitat Centre, Lodhi Road, New Delhi

Agenda

September 5, 2002	
0900 – 0940	**Registration**
0940 – 0950	**Inaugural session**
	Welcome address Dr. R.K. Pachauri, Director General, TERI and Chairman, IPCC
0950 – 1230	**Introduction to Climate Change**
0950 – 1020	**Climate change, sustainable development and role of IPCC** Dr. R K Pachauri, Director General, TERI and Chairman, IPCC
1020 – 1030	**Discussion**
1030 – 1100	**Climate change negotiations – A historical perspective** Ambassador C. Dasgupta, Distinguished Fellow, TERI
1100 – 1120	Tea break
1120 - 1150	**Regional climate scenarios** Dr. Rupa Kumar Kolli, Deputy Director and Head, Climatology & Hydrometeorology Division, Indian Institute of Tropical Meteorology, Pune
1150 – 1200	**Discussion**
1200 – 1230	**Overview of Working Group III** Dr. R K Pachauri, Director General, TERI and Chairman, IPCC
1230 – 1330	Lunch
1330 – 1410	**Mitigation scenarios, Sectoral costs & benefits of mitigation** Dr. Sujata Gupta, Consultant, Asian Development Bank, Manila.
1410 – 1450	**GHG Mitigation- Policies and Instruments** Prof. Dilip Ahuja, ISRO Professor of Science & Technology Policy, National Institute of Advanced Studies, Bangalore
1450 - 1520	**Discussion**
1520 – 1550	Tea Break
1550 – 1630	**Managing technological change in context of FCCC- Opportunities and barriers in developing countries** Dr. Ajay Mathur, Climate Change Program Team Leader, World Bank, Washington, USA
1630 - 1700	**Discussion**

September 6, 2002	
1000 – 1130	**Climate Change & Technological Options**
	Chair: Dr. Sujata Gupta, Consultant, Asian Development Bank, Manila.
1000 – 1030	**Government Perspective on Climate Change**, Mr. A. K. Mehta, Director, MoEF, Government of India
1030 – 1130	**Sectoral case studies on mitigation options in India** Dr. Y.P.Abbi- Power, TERI Mr. Pradeep K Dadhich- Industry, TERI
1130 – 1150	**Tea break**
1150 – 1300	**Sectoral case studies on mitigation options in India** Mr. Kaushik Deb – Transport, TERI Ms. Akanksha Chaurey – Renewables, TERI
1300 – 1400	**Lunch**
1400 – 1430	**Relevance of IPCC WG III for policymakers**. Dr. David Warrilow, Head of Science Policy, Global Atmosphere Division, Department of the Environment, UK
1430 – 1600	**Discussion: Analysis of IPCC WGIII in the Indian context and integration in the national policy framework** Chair: Dr. Ajay Mathur, Climate Change Program Team Leader, World Bank, Washington, USA
	Sectoral priority mitigation options Mr. A K Mangotra, Joint Secretary, Ministry of Non-Conventional Energy Sources; Dr. Ranjan K. Bose, Senior Fellow, TERI
	Industrial sector, technology transfer, and finance (Mr. Sameer Carie, VP, Lafarge India Ltd. Mr. K.S. Kasi Vishwanathan, Seshasayee Paper Mill Ltd..)
1600 – 1620	**Open session & Concluding remarks**
1620 – 1700	**Tea Break**

Description of how this workshop links with the ongoing and future activities

TERI has a dedicated centre for research on climate change, called the Centre for Global Environment Research, which was established in 1989. The primary mission of the Centre is to undertake research and outline effective policy initiatives that integrate developing country concerns in the search for effective and equitable solutions to global environmental challenges. Climate change related activities at TERI cover the gamut of inventory and mitigation analysis, vulnerability and adaptation assessment, policy analysis, capacity building, and outreach. Ongoing projects include the identification and development of CDM and GEF projects in power generation, renewable energy, industrial energy efficiency, etc. TERI is also the lead institute for preparing the GHG inventory from the industrial sector as part of India's first National Communication. Impacts related projects include assessing vulnerability and adaptation in Indian agriculture and preparing socioeconomic scenarios for India for climate change impact assessment. Several research professionals at TERI have contributed to the IPCC process by providing inputs to Working Groups II and III of the Third Assessment Report, and the special reports on LULUCF and Technology Transfer.

TERI works in close association with the Indian government and provides professional and analytical support to the Indian Ministry of Environment and Forest in preparing the Indian negotiating position. It has been approached by the Ministry of Power and Ministry of Non-Conventional Energy Sources to identify and develop CDM projects in India. It also conducts training on climate change issues for officials of the Indian Forest Service, Indian Administrative Service, Ministry of Non-Conventional Energy Sources, etc.

TERI has also provided its expertise to the governments of Bhutan, Laos and DPR Korea in preparing their National Communications to the UNFCCC. In September 2001, with the assistance of the Norwegian Ministry of Foreign Affairs, TERI organized a capacity building workshop on CDM opportunities and the participants for this workshop were drawn from various stakeholder groups from several Asian countries. A climate policy dialogue was also organised in New Delhi in November 2001 with the Institute for Global Environmental Strategies, Japan wherein participants were invited from government, corporate sector, NGOs, and academia to raise issues with policy implications and recommend policy adjustments to enable environmentally sound technologies to penetrate the existing market. A business exchange on CDM and GHG mitigation technologies was also organised in New Delhi in August 2001 with the Australian International Greenhouse Gas Partnerships Office. TERI also hosts the secretariat of the Asian Energy Institute (AEI) network , which aims at knowledge sharing and collaborative research on global environmental issues, and regional energy and environmental security.

TERI has also been promoting environmental concerns in the corporate sector in an effort to green the industry and increase private sector participation in the field of environment. The major thrust area in this is efficient energy consumption, emissions and waste reduction and use of cleaner technologies in industries. As a part of this, TERI is facilitating a Corporate Roundtable on Development of Strategies for the Environment (CoRE) which is a network of leading companies aimed at fostering the adoption of best practices by the Indian industry in environment, health and safety. Efforts are on through different projects within CGER and TERI as a whole to enable industry to make use of the opportunities present internationally to bring in cleaner technologies. These include working closely with the industrial sector to identify and develop CDM projects, and to develop and adapt the unit level GHG monitoring and reporting protocol initiative of the World Business Council for Sustainable Development.

In the light of above mentioned activities undertaken by TERI, this workshop provided a platform for the representatives across various sectors including corporates, government officials, NGOs and research institutes to have a first hand information about WG III report which is a very significant document in the context of climate change. They could also interact with the learned speakers as well as among themselves which lead to the emergence of various issues related to mitigation and how a developing country stakeholders look at it.

Since this workshop was held in New Delhi, only a certain section of policymakers could be targeted. Similar workshops can be planned in various parts of the country targeting the middle level policy makers at the state level as well as the NGOs who work at the grass roots level and can be instrumental in accelerating concern about climate change. Since TERI is also involved in the training programs of Indian Administrative Services officers, programmes focussing on climate change and mitigation can be planned for them.

The workshop was a success with TERI being able to rope in learned faculty from around the world who provided an insight into the new issues emerging out in the global efforts towards mitigation and how this links up with the work done by IPCC in this regard.

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43	Mr.	S C Mishra	BHEL	New Delhi		
44	Dr	Neeti Mishra				
45	Dr	S D Atri	India Meteorological Department	New Delhi		
46	Mr.	B K Tiwary	Planning Commission	New Delhi	3096536	
47	Mr.	S K Panigrahi	Planning Commission	New Delhi	3096666	
48	Dr	Dilip Biswas	Central Pollution Control Board	Delhi	2217078/2431655	
49	Mr.	R P Mehra	Cement Manufacturers Association	New Delhi	576 0347, 573 2332,	cmand@nda.vsnl.net.in
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51	Ms	Savita	Winrock India	New Delhi		

IPCC Outreach Workshop on Climate Change: Policy Options For India
Lessons from Working Group III on Mitigation
(5-6 September, 2002)
Silver Oak, India Habitat Centre, Lodhi Road, New Delhi

Workshop Evaluation: Participant Feedback

What did you find most useful in this workshop?

What aspects should have been given less or more time?

Suggestions for Improvement

Signature (optional)

Name (optional)

Name of Organisation

IPCC Outreach Workshop on Climate Change: Policy Options For India

Lessons from Working Group III on Mitigation

(5-6 September, 2002)
Silver Oak, India Habitat Centre, Lodhi Road, New Delhi

Workshop Evaluation: Participant Feedback

Q.1 What did you find most useful in this workshop?

1. Exchange of views and information from other organizations in the country.
2. Workshop will benefit me for future course of planning the energy efficiency measures in the perspective of climate change.
3. Immediate review and deliberation of the issues discussed in the workshop. Exchange of ideas, knowledge and case studies in regard to climate change.
4. The success stories detailed and the lessons to be drawn would go a long way to create confidence in the whole initiative for private-public partnership in taking the mitigation efforts forward.
5. Spectrum of participants and issues.
6. Exposures to national and international initiatives in addressing core issues.
7. Prospects of climate change acting as a facilitator for efficient technology transfer.
8. Meeting several people with similar interests.
9. Lessons from national and international experiences.
10. Experiences from different speeches given by the speakers which varied from policy to reality. Enriching exchange of views.
11. In this 'paucity of fund' – CDM can help in taking up the needed projects
12. Variety of case studies highlighting roadblocks and successes.
13. Practical aspect of implementation of different projects.
14. Experiences of international agencies in climate change related efforts.
15. Good knowledge about climate change and how to streamline the processes.
16. Vast spectrum of case studies.
17. Practical aspects highlighted through on-field experiences.
18. The cogeneration case study was a highly educative one. Logistics of the workshop and planning of its sessions.
19. This is most useful since it has elevated knowledge in respect of public and institutional participation in the sphere of GHG mitigation
20. Exchange of good positive experiences and short, clear presentations.

Q.2 What aspects should have been given less or more time?

1. It was quite balanced.
2. Overview of successful case studies.
3. Specific case studies should have been given more time
4. Sectors, where we are linked with daily work, were given less time.
5. Specific case studies and lessons learnt could have been given more time. Generalizations should have been less.
6. Past lessons from failures/success in mitigation efforts may be emphasized in greater detail.
7. Details of regulatory measures, risk sharing and mitigation, and options to attract private investment in GHG mitigation projects along with ways of inducing financial institutions to lend more should be discussed more.
8. GHG mitigation should be given more time and attention in all the sectors.
9. More time should have been given with more case studies of national and state level efforts for mitigation.
10. More time for sharing on field experiences and potential for replication in the community/institutional context.
11. Details of structuring appropriate policies should have been included. Methodology of building organizational capacities to undertake different mitigation ventures should have been brought out.

Q.3 Suggestions for improvement.

1. Well planned and well designed. Excellent work.
2. Excellent speakers. Wish there was more time per session. This should be factored in the next time.
3. View of greater numbers of stakeholders would be very useful. More interactive sessions
4. More time may be given on important case studies with exchange of views/experiences. Discussions, in-groups, on specific points with reference to specific case studies to find out defects in the system that need to be removed for improvement.
5. I think this is a new concept. Much sharing of knowledge & experience is needed. So such seminars and workshops should be held often involving the local bodies and governments.
6. A team should be formed for giving suggestions to various stakeholders. These presentations may be given on a CD to them.
7. List of participants under relevant details may be circulated well in advance so that one could come well prepared and derive maximum benefit out of these workshops.
8. More participation should be ensured. Greater use of media to generate awareness among citizens of India/globally.
9. Workshop as a whole has been very well organized. First day's proceedings covered the theory part whereas second day introduced the practical aspect.

10. The workshop should include the private sectors as well as financing institutions more extensively to get more specific views regarding CDM projects.
11. More groups discussions. Otherwise, excellent facilities and speakers.
12. These workshops/seminars/discussions should be held more often. Distribution of papers, to be presented well ahead (if possible, 7 days) of the workshop/seminar.
13. Climate change should be considered, right from the planning process otherwise, introduction of GHG mitigation in the intermediate stage may be costly and/or calls for repetitive planning works at later stage while considering provision/augmentation of different projects.
14. There should be more focus on lessons learnt. Highlighting of loopholes/weak areas is essential.
15. For better dissemination: eminent media personnel should be allowed to speak to gauge the understanding of common people and to create awareness regarding the mindset of policy makers in the coming days.
16. More emphasis on onfield experiences - sharing facilitating recommendations/suggestions tuned to the ground scenarios.
17. Include ways and means for changing the mindset of policymakers and primary stakeholders.
18. The seminar/workshop imparts knowledge, no doubt. But the field level feedback is a must at regular interval. This will enhance proper knowledge for future work.
19. Seminars/workshops are to be organized not only for officials/chairman of organizations but also for all officials working at the local body level. I think successful implementation of projects/schemes for new thoughts in changing circumstances are very much dependant, to a great extent, on the will of local officials.
20. Excellent workshop and an excellent venue. Well run and well organized. Congratulations to the organizers.

Event on the Web

All the presentations of the event along with the agenda are uploaded on the website of TERI for greater outreach among people.
The URL of the website is: http://www.teriin.org/events/docs/ipccwg3.htm

Outreach Workshop on Climate Change: Policy Options For India

Lessons from Working Group III of the IPCC.

5-6 September 2002, TERI New Delhi.

Background Paper

Supported by Government of Netherlands

Background

Anthropogenic activities are responsible for a change in climate. The earth's climate has been evolving continuously over several millennia but the last two centuries have witnessed the development of the greenhouse problem, which threatens to change climate in an unprecedented manner.

The greenhouse problem is created due to excessive accumulation of greenhouse gases (GHGs) in the atmosphere. The main GHGs are carbon dioxide, methane, nitrous oxide, ozone and chloroflurocarbons (CFCs). Except for CFCs the rest of the gases occur naturally together making up less than 1% of the atmosphere. The naturally occurring greenhouse gases allow incoming ultraviolet solar radiation to pass through relatively unimpeded, but partially absorb and re-emit outgoing infrared terrestrial radiation. This natural process raises the earth's average temperature from -18 °C to +15 °C, and is hence, vital for life on earth.

However, since the Industrial Revolution, such anthropogenic activities as energy generation from fossil fuels and deforestation have been increasing the atmospheric concentrations of greenhouse gases beyond their natural levels, resulting in an enhanced greenhouse effect. This has caused an increase in global temperatures, a phenomenon known as **global warming**. This warming can be amplified through positive feedback, such as increases in water vapour, or reduced through negative feedback, such as increases in stratospheric aerosols. The sum of all these potential changes is referred to as **climate change**.

Climate change was first recognized as a problem of global magnitude and immediate concern in the 1980s with the occurrence of unusually warm summers in the United States. Severe storms, floods, and droughts in the last decade have served as reminders that urgent action is required to control the increase in concentrations of greenhouse gases. Measurement records suggest that the world has already warmed by 0.3 to 0.6 °C since 1860 and the last two decades have been the warmest. Evidence is getting stronger that the warming being experienced at present is anthropogenically induced. The IPCC (Intergovernmental Panel on Climate Change) has recently completed its Third Assessment Report, which incorporates new results from the last 5 years of climate change research. The global average surface temperature is projected to increase by 1.4 °C to 5.8 °C over the period 1990 to 2100. This projected warming will be greater than that experienced over the last 10,000 years. Such a rapid rate of change will leave ecosystems less time to adapt making them more vulnerable to the phenomenon of climate change. Moreover, the global mean sea level is projected to rise by 0.09 to 0.88 metres over the same period, as a result of the thermal expansion of the oceans, and the melting of glaciers and polar ice sheets.

Impacts of climate change

Changes in surface air temperature and sea level could change precipitation quantity and pattern, vegetation cover, and soil moisture. Further, regional temperature changes could be substantially different from the global average, and the frequency, intensity, and duration of storms and other extreme weather events could increase.

With unmitigated emissions, substantial dieback of tropical forests and grasslands is predicted to occur by the 2080s, particularly in parts of South America and Africa. There could be large decreases in the availability of water from rivers in Australia, India, Southern Africa, South America, Europe and the Middle East. As a consequence of climate change, cereal yields in Africa, the Middle East, and India are expected to decline. Greenhouse-induced sea level rise could have a number of physical impacts on coastal areas, including loss of land due to inundation and erosion, increased flooding, and salt-water intrusion. These could adversely affect coastal agriculture, tourism, freshwater resources, fisheries and aquaculture, human settlements and health. There could also be significant impacts on human health, due to the increased incidence of heat stresses, malaria, and other vector-borne and water-borne diseases.

For developing countries that are facing the challenges of population and economic growth, climate change represents an additional stress. India is highly vulnerable to climate change as its economy is heavily reliant on climate-sensitive sectors like agriculture and forestry, and its low-lying densely populated coastline is threatened by a potential rise in sea level.

Agriculture

Global circulation models indicate that India's climate can become warmer as levels of CO_2 increase in the atmosphere. Sixty five per cent of Indian agriculture is heavily dependent on rainfall. Indian agriculture is also restricted by a lack of complementary inputs and institutional support systems.

Agricultural productivity can be affected in two ways: directly, due to changes in temperature, precipitation or CO_2 levels, and indirectly, through changes in soil, distribution and frequency of infestation by pests, diseases or weeds.

Several studies predict that rice and wheat yields could decline considerably with climatic changes in India. Sinha and Swaminathan (1991) estimate that a 2°C increase in mean air temperature could decrease rice yield by about 0.75 ton/hectare in the high yield areas and by about 0.06 ton/hectare in the low yield coastal regions. Further, a 0.5°C increase in winter temperature would reduce wheat crop duration by seven days and reduce yield by 0.45 ton/hectare. An increase in winter temperature of 0.5 °C would thereby translate into a 10% reduction in wheat production in the high yield states of Punjab, Haryana and Uttar Pradesh. Rao and Sinha (1994) in their crop-simulation study estimate that under a 2 × carbon dioxide climate change scenario[23], wheat yields could decrease by 28%–68% without considering the carbon dioxide fertilization effects.

The vulnerability of agricultural production depends on the physiological response of the plant as well as the ability of socio-economic systems of production to cope with the changes. The loss in farm-level net revenue will range between 9 and 25% for a temperature rise of 2-3.5°C (Kumar and Parikh 1998). A rise in mean temperature of 2°C and a 7% increase in mean precipitation will reduce net revenues by 12.3% for the country as a whole. Agriculture in the coastal regions of Gujarat, Maharashtra and Karnataka is likely to be affected negatively. Small losses are also indicated for the major foodgrain-producing regions of Punjab, Haryana, and western Uttar Pradesh (Sanghi, Mendelsohn and Dinar 1998).

[23] Doubling of carbon dioxide concentrations relative to pre-Industrial Revolution levels

Forests

Climate-induced changes in the productivity and configuration of forest ecosystems can have a serious impact on traditional livelihood, industry, biodiversity, soil and water resources, and agriculture

Increased temperature and rainfall could increase the productivity of tropical forests, cause migration of forest types to higher elevations, and transform drier forest types to moister ones (Ravindranath and Sukumar 1998).

It is estimated that the decline in soil moisture caused by warmer temperatures will reduce teak productivity from 5.4 m^3/ha to 5.07 m^3/ha (Achanta and Kanetkar 1996). The same study suggests that a decline in the productivity of moist deciduous forests may take place, from 1.8 m^3/ha to 1.5 m^3/ha.

Coastal areas

India's coastline is about 7500 km long and is densely populated as well as low-lying.

Most of India's coastal regions are fertile and under paddy cultivation, which is sensitive to inundation and salinization. Coastal infrastructure, tourist activities and onshore oil exploration are also at risk.

Variations in climatic patterns are expected to result in an increase in the frequency and intensity of extreme events such as cyclones. These will greatly affect the population in coastal areas and may cause devastation in low-income rural areas as exemplified by the cyclone that hit Orissa in 1999.

A 1 - metre rise in sea level is expected to inundate about 1700 km^2 of agricultural land in Orissa and West Bengal (IPCC 1992).

In the absence of protection, Asthana (1994) showed that a 1- metre rise in sea level will affect an area of 5763 km^2 and put 7.1 million people at risk. 83% of all damages will be because of land loss, but the extent of vulnerability will also depend upon physical exposure and the level of economic activity in the region.

TERI developed a district-level ranking of vulnerability to one-metre sea level rise by constructing a weighted index. The estimated economic costs of this rise range from Rs 2287 billion in the case of Mumbai to Rs 3.6 billion in the case of Balasore.

It is becoming increasingly evident that much of the change in the climate that is being experienced at present is anthropogenically induced. Therefore, in order to prevent any further dangerous interventions with our climate system, meeting our commitments under the UNFCCC has become ever more important. Although developing countries are not under any obligation to reduce their emissions, achieving the goal of emissions stabilisation would require developing nations to switch to a more sustainable form of development, which is less energy intensive and more environmentally benign without compromising their economic growth. To enable these countries to make this transition would require not just assistance in the form of technology transfer but would also require capacity building for developing greenhouse gas mitigation options within their own countries.

In India, various ministries have taken some steps towards the mitigation of GHGs in their respective areas.

The government of India has come out with a detailed plan of energy efficiency across all sectors of Industry and power. The power ministry is coming up with new technology plans as well as improving the efficiency of old plants by way of renovation and Modernisation. In the demand side, lot of energy efficiency measures as well as energy audits is being suggested.

The Ministry of Non- Conventional Energy Sources has ambitious plans of having 10% of the additional installed power generation from renewables by 2012. The ministry

through implementing agencies like IREDA (Indian Renewable Energy Development Agency) facilitates the implementation of various renewable energy projects through soft loans and other subsidies.

Many NGOs are involved in the process of capacity building and creating awareness about climate change and how it affects human life.

There is a need for some policy intervention so that the abovementioned concerns are taken into account while drafting the national development policies.

Workshop approach

To address the above issues TERI is organizing a workshop on **'Climate Change: Policy Options for India'** in New Delhi on the 5th and 6th of September 2001. The workshop is being organized on behalf of IPCC (Intergovernmental Panel on Climate Change) to disseminate and generate understanding of the main findings of the third assessment report of IPCC Working Group III. The workshop will provide a forum to develop understanding of the issue of greenhouse gas mitigation, with a view to encouraging indigenous development and adaptation of technology and policy solutions to address climate change. The participants will include representatives from the government, research institutions, academic institutions and NGOs from India.

The main goal of the workshop is to disseminate and generate understanding of the main findings of the IPCC's technical assessment reports. This would sensitize and strengthen the capacity of targeted stakeholders to contribute towards global efforts to address the challenge of climate change. Various mitigation options with respect to India will be discussed along with some case studies so that the participants are able to correlate and integrate GHG mitigation aspects in the process of policy making for the country as well as their respective organizations. Representatives of Indian government and industry will also share their views with the workshop participants.

Through this outreach activity, TERI will attempt to sensitize and strengthen the capacity of the targeted stakeholders. The participants would be informed of the important IPCC sources of information available and how they might access updated information at all times. The findings of the IPCC WGIII in particular will be discussed in the context of the country's national circumstances and priorities, and used to develop ideas and identify scope for action. This will also involve outlining the role of various stakeholders, and identifying institutional and policy needs.

The workshop will provide a forum to not just disseminate the work of the IPCC, but to also develop a country-specific understanding of the issue of greenhouse gas mitigation, with a view to encouraging the indigenous development and adaptation of technology and policy solutions to address climate change. In so doing, the workshop will look beyond short-term imperatives and attempt to provide insights into the need for a longer-term equitable and effective solution to climate change.

India's developmental and local environmental priorities are of immediate importance, yet the implications of climate change for the country, as indicated by all scientific assessments, are also grave. The proposed activity will reach out to decision-makers and managers informing them of the latest scientific know-how and assessments compiled by IPCC. This would strengthen the linkage between the scientific and other stakeholder communities in the country. The participants would be informed of the IPCC technical reports and the relevance of the findings in the Indian context would be analysed. The participants would further be familiarized with all possible IPCC sources of information and how these sources may be accessed.

Although developing countries are not under any obligation to reduce their GHG emissions but in order to contribute to the global efforts to mitigate climate change, they

would have to adopt a sustainable mode of development. In view of this, India is a country where immense mitigation opportunities exist. The workshop has been designed to highlight issues of technological transfer and related policy requirements. Sensitising the policy makers and the managers to this would open up areas for investments in ESTs supported and facilitated by suitable policy interventions.

As India is the venue for the 8th session of COP, the timing and venue of the workshop is opportune. The workshop would help to provide insights into several issues of climate change and help participating government departments to develop their points of view and consolidate the national negotiating position for the forthcoming session of COP. The organization of this workshop in a large developing country like India that is expected to host the next Conference of Parties to the UNFCCC will help enhance capacity and raise the general level of awareness regarding climate change in the region. By educating relevant stakeholders about climate change issues and solutions, it would create awareness, concern, and empowerment though information in the country.

The expected outcomes of the outreach workshop are Sensitization of participants to the FCCC process, recent developments and key issues in international climate change negotiations

Enhanced understanding of the IPCC and its reports particularly the working group III report on mitigation. Improved capacity for project ideas as well as integration of GHG mitigation in the national policies.

Greater awareness of the ways to maximize national sustainable development benefits through various mitigation options available as well as international mechanisms available for their financing.

Useful links

Asia Least-cost Greenhouse Gas Abatement Strategy: India
http://ntweb03.asiandevbank.org/oes0019p.nsf/pages/INDIA_ES
India's first National Communication to the UNFCCC
www.natcomindia.org
India Meteorological Department
www.imd.ernet.in
Intergovernmental Panel on Climate Change
www.ipcc.ch
Ministry of Environment and Forests, Government of India
www.envfor.nic.in
TERI
www.teriin.org/climate/climate.htm
United Nations Framework Convention on Climate Change
http://unfccc.int
World Meteorological Organisation
www.wmo.ch

CDM and carbon trading

Chicago Climate Exchange
www.chicagoclimatex.com
The goal of the program is to design and implement a voluntary 'cap-and-trade' market for greenhouse gases. Primarily based in US Midwestern states, CCX has been able to increase its penetration of existing sectors in both the United States and Canada as well as European

Union-based companies with North American operations and new participants in Mexico and Brazil.

CO2e.com

www.co2e.com/

CO2e.com has been formed by the Cantor Fitzgerald group in association with PricewaterhouseCoopers. Both Cantor Fitzgerald and PricewaterhouseCoopers are organizations with a substantial track record in helping businesses engage in carbon commerce. CO2e.com incorporates both a marketplace and a full suite of online carbon commerce support including: a web-based broker-assisted marketplace for the trading of emissions reductions, a daily news service, briefings & insights, a specialized search engine, online business & trading tools, a global register of recognized climate change consultants and experts.

International Emissions Trading Association

www.ieta.org

The International Emissions Trading Association (IETA) is committed to establish a functional international framework for trading greenhouse gas emission reductions. IETA members seek to develop an emissions trading regime that results in real and verifiable greenhouse gas emission reductions while balancing economic efficiency with environmental integrity and social equity.

Prototype Carbon Fund

www.prototypecarbonfund.org

The PCF is intended to invest in projects that will produce high quality greenhouse gas emission reductions that could be registered with the United Nations Framework Convention on Climate Change (UNFCCC) for the purposes of the Kyoto Protocol. To increase the likelihood that the reductions will be recognized by the Parties to the UNFCCC, independent experts will follow validation, verification and certification procedures that respond to UNFCCC rules as they develop.

Senter – Carboncredits.nl

www.carboncredits.nl

Carboncredits.nl helps companies investing in renewable energy and energy efficiency in developing countries or in Central and Eastern Europe improve the return on their investments. Through Carboncredits.nl the Dutch government buys the reduction in greenhouse gas emissions (carbon credits) that these projects generate, thus creating an additional source of income to boost the economic feasibility of projects and accelerate their implementation. Carboncredits.nl helps companies investing in renewable energy and energy efficiency in developing countries and in Central and Eastern Europe improve the return on their investments.

UK Emissions Trading Scheme

www.uketg.com/

The UK emissions trading scheme is the world's first economy-wide greenhouse gas trading scheme. Several organizations have voluntarily taken on a legally binding obligation to reduce their emissions against 1998-2000 levels, delivering over 4 million tonnes carbon dioxide equivalent emission reductions by the final year of the scheme. More details are available at www.defra.gov.uk/environment/climatechange/trading/index.htm

UNFCCC CDM website

http://unfccc.int/cdm

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Appendix 1.4 Outreach Report Russian Federation

IPCC WGIII Outreach Activities: Eco-Accord report on the project 'Raising Awareness on Benefits and Cost of Climate Change Mitigation in Countries with Transition Economy'

In April, 2002, ECO-Accord started a project RAISING AWARENESS ON BENEFITS AND COST OF CLIMATE CHANGE MITIGATION IN COUNTRIES WITH TRANSITION ECONOMY'.
The goal of the project was to raise the capacity of Russian and other NIS stakeholders in using the information of IPCC reports for further national analyses and decision making in the area of climate change mitigation and to provide public support to the IPCC Working Group III reports.
The project was implemented in cooperation with the Ministry for Power Industry of the Russian Federation, Russian Federal Service for Hydrometeorology and Environmental Monitoring, Committee on Environment of the Russian State Parliament, Russian Academy of Science, Russian Regional Environmental Centre (RREC), Regional Environmental Centre for Central Asia, US Environmental Defense. Those agencies play essential role in climate policy making process in Russian Federation and are the main beneficiaries for The third IPCC assessment report

The Project was focused on the following target group:
- Russian decision makers in the field of climate change and related economic spheres;
- NIS academic experts;
- Business;
- NGOs

The project helped to:
1. Disseminate the main findings of the WGIII with particular focus on benefits of GHG reduction and instruments to implement aggressive GHG reduction policy;
2. Popularize WGIII results in the NIS;
3. Influence Russian policy on climate change and facilitate the ratification process in Russia and the NIS;
4. Strengthen Russian NGO coalition on climate change;
5. Provide training to 13 specialists from the NIS on cost-benefit analysis of climate change mitigation.

Implemented activities

1. THREE MONTH ELECTRONIC INFORMATION CAMPAIGN (April-June, 2002) to inform the targeted audience about the main findings of the IPCC WGIII with particular focus on benefits of GHG reduction and instruments to implement aggressive GHG reduction policy.

Targeted audience:
- Russian decision makers in the field of climate change and related economic spheres;
- NIS academic experts;
- Business;
- NGOs;
- broad public

2. THREE –DAY WORKSHOP (Moscow, May, 20-22, 2002):
- for the decision-makers from Russia
- for academic experts, business, NGOs from the NIS

The first day of the workshop was focused on Russian decision makers representing Russian ministries and other official structures.
Next two days were focused on academic experts, business and NGOs from the NIS.
Program of the workshop (see Attachment 1)
Outcomes of the workshop (see Attachment 2)

3. PRESS-CONFERENCE (May, 20, 2002) was focused on the workshop results
Russian decision makers and IPCC experts were invited as speakers
23 media representatives from central media participated.

The following experts took part in the press-conference:
- Mark van Wees, RIVM
- Vitaly Matsarski, UNFCCC Secretariat
- Eugene Utkin, Russian Federal Service for Hydrometeorology and Environmental Monitoring
- Alexander Popov, Ministry of Energy of the Russian Federation
- Georgy Golitsyn, academician, director of the Institute of Physics of Atmosphere, Russian Academy of Science
- Olga Speranskaya, Eco-Accord
- Alexey Kokorin, WWF-Russia
- Alexander Golub, Environmental Defense
- Dmitry Kavtaradse, Ministry of Transport of the Russian Federation

List of media (see attachement 3)
Press-release (see attachment 4)
Examples of publications (see attachment 5)

4. PREPARATION OF A BROCHURE IN RUSSIAN BASED ON THE WORKSHOP RESULTS 'GLOBAL WARMING: HOW TO MITIGATE CLIMATE CHANGE?'

The brochure contains summary of the main findings of the WGIII and key materials presented at the workshop. Brochure has been widely disseminated among interested decision makers, organisations, key experts and NGOs.
In electronic format the brochure can be downloaded from Eco-Accord website: http://accord.cis.lead.org
In printed format if can be obtained from Eco-Accord office or ordered by phone or e-mail free of charge.
Circulation - 500 copies
Volume – 60 pages
Copies of the brochure (Attachment 6)

1.
DESCRIPTION OF INFORMATION DISSEMINATED IN ELECTRONIC FORMAT
(April – June, 2002)

Information dissemination was coordinated and supervised by Eco-Accord. Information was prepared and edited by Eco-Accord in cooperation with the Russian government, IPCC WG III experts and Environment Defense.
Information was disseminated in electronic format via Eco-Accord news service. Eco-Accord electronic news service covers more than 2500 subscribers in Russian and other NIS countries.

The following materials were prepared and disseminated via Eco-Accord news service
Information about IPCC and the activity of IPCC WG III

- General presentation about IPCC
- General information about the activity of the Third Working Group of IPCC
- Major research findings of the Third IPCC Working Group. Their applicability for political decisions and further scientific research
- History of the preparation of the Third Assessment Report on climate change mitigation
- Presentation made by Dr. Bert Metz at COP-7 (Marrakesh, November, 7, 2001)
- Brief summary of the Third Assessment Report on Mitigation of Climate Change.

General IPCC conclusions
- Climate change and sustainable development
- Institution development and instruments for climate change mitigation.
- Scenarios of GHG emissions: technological and economic potential of economies in transition
- General IPCC conclusions on global and regional benefits and costs of climate change mitigation.
- Indirect costs and benefits of greenhouse gas mitigation options and ancillary benefits and concepts of climate change mitigation.
- Land use and forestry issues in the Third Assessment Report on climate change mitigation
- Transport policy and climate change
- Technological and economic potential of greenhouse gas emissions reduction
- Technological and economic potential of options to enhance, maintain, and manage biological carbon reservoirs
- Barriers, opportunities, and market potential of technologies and practices

Practical implementation of IPCC findings in Russia
- Russian energy policy: perspectives of Russia in GHG emission reduction
- Ratification and domestic regulation: IPCC findings and Russian government position towards the ratification of Kyoto Protocol
- Transport and oil export – Russian oil markets and GHG emission reduction
- Regional and global benefits and costs of climate change mitigation.
- Economic valuation of co-benefits case study for Russia.
- Measures to reduce climate change in electric energy power of Russia

- Capacity of Russian forestry sector for mitigation of adverse effects of climate change: applicability of research findings of the third IPCC working group to Russian forest management practice
- Perspectives of attracting investments into regional projects on GHG reduction in Russia. applicability of IPCC special report on methodological and technological issues in technology transfer in Russian regions.

Practical implementation of IPCC findings in the NIS
- Climate change mitigation: benefits and perspectives of economies in transition
- Practical implementation of IPCC WGIII recommendation in Armenia, Azerbaijian, Moldova, Ukraine, Tajikistan, Kazakhstan.
- Influence of Kyoto mechanisms on different sectors of the economy in the NIS

International cooperation
- International co-operation and national actions; flexibility mechanisms of Kyoto protocol within the context of research findings of the third IPCC working group
- Possibilities to attract resources of GEF and other IFO to projects on climate change mitigation in the NIS

The first draft of the brochure 'Global Warming: How To Mitigate Climate Change?' was prepared specifically for the workshop. It was put on Eco-Accord website: http://accord.cis.lead.org and printed in 200 copies. The brochure was disseminated among workshop participants only.

It contained the following information:
- Editorial
- Relevance of the findings of the Third IPCC Working Group for economies in transition
- Review of IPCC Third Assessment Report
- Technological solutions to mitigate climate change

2.
THREE –DAY WORKSHOP (Moscow, May, 20-22, 2002)
'MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE IN ECONOMIES IN TRANSITION: ADVANTAGES AND PROSPECTS OF GHG EMISSION REDUCTION'

The workshop was organised by Eco-Accord in close cooperation with the Ministry of Energy of the Russian Federation, the Ministry of Natural Resources, Russian Federal Service for Hydrometeorology and Environmental Monitoring, Committee on Environment of the State Russian Parliament. These governmental organizations play significant role in the ratification process of Kyoto Protocol and further in forming GHG management system.

Workshop target group
- Russian decision makers in the field of climate change and related economic spheres;
- NIS academic experts;
- Business;
- NGOs

The workshop was attended by 140 participants including:
30 representatives of Russian key ministries
13 NIS representatives
33 scientific community
28 NGOs
12 business community
20 representatives of international organisations
4 representatives of Regional Environmental Centres

Workshop program (see Attachment 1)

To analyze materials of the workshop a **WORKING GROUP** was formed. It was represented by the following key people:

- Georgy Golitsyn, Institute of physics of atmosphere, Director, Academician;
- Igor Mohov, Head of the Russian Association of Meteorology and Atmospheric Science, Professor;
- Alexander Metalnikov, advisor to the Head of the Russian Federal Service for Hydrometeorology and Environmental Monitoring;
- Oleg Plujnikov, Head of the Department, the Ministry for Power Industry of the Russian Federation;
- Mikhail Yulkin, assistant to the Chairperson of Committee on Environment of the Russian State Parliament;
- Anil Markandya, IPCC expert;
- Alexander Golub, Environmental Defense, IPCC expert;
- Olga Speranskaya, deputy director, ECO-Accord;
- Vasily Sokolov, Head of the Department, Institute of USA and Canada, Russian Federation, IPCC expert.

INVITED SPEAKERS:
Russian decision makers:

- Vladimir Grachev, Chairman of the Environmental Committee of the State Duma of the Russian Federation
- Alexandr Kosarikov, Deputy Chairperson, Committee on Environment of the Russian State Parliament;
- Alexandr Isaiev, Director of the International Forest Institute
- Anatoly Nasonov, First Deputy Minister of Transport
- Vsevolod Gavrilov, Ministry of Economic Development and Trade
- Eugene Utkin, State Committee for Hydrometeorology of the Russian Federation
- Alexandr Popov, Head of the Department, Ministry of Energy of Russia
- Oleg Plujnikov, deputy head of the Department, the Ministry for Power Industry of the Russian Federation;

Scientists

- Yu. Israel, Institute of Global Climate and Ecology, Director, Academician, IPCC Co-Chair;
- Goergy Golitsyn, Institute of physics of atmosphere, Director, Academician;
- Igot Mohov, Head of the Russian Association of Meteorology and Atmospheric Science, Professor;
- Georgy Gruza, Institute of Global Climate and Ecology, Professor

Russian experts
- Vladimir Berdin, Centre of the realisation of international projects of technical assistance
- Alexandr Panfilov, Deputy chair of the Organizing Committee of the Conference 'Participation of Russia in the implementation of Kyoto mechanisms'
- Mikhail Ulkin, Centre of Environmental Investments, Arkhangelsk region
- Alexandr Averchenkov, Director, Russian Program of Environmental Investments
- Alexandr Cherni, General Director, Association of Russian mining towns
- Alexandr Rogankov, Vice-Chair, Energy and Carbon Fund, RAO UES of Russia

IPCC experts:
- Bert Metz, Co-Chair of the Third IPCC Working Group
- Anil Markandya, Leading economist, The World Bank, IPCC expert;
- Olga Krankina, IPCC expert
- Alexandr Golub, economist, Environmental Defense, IPCC expert;
- Vasily Sokolov, Head of the Department, Institute of USA and Canada, Russian Federation, IPCC expert.
- Georgy Grusa, Institute of global climate and ecology, IPCC expert
- Serguey Bobylev, Moscow State university

International experts:
- Vitaly Matsarski, UNFCCC Secretariat
- Mark van Wees, RIVM
- Daniel Emery, Australian Embassy in Moscow
- Alexander Kafyrov, British Petroleum
- Lyia Korobova, British Embassy in Moscow
- Annie Petsonk, senior layer, Environmental Defense
- Melissa Carey, Environmental Defense
- Georgy Safonov, Environmental Defense
- Olga Gassan-zade, Centre for Clean Air Policy, USA
- Natalia Korobova, DANCEE
- Yuri Kazakov, USAID
- Elena Bondarchuk, ROLL

NIS experts:
- Natalia Mikhailenko, Regional Environmental Centre for Central Asia
- Victor Cotruta, Regional Environmental Centre, Moldova
- Mikhail Vermishev, Ministry of Nature Protection, Armenia
- Raphic Verdiev, Afat Bairamova, Department of water resources of the Southern part of Caucasus region, Azerbaijian
- Roman Corobov, US-Moldova project on climate mitigation, Moldova
- Muzafar Isobaev, Tajik technical university

FIRST DAY OF THE WORKSHOP WAS FOCUSED ON DECISION-MAKERS FROM RUSSIA, mainly on representatives of Russian Ministry of Economic Development and Trade, Ministry of Energy, Russian Federal Service for Hydrometeorology and Environmental Monitoring, Ministry of Natural Resources, Committee on Environment of the Russian State Parliament, Ministry of Transport, representatives of Russian regional authorities took part in the workshop.
The clear objective of the first day of the workshop was to bring together key Russian decision makers involved in Kyoto Protocol ratification and post ratification design of GHG

emission management system and present them strong economic evidence about benefits of aggressive GHG control policy.

The program included:

- General presentation about IPCC and WGIII.
- Brief summary of the Third Assessment Report on Mitigation of Climate Change.
- Relevance of the findings of the Third IPCC Working Group for economies in transition
- Presentation on regional and global benefits and costs of climate change mitigation.
- Presentation of economic valuation of co-benefits case study for Russia in 2-3 selected cities
- Institution development and instruments for climate change mitigation
- Land use and forestry issues in the Third Assessment Report on climate mitigation
- Russian energy policy: practical implementation of IPCC WGIII recommendation.
- Russian transport policy and climate changes
- Ratification and national mechanisms or implementation of Kyoto protocol provisions: use of findings of the third IPCC working group by the Russian parliament
- National reporting to the UNFCCC Secretariat on climate change mitigation

THE FOLLOWING EXPERTS MADE PRESENTATIONS:

- Bert Metz, Co-Chair of the Third IPCC Working Group;
- Olga Speranskaya, Deputy director, Eco-Accord, project coordinator;

Russian decision makers

- Yu. Israel, Institute of Global Climate and Ecology, Director, Academician, IPCC Co-Chair;
- Vladimir Grachev, Chairman of the Environmental Committee of the State Duma of the Russian Federation
- Anatoly Nasonov, First Deputy Minister of Transport
- Vsevolod Gavrilov, Ministry of Economic Development and Trade
- Eugene Utkin, State Committee for Hydrometeorology of the Russian Federation
- Alexandr Popov, Head of the Department, Ministry of Energy of Russia
- Oleg Plujnikov, deputy head of the Department, the Ministry for Power Industry of the Russian Federation

IPCC experts

- Olga Krankina, IPCC expert
- Alexandr Golub, economist, Environmental Defense, IPCC expert;

International experts

- Vitaly Matsarski, UN FCCC Secretariat
- Melissa Carey, Environmental Defense

NEXT TWO DAYS OF THE WORKSHOP FOCUSED ON EXPERTS, BUSINESS, SCIENTIFIC COMMUNITIES AND NGOs FROM RUSSIA AND OTHER NIS

Representatives from each country were selected based on consultations with authorities responsible for climate change policy. Members of Russian NGO coalition on climate change also participated. The participants of this second part of the workshop attended the first day of the workshop.

The objective of the second part of the workshop was to present the main finding of IPCC WGIII with particular focus on benefits of GHG reduction and instruments to implement

aggressive GHG reduction policy to the NIS experts and discuss practical steps how to use the results in practice.
Specialists were also introduced to the modern valuation technology to conduct in the future the cost –benefits studies for their own countries using IPCC methodology.

This curriculum included:
Presentations about IPCC WGIII activities

- Review of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation' in Russian (presentation of the brochure 'Global Warming: How to Mitigate Climate change?'
- Climate change and sustainable development (First chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
- Scenarios of GHG emissions and mitigation of adverse effects of climate change: technological and economic capacity of economies in transition (Second chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
- Technological and economic potential of greenhouse gas emissions reduction (Third and Fifth chapters of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
- Technological and economic potential of options to enhance, maintain, and manage biological carbon reservoirs **(**Fourth chap of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
- Barriers, opportunities, and market potential of technologies and practices (Sixth chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
- Assessment of finance costs, necessary for mitigation of adverse effects of climate change (Seventh chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation').
- Costs and benefits of GHG emission reductions in Russia and other economies in transition (Eighth and Ninth chapters of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation').

Presentations made by Russian scientists

- Climate change monitoring in Russia
- Global climate changes: views of Russian scientists

Presentations on attracting investments into projects on GHG reduction

- Measures to reduce climate change in electric energy power
- Capacity of Russian Forestry sector for mitigation of adverse effects of climate change: applicability of research findings of the third IPCC Working Group to Russian forest management practice.
- Perspectives of attracting investments into regional projects on GHG reduction in Russia. Applicability of IPCC special report on methodological and technological issues in technology transfer in Russian regions.

Presentations from NIS countries

- Presentation and discussion of valuation studies from the NIS countries.
- Comparative analysis of different economic instruments to reduce GHG emission in context of transition economies.

ROUND TABLE DISCUSSION:

During the workshop three round table discussions were held on May, 20-21.

1. APPLICABILITY OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP IN THE NIS

Questions discussed:
1. Aggressive GHG emission reduction policy: NIS potentail
1. NIS experience in using IPCC findings on in the national GHG emission reduction policy
2. Technological and economic potential of greenhouse gas emissions reduction in the NIS
3. Benefits from GHG emission reduction

Resource people:
- Mark van Wees, RIVM
- Alexandr Golub, IPCC expert
- Olga Krankina, IPCC expert
- NIS experts;
- Russian Academy of Science
- Representatives of business corporations;
- Non-governmental organisations

2. NIS CAPACITY FOR REDUCTION OF GHG EMISSIONS: PROSPECTS OF DIFFERENT SECTORS

Questions discussed:
1. GHG emission reduction by using energy saving technologies
2. Using of renewable resources to reduce GHG emissions
3. Perspectives of GHG reduction in such economic sectors as transport, land use, forestry
4. Environmentally sound technologies transfer from developed countries to economies in transition

Resource people:
- Oleg Pluzhnikov, the Ministry of Power Industry of the Russian Federation
- Alexander Guinzburg, Institute of Atmosphere Physics (RF Academy of Sciences)
- Olga Speranskaya, Eco-Accord

3. COSTS AND BENEFITS OF GHG EMISSION REDUCTION

Questions discussed:
1. Influence of Kyoto mechanisms on different sectors of the economy:
- Coal
- Oil and gas
- Agriculture and forestry
- Transport

2. Environmental and social benefits
3. Taxes and subsidies

Resource people:
- Vladimir Berdin, the Centre for Development and Implementation of International Technical Assistance Projects
- Alexander Golub, Environmental Defense
- Anil Markandya, the World Bank

WORKSHOP RESULTS

The draft of the outcomes of the workshop 'MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE IN ECONOMIES IN TRANSITION: ADVANTAGES AND PROSPECTS OF GHG EMISSION REDUCTION' was prepared at the workshop and further discussed among workshop participants via e-mail.
The final version of the outcomes of the workshop was disseminated among all interested organisations all over the NIS region as well as among international organisations:

- UN FCCC Secretariat
- IPCC
- RIVM
- Environmental Defense
- Australian Embassy
- British Embassy
- US EPA
- DANCEE
- USAID
- WWF
- Climate Action Network
- Greenpeace
- IISD

The outcomes of the workshop (in Russian and in English) were put on Eco-Accord website and included into the final version of the brochure 'Global warming: how to mitigate climate change?'

Workshop outcomes (See Attachment 2).

WORKSHOP PROCEEDINGS

As a result of the workshop **final version of the brochure 'Global warming: how to mitigate climate change?'** was prepared. It contains the following information:

- Editorial (in Russian and in English)
- The necessity of TAR for economies in transition
- TAR review (review of each chapter with a special focus on their relevance for economies in transition)
- The review also contains examples from NIS countries which show the applicability of IPCC findings for economies in transition.
- Technological solutions to mitigate climate change (also with concrete examples from the NIS region)
- Outcomes of the workshop

In electronic format the brochure can be downloaded from Eco-Accord website: http://accord.cis.lead.org
In printed format if can be obtained from Eco-Accord office or ordered by phone or e-mail. It is circulated free of charge.
Circulation - 400 copies
Volume – 60 pages

Key presentations made at he workshop have been put on Eco-Accord website specially devoted to the IPCC activities.

The following presentations can be downloaded:

B. Metz – Co-Chair of UPCC WG III
IPCC WGIII findings: their relevance for political decisions and further investigations

Olga Speranskaya, Eco-Accord
Information about the project
RAISING AWARENESS ON BENEFITS AND COST OF CLIMATE CHANGE MITIGATION IN COUNTRIES WITH TRANSITION ECONOMY

Olga Speranskaya, Eco-Accord
REVIEW OF IPCC THIRD ASSESSMENT REPORT

Alexander Averchenkov, Russian Program of Environmental Investments
POSSIBILITIES TO ATTRACT RESOURCES OF GEF AND OTHER IFO TO PROJECTS ON CLIMATE CHANGE MITIGATION IN THE NIS

Serguey Bobylev, Moscow State university
TECHNOLOGICAL SOLUTIONS TO MITIGATE CLIMATE CHANGE

Vladimir Berdin, the Centre for Development and Implementation of International Technical Assistance Projects
TECHNOLOGICAL AND ECONOMIC POTENTIAL OF GREENHOUSE GAS EMISSIONS REDUCTION

Olga Krankina, IPCC expert
TECHNOLOGICAL AND ECONOMIC POTENTIAL OF OPTIONS TO ENHANCE, MAINTAIN, AND MANAGE BIOLOGICAL CARBON RESERVOIRS

Roman Korobov, US-Moldova project on climate mitigation assessment
IPCC AND NATIONAL CLIMATE CHANGE ASSESSMENTS.
SOLVING CLIMATE CHANGE PROBLEMS IN MOLDOVA

Natalia Mikhailenko, REC Central Asia
PRIORITIES AND STRATEGIES OF CLIMATE CHANGE MITIGATION IN KAZAKHSTAN

KAZAKSTAN: CONSEQUENCES OF CLIMATE CHANGE

Muzafar Isobaev, Tadjik technical university, Ministry of economic and trade of Tadjik republic
RECOMMENDATIONS FOR DECISION MAKING RESULTED FROM THE FIRST NATIONAL REPORT ON CLIMATE CHANGE IN TAJIKISTAN

Eugene Gagurin, Vladimir Laskarevsky
EVALUATION OF INVESTMENT POTENTIAL OF JI PROJECTS IN UKRAINE

Anil Markandia, World Bankн
FROM RIO TO THE HAGUE: PROBLEMS OF CLIMATE CHANGE NEGOTIATIONS

Vladimir Shakin, Russian Academy of Science
SAFETY OF ELECTRIC ENERGY

Annie Petsonk, Environmental defense
MINIMIZING COST: OPPORTUNITIES FOR ECONOMIES IN TRANSITION

Oleg Plujnikov, Ministry of Energy of the Russian Federation
INTERNATIONAL CO-OPERATION AND NATIONAL ACTIONS; FLEXIBILITY MECHANISMS OF KYOTO PROTOCOL WITHIN THE CONTEXT OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP

Ngor Mazurin, Eugene Utkin, Russian Federal Service for Hydrometeorology and Environmental Monitoring
KYOTO PROTOCOL RATIFICATION: WHAT IS THE PRICE FOR RUSSIA?

Melissa Carey, Environmental Defense
ROAD FROM MARRAKESH: MODERN CARBON MARKET

Georgy Saphonov, Environmental Defense
POLITICAL INSTRUMENTS AND MEASURES TO MITIGATE CLIMATE CHANGE

Rafig Verdiyev, PhD, Afat Bayramova
CLIMATE CHANGE IMPACT TO EASTERN CAUCASUS RIVERS AND WAYS OF ITS MITIGATION

Alexander Golub, IPCC expert
GHG EMISSION REDUCTION IN RUSSIA AND OTHER ECONOMIES IN TRANSITION: COSTS AND BENEFITS

V. Shelepov, Deputy minister, ministry of Energy of the Russian Federation
ENERGY POLICY OF RUSSIA: PRACTICAL IMPLEMENTATION OF FINDINGS OF THE THIRD IPCC WORKING GROUP

PROJECT FOLLOW UP

After the project is finalized, ECO-Accord continues active co-operation in the field of climate change mitigation actions and further popularizes and disseminates WGIII results in the NIS region.

The updated and complete version of the brochure ‘Global Warming: how to mitigate climate change’ will be disseminated at the World Summit on Sustainable Development (Johannesburg, August-September, 2002) and via mail among the workshop participants and other organisations in Russia and the NIS. We have already got a number of requests to receive a printed version of the brochure.

Russian Federal Service for Hydrometeorology and Environmental Monitoring and Ministry of Energy of the Russian Federation also will disseminate the brochure among their partner organisations.

Eco-Accord will continue managing its webpage devoted to IPCC activities. The list of materials from the workshop which have already been put on the website will be enlarged by other materials on TAR, IPCC activities and findings and their relevance to economies in transition.

ATTACHMENTS

1. Workshop program
2. Workshop results
3. List of journalists
4. Press-release

Olga Speranskaya
project manager
Eco-Accord

PROVISIONAL AGENDA OF THE SEMINAR

Hotel 'Marco Polo'
Moscow, Spiridonievsky pereulok, 9.

May 2002, Monday	
9-30	**Registration of participants**
10-00	**Yu.Izrael, academician, director of the Institute of global climate and ecology, Vice-Chair of IPCC** Speech of welcome
10-15	**V. Grachev, the Chairman of the Environmental Committee of the State Duma of the Russian Federation** RATIFICATION AND NATIONAL MECHANISMS OR IMPLEMENTATION OF KYOTO PROTOCOL PROVISIONS: USE OF FINDINGS OF THE THIRD IPCC WORKING GROUP BY THE RUSSIAN PARLIAMENT
10-30	**O. Speranskaya, Eco-Accord** Project presentation
10-45	**Yu. Izrael, academician, director of the Institute of global climate and ecology, Vice-Chair of IPCCC** PROBLEMS OF GHG CONCENTRATION GROWTH AND CLIMATE CHANGE, AND THE WAYS TO SOLVE THEM
11-00	**The findings of IPCC WGIII** **B. Metz - Co-Chairman on the Third IPCC Working Group** MAJOR RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP: THEIR APPLICABILITY FOR POLITICAL DECISIONS AND FURTHER SCIENTIFIC RESEARCH
11-30	**Application of the IPCC WGIII findings in the NIS** **A. Golub, Environmental Defense/HSE (IPCC)** RELEVANCE OF THE FINDINGS OF THE THIRD IPCC WORKING GROUP FOR ECONOMIES IN TRANSITION
11-45	**Application of the IPCC WGIII findings in the NIS** **O. Krankina, the Third IPCC Working Group** LAND USE AND FORESTRY ISSUES IN THE THIRD ASSESSMENT REPORT ON CLIMATE MITIGATION
12-00	**The findings of IPCC WGIII** **Vitaly Matsarski, UNFCCC Secretariat** NATIONAL REPORTING TO THE UNFCCC SECRETARIAT ON CLIMATE CHANGE MITIGATION
12-15	Coffee break
	Chairman: **V. Grachev, the Chairman of the Environmental Committee of the State Duma of the Russian Federation**

12-30	**Application of the IPCC WGIII findings in Russia** **A. Popov, Ministry of Energy of Russia** ENERGY POLICY OF RUSSIA: PRACTICAL IMPLEMENTATION OF FINDINGS OF THE THIRD IPCC WORKING GROUP
12-45	**Application of the IPCC WGIII findings in Russia** **E. Utkin, State Committee for Hydrometeorology of the Russian Federation** RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP: APPLICABILITY FOR DECISION-MAKING ON PREVENTION OF CLIMATE CHANGE IN RUSSIA AND OTHER COUNTRIES OF THE FORMER USSR
13 –00	**Application of the IPCC WGIII findings in Russia** **V. Gavrilov, Ministry of Economic Development and Trade** KYOTO PROTOCOL RATIFICATION AND FURTHER STEPS TO REDUCE GHG EMISSIONS IN RUSSIA
13-15	**Application of the IPCC WGIII findings in Russia** **A. Nasonov, First Deputy Minister of Transport** TRANSPORT POLICY AND CLIMATE CHANGES
13-30	**Press-conference**
14-00	**Lunch**
	Chairman: **A. Popov, Ministry of Energy of Russia**
15-00	**A. Panfilov, Deputy chair of the Organizing Committee of the Conference 'Participation of Russia in the implementation of Kyoto mechanisms'** PARTICIPATION OF RUSSIAN CORPORATIONS IN PROJECTS ON GHG REDUCTION **O. Plujnikov, Ministry of Energy of Russia** Актуальность проектов в области снижения негативных последствий изменения климата для крупных городов России IMPORTANCE OF PROJECTS ON CLIMATE CHANGE MITIGATION FOR RUSSIAN CITIES **M. Carey, Environmental Defense** PARTICIPATION OF GOVERNMENTAL AND INTERNATIONAL ORGANISATIONS AND CORPORATIONS IN THE INTERNATIONAL COOPERATION ON GHG EMISSION REDUCTION

16-20	**Round table discussion** **Applicability of Research findings of the Third IPCC Working Group in the NIS** Research people from the Third IPCC Working Group**;** NIS experts; The Secretarial of UN FCCC; Russian Academy of Science Representatives of business corporations; Non-governmental organisations
Coffee	

Hotel 'Sputnik'
Moscow, 38 Leninskiy Pr.

May 21, 2002 Tuesday	
	Chairman: **M.M. Ulkin, Centre of Environmental Investments, Arkhangelsk region**
10-00	**The findings of IPCC WGIII** **O. Speranskaya, 'Eco-Accord' Centre –** presentation of the Review of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation' in Russian **E. Utkin, Roshydromet** SUSTAINABLE DEVELOPMENT AND ITS RELATIONS WITH ENVIRONMENTAL RESPONSIBILITIES AND ENERGY OF RUSSIA **V. Sokolov, Institute of USA and Canada, Russian Academy of Science –** CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (First chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation') **A. Golub, US Environmental Defense** SCENARIOS OF GHG EMISSIONS AND MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE: TECHNOLOGICAL AND ECONOMIC CAPACITY OF ECONOMIES IN TRANSITION (Second chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation') **V. Berdin, the Centre for Development and Implementation of International Technical Assistance Projects –** TECHNOLOGICAL AND ECONOMIC POTENTIAL OF GREENHOUSE GAS EMISSIONS REDUCTION (Third and Fifth chapters of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation') **O. Krankina, USA –** TECHNOLOGICAL AND ECONOMIC POTENTIAL OF OPTIONS TO ENHANCE, MAINTAIN, AND MANAGE BIOLOGICAL CARBON RESERVOIRS **(**Fourth chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')

11-00	**The findings of IPCC WGIII** **G. Safonov, Environmental Defense** BARRIERS, OPPORTUNITIES, AND MARKET POTENTIAL OF TECHNOLOGIES AND PRACTICES (Sixth chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation')
11-15	**The findings of IPCC WGIII** **A. Markandya, the World Bank** ASSESSMENT OF FINANCE COSTS, NECESSARY FOR MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE (Seventh chapter of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation').
11-30	**The findings of IPCC WGIII** **A. Golub, Environmental Defense** COSTS AND BENEFITS OF GHG EMISSION REDUCTIONS IN RUSSIA AND OTHER ECONOMIES IN TRANSITION (Eighth and Ninth chapters of the Third IPCC Working Group Report 'Climate Change 2001: Mitigation').
11-45	**A. Petsonk, Environmental Defense** MINIMIZING COST: OPPORTUNITIES FOR ECONOMIES IN TRANSITION
12-00	**Coffee**
	Chairman: **O. Pluzhnikov, the Ministry of Power Industry of the Russian Federation**
12-30	**Application of the IPCC WGIII findings in Russia** **G. Grusa, Institute of global climate and ecology** CLIMATE CHANGE MONITORING IN RUSSIA
12-45	**Application of the IPCC WGIII findings in Russia** **G. Golitsin, the Director of the Institute of Atmosphere Physics (RF Academy of Sciences)** **I. Mokhov, correspondent member, (RF Academy of Sciences)** GLOBAL CLIMATE CHANGES: VIEWS OF RUSSIAN SCIENTISTS
13-00	**Application of the IPCC WGIII findings in Russia** **M. Rogankov, Vice-Chair, Energy and Carbon Fund, RAO UES of Russia** MEASURES TO REDUCE CLIMATE CHANGE IN ELECTRIC ENERGY POWER **I. Mazurin, E. Utkin, Roshydromet** ESTIMATED COSTS OF KYOTO PROTOCOL RATIFICATION BY RUSSIA **A. Isaiev, the Director of the International Forest Institute** CAPACITY OF RUSSIAN FORESTRY SECTOR FOR MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE: APPLICABILITY OF

	RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP TO RUSSIAN FOREST MANAGEMENT PRACTICE. **M. Ulkin, Centre of Environmental Investments, Arkhangelsk region** PERSPECTIVES OF ATTRACTING INVESTMENTS INTO REGIONAL PROJECTS ON GHG REDUCTION IN RUSSIA. APPLICABILITY OF IPCC SPECIAL REPORT ON METHODOLOGICAL AND TECHNOLOGICAL ISSUES IN TECHNOLOGY TRANSFER IN RUSSIAN REGIONS.
14-00	**Application of the IPCC WGIII findings in the NIS** **Round table discussion:** NIS CAPACITY FOR REDUCTION OF GHG EMISSIONS: PROSPECTS OF DIFFERENT SECTORS **Questions to be discussed:** 1. GHG emission reduction by using energy saving technologies 2. Using of renewable resources to reduce GHG emissions 3. Perspectives of GHG reduction in such economic sectors as transport, land use, forestry 4. Environmentally sound technologies transfer from developed countries to economies in transition **Resource people:** O. Pluzhnikov, the Ministry of Power Industry of the Russian Federation A. Guinzburg, Institute of Atmosphere Physics (RF Academy of Sciences) O. Speranskaya, Eco-Accord
15-00	Lunch
	Chairman: **A. Kokorin, WWF-Russia**
16-00	**Application of the IPCC WGIII findings in Russia** **A. Kosarikov, deputy Chairman of the Environmental Committee of the State Duma of the Russian Federation** RATIFICATION OF KYOTO PROTOCOL AND DEVELOPMENT OF NECESSARY MECHANISMS FOR REDUCTION OF GHG EMISSIONS. APPLICATION OF IPCC RESEARCH FINDINGS.
16-20	**Application of the IPCC WGIII findings in Russia** **O. Pluzhnikov, the Ministry of Power Industry of the Russian Federation** INTERNATIONAL CO-OPERATION AND NATIONAL ACTIONS; FLEXIBILITY MECHANISMS OF KYOTO PROTOCOL WITHIN THE CONTEXT OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP
16-45	**Application of the IPCC WGIII findings in the NIS** **A. Averchenkov, Director, Russian Program of Environmental Investments** POSSIBILITIES TO ATTRACT RESOURCES OF GEF AND OTHER IFO TO PROJECTS ON CLIMATE CHANGE MITIGATION IN THE NIS

17-00	**Round table discussion:** COSTS AND BENEFITS OF GHG EMISSION REDUCTION **Questions to be discussed:** 1. Influence of Kyoto mechanisms on different sectors of the economy: • Coal • Oil and gas • Agriculture and forestry • Transport 2. Environmental and social benefits 3. Taxes and subsidies **Resource people:** V. Berdin, the Centre for Development and Implementation of International Technical Assistance Projects A. Golub, Environmental Defense A. Markandya, the World Bank
18-00	Dinner

Hotel 'Sputnik'
Moscow, 6 Leninskiy Pr.

May 22, 2002 Wednesday	
	Chairman: **V. Berdin, the Centre for Development and Implementation of International Technical Assistance Projects**
10-00	**O. Speranskaya, 'Eco-Accord' Centre** Summing up two previous days of the seminar
10-30	**Application of the IPCC WGIII findings in Russia** PROSPECTS OF PARTICIPATION OF BUSINESS CORPORATIONS IN ACTIVITIES FOR GHG EMISSION REDUCTIONS: THE ROLE OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP IN PROJECT SELECTION **O. Plujnikov, Ministry of Energy of the Russian Federation** Participation of Russian companies in JI and GIS **A. Cherni, Association of Russian mining towns** Participation of Russian companies in projects on reduction of methane emission **A. Petsonk, Environmental Defense** Partnership of American companies to mitigate climate change
12-00	Coffee break
	Chairman: **O. Speranskaya, Eco-Accord**

12-30	**Application of the IPCC WGIII findings in the NIS** ECONOMIES IN TRANSITION: PROSPECTS FOR APPLICATION OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP FOR MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE **Addresses of representatives of NIS delegations:** **N. Mikhailenko, Regional environmental centre for Central Asia** Perspectives of central asian republics in GHG emission reduction **S. Bobylev, Moscow State university** Technological solutions to mitigate climate change **M. Vermishev, Armenia** Possibilities to mitigate climate change in Armenia **R. Verdiev, A. Bairamova, Azerbaijian** Consequences of climate change in the Eastern part of Caucasus **R. Corobov, Moldova** Possibilities to solve climate change problems in Moldova **M. Isobaev, Tajikistan** Recommendations for decision making resulted from the first National Report on Climate Change in Tajikistan
15-00	Lunch
	Chairman: **A. Golub, Environmental Defense**
16-00	**E.Vasilieva, 'Volgograd-ECOpress' Information Centre** **O. Speranskaya, Eco-Accord** **L Astanina, Greenwomen Information Agency, Kazakhstan** FURTHER DISSEMINATION OF RESEARCH FINDINGS OF THE THIRD IPCC WORKING GROUP: CAPACITY OF DIFFERENT ORGANISATIONS
16-30	Discussion of the final document of the seminar

MITIGATION OF ADVERSE EFFECTS OF CLIMATE CHANGE IN ECONOMIES IN TRANSITION: ADVANTAGES AND PROSPECTS OF GREENHOUSE GASES EMISSION REDUCTION

Moscow, May 20-22, 2002

Outcomes of the Workshop

On Wednesday, May 22, a three-day seminar 'Mitigation of Adverse Effects of Climate Change in Economies in Transition: Advantages And Prospects Of Greenhouse Gas Emission Reduction' was concluded in Moscow. The seminar was organised by 'Eco-Accord' Centre in co-operation with the Third Working Group of the Intergovernmental Panel on Climate Change (IPCC) and other NIS governmental and non-governmental organisations. The meeting participants discussed results of IPCC WG 3 results, published in report 'Climate Change 2001: Mitigation'.

The participants reviewed the opportunities for applying IPCC findings in Russia and other New Independent States for decision-making on mitigation of adverse effects of climate change. The meeting participants focused on assessment of NIS capacity for reduction of GHG emissions, at additional economic, environmental and social benefits of GHG emissions reduction and necessary instruments for implementation of GHG emission reduction policies. Besides that, the participants discussed opportunities to attract investments for NIS in order to implement specific emission reduction projects and prospects of implementation of Kyoto mechanisms.

In his address to the seminar, Mr. Bert Metz, the co-chairman of the Third Working Group of IPCC, stressed that the problem of climate change is closely linked to issues of sustainable development, environmental management and GHG emission reductions. He emphasised that there are available technologies, that would allow to reduce GHG emissions in the nearest future and mitigate adverse effects of climate change in a longer term.

Olga Speranskaya (Eco-Accord Centre) noted, that addressing climate change problems necessitates joint efforts of the whole international community, covering almost all types of human activities. The IPCC report contains a special section, dedicated to analysis of strategies, measures and instruments for reduction of greenhouse gases emissions. The section focuses at co-operation of different countries in application of these instruments, allowing individual countries to meet their quantitative emission reduction commitments under Kyoto Protocol. The latter document provides unique possibilities to individual countries, allowing them to use different market mechanisms, regulatory mechanisms and voluntary co-operation for reduction of GHG levels in the atmosphere.

Besides that, at the workshop it was stressed that relevance of Kyoto Protocol is not limited to addressing long-term climate change problems. Reduction of GHG emissions would be accompanied by reduction of emissions of other air pollutants, that might provide environmental benefits in the nearest future.

In the final document of the meeting, the seminar participants called for further expansion of the already existing climate coalition of interested Russian organisations in order to involve other NIS as well. The coalitions pursues objectives of information dissemination (including

inter alia information on IPCC activities), exchange of views and participation on monitoring of GHG emission reduction projects.

Decision of Seminar

Having reviewed the report of the Third Working Group of the Intergovernmental Panel on Climate Change (IPCC) 'Climate Change 2001: Mitigation', the seminar participants emphasise the importance of the conclusions of the Third IPCC Working Group. Climate change is a long-term global process, associated with complex interactions between climate, environmental, economic, political, institutional, social and technological processes. Climate change may be accompanied by substantial adverse impacts, which could be prevented only by joint efforts of all counties of the planet.

The seminar participants agree with IPCC assessments of national GHG emission reduction potential of different countries. In particular, the report provides analysis of technological, social, economic and market potential.
According to estimates of IPCC experts, NIS have a huge potential capacity for GHG emission reduction in the world including CO_2 sequestration potential from atmosphere into natural ecosystems. Major components of the GHG emission reduction actions incorporate technological innovations and application of market incentives.

The report emphasises, that NIS could implement no-regret and low-cost GHG emission reduction actions and generate direct and ancillary benefits, including *inter alia* reduction of emissions of such combustion by-products as sulphur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and other chemical substances and particulate matter. These actions would improve local and regional air quality, and as a result, reduce health and environmental damages. According to IPCC experts, other ancillary benefits of climate change prevention and mitigation actions might incorporate also: new jobs, reforestation, improvement of quality of soils and watersheds and reduction of harmful subsidies that promote GHG emissions.

Barriers for addressing climate change problems

The seminar participants note, that besides analysis of GHG emission reduction capacity of economies in transition, the report of the Third IPCC Working Group identifies for numerous technical, economic, political, culture, psychological and institutional barriers, that need to be by-passed in order to address the climate change challenges efficiently. In the case of economies in transition, the key opportunities are mainly associated with transition to more rational structure of prices, with access to information and data, innovative technologies and finance resources, training and technological capacity building.

Based on the analysis of the IPCC Report, the seminar participants amended the list of problems to be addressed by the NIS in the nearest future:
- Inadequate institutional framework;
- Lack of state regulating institutions;
- Weak co-ordination of actions of governmental agencies, dealing with climate change and GHG emission reduction;
- Political instability;
- Unclear property relations;
- Irrational structure of prices;
- High discount rates;

- High transaction costs;
- High level of externalities;
- Inadequate market experience and asymmetrical information;
- Fragmentary nature of GHG emissions inventory (however, some positive experience also exists, e.g. 'United Energy Systems of Russia' Corporation, Novgorod Oblast, Arkhangelsk Oblast, Cheliabinsk Oblast, Sakhalin Oblast, Republic of Hakasia);
- Weake systems of climate change monitoring;
- Inadequately developed legislation;
- Inadequate enforcement of existing legislative acts;
- Investment risks;.
- Inadequate mobilisation of investments for implementation of GHG emission reduction projects;
- Inadequate access to data/information, including access to information at the regional level;
- Inadequate access to modern technologies and finance resources;
- Inadequate attention to needs of personnel training and support of R&D works.

Recommendations for economies in transition

The seminar participants came to the conclusion, that the Report provides analysis that can be used as a basis for development of specific recommendations for economies in transition in the sphere of GHG emission management. These recommendations incorporate *inter alia* the following ones:

- To develop a package of political and economic instruments for reduction of greenhouse gases emissions and increasing sinks. Such a package may include: taxes for GHG emissions, carbon or energy; provision or phase-out of subsidies; deposit-refund schemes; quality standards; requirements for power supply sources; voluntary arrangements; state investments.
- To launch early implementation of policies for reduction of GHG emissions and increasing sinks, in order to ensure substantial expansion of GHG emission reduction capacity and assigned quotas. Many experts believe, that early implementation of Kyoto mechanisms, accompanied by reinvestments into GHG emission reduction projects, might generate higher ancillary benefits of these emission reductions, namely: public health benefits, higher employment, expansion of forest areas, improvement of quality of soils and watershed areas;
- To facilitate technology development. To meet this goal it is important to form sustainable sources of financing using incomes from extraction and reproducing of fossil fuelTo establish stable sources of financing for this purpose, due to proceeds, generated by extraction and processing of hydrocarbon mineral resources. To utilise advantages, provided by public ownership of fossil fuels in order to mobilise finance resources of mining companies for development of new environmentally sound technologies (at the stage of tenders for exploration of new mineral deposits and issuance of licenses).
- Implementation of GHG emission reduction actions with low and even negative net costs;
- To account for ancillary environmental benefits, accompanying direct benefits of implementation of GHG emission reduction projects. To develop programs for introduction of environmental audit procedures and standards of ISO 14000 series into management practices, in order to promote favourable investment image of Russian facilities.

- To develop GHG emission management policies in co-ordination with policies for management of the most hazardous air pollutants;
- To use generic advantages of economies in transition, including *inter alia*: opportunities of implementation of no-regret and low-cost actions for reduction of greenhouse gases emissions, improvement of energy efficiency and use of renewable energy sources and development of mutually beneficial international co-operation with other countries for GHG emission reduction purposes;
- To pay special attention to co-operation of different countries in application of Kyoto instruments, allowing to meet quantitative targets of Kyoto Protocol. Kyoto Protocol provides individual countries unique rights to use different market mechanisms, mechanisms of regulation and voluntary co-operation for reduction of GHG levels in the atmosphere;
- To facilitate broad dissemination of information on measurers for GHG emission reduction among interested governmental and non-governmental organisations, industrial companies, national and foreign investors;
- To facilitate integration of climate change strategies with other national and sectoral development strategies;
- To promote transfer of innovative technologies and know-how to small and medium-sized companies for purposes of GHG emission reduction and reduction of emissions of other air pollutants. To facilitate development of a system for monitoring of GHG emissions and sinks, a register of GHG emissions, as well as for development of measures for GHG emission reduction and assessment of efficiency of these measures.

Dissemination of IPCC results in the NIS

Stressing the importance of report of the Third IPCC Working Group 'Climate Change 2001: Mitigation', the seminar participants note that only a few experts from New Independent States of the former USSR (NIS) participated in development of the report development. This low level of involvement was caused *inter alia* by the following factors:

- Lack of NIS governments' willingness or lack of available resources, necessary to finance involvement of their national experts;
- Inadequate access of NIS experts to information on development of IPCC reports;
- Language barriers, because IPCC reports are written in English although translation was proposed recently.

Besides that, the seminar participants note inadequate use of the report of the Third IPCC Working Group for research and policy-making purposes in economics in transition. This is associated *inter alia* with the following factors:

- High-level policy makers, who are familiar with the IPCC work, change jobs often. As a result knowledge and capacity is lost.
- IPCC reports are scientific. The translation into brief and concise information that can be assessed by policy makers is difficult and is often not available.
- Some policy makers and research may have a negative image of IPCC work (e.g. too academic).
- Many policy makers and some researchers do not (easily) read English.
- The potential users are not aware of the advantages for their daily work (research and policy making). They are therefore not able and/or willing to invest in making themselves familiar with the materials.

In order to improve the situation, the seminar participants consider the following priority tasks:

- To increase the number of NIS experts involved in development of IPCC reports including representatives of the Russian Association of Indigenous Peoples of the North (RAIPON);
- To enhance the capacity of NIS experts as a necessary precondition for their involvement into IPCC works;
- To allocate a percentage of proceeds, to be generated by the implementation of Kyoto mechanisms, for purposes of climate change research, monitoring and for training of experts;
- To disseminate information on current activities and plans of IPCC among a broad range of interested NIS organisations;
- To disseminate more broadly information on IPCC material and the original materials. In the case of Russia, it is important to provide conditions for efficient use of this information at the level of regions (subjects) of the Russian Federation, that have been delegated the key rights of natural resources management.
- To make IPCC information more accessible and to engage professional journalists into dissemination of IPCC information;
- To translate IPCC reports into the Russian language and to make them more accessible for target groups (decision-makers, local authorities, experts, businessmen, NGOs). To disseminate broadly these materials in NIS, in particular 'Global Warming: how to prevent consequences', in the course of information-dissemination events, as brochures, CDs and in electronic format, including posting these material in the Internet;
- To incorporate the materials, developed based on IPCC reports, into research plans and training courses of research institutes, industrial facilities, and organisations in charge of public awareness raising in the sphere of climate change;
- To develop an analysis of applicability of IPCC findings on GHG emission reduction for NIS and to disseminate broadly the analysis in these countries for purposes of political and economic decision-making on matters of climate change mitigation,
- To launch a Russian language web-site for exchange of information on different models and projects in the sphere of GHG emission reduction;
- To implement additional research on matters of ancillary benefits, associated with GHG emission reduction in NIS;
- To analyse adaptation costs and opportunities of NIS, associated with reduction of GHG emissions;
- Every individual NIS should estimate in monetary terms its benefits, associated with implementation of measures for GHG emission reduction. These benefit assessments should be broadly disseminated in NIS for purposes of information exchange and sound decision-making;
- To expand further the already existing climate change coalition of interested Russian organisations in order to involve other NIS as well, in order to ensure broad dissemination of climate change information, to monitor GHG emission reduction projects and implementation of Kyoto mechanism.

Attachment 3 List of media

1. Public Russian Television (ORT)
2. Radio station 'Voice of Russia'
3. Radio station 'Alphabet'
4. Information Agency 'Rosbalt'
5. Newspapaer 'Izvestia'
6. Newspaer 'Moskovski Komsomoletz'
7. Information agency 'Bureau of legislative information'
8. Newspaper 'Russian newspaper'
9. Interfax
10. Russian Information Agency 'Novosti'
11. ITARTASS
12. Russian Environmental Radio 'Greens'
13. Newspaper 'Commersant'
14. Radio station 'Russian Radio'
15. Rosbusinessconsulting
16. TV company 'TV-centre'
17. Radio station 'Voice of Russia' (environmental department)
18. Radio station 'Radio of Russia'
19. Newspaper 'Greenpages of Volgograd'
20. Federal Information Agency
21. Newspaper 'Yomiuri' (Japan)
22. Science magazine
23. ECOS magazine

PRESS-RELEASE

Climate change mitigation: potential of economies in transition

Eco-Accord in cooperation with the Third IPCC Working Group (IPCC WGIII) continues the project RAISING AWARENESS ON BENEFITS AND COST OF CLIMATE CHANGE MITIGATION IN COUNTRIES WITH TRANSITION ECONOMY

The goal of the project is to disseminate information about IPCC WG III materials devoted to countries' potential in GHG emission reduction. It is considered that IPCC findings will be useful for political decision makers, business, NGOs as a scientific background to develop and implement climate mitigation policy.

In the Third Assessment Report prepared by IPCC experts in 2001 long term problem and long term solutions are determined. The problem is climate change. Its solutions are linked to the measures of economy and people adaptation to global climate change.

According to IPCC experts climate change will result in some positive effects, but they will be accompanied by serious negative consequences for people's health, ecosystems and social and economic spheres. Developing countries will be in the most vulnerable situation. Besides that experts found out that there is a number of strategies and technologies to reduce GHG emissions.

Are economies in transition ready to work out an adequate strategy? What obstacles and barriers will they face? What recommendations can be proposed?

Economies in transition have significant potential in reducing GHG emissions. Its main elements are as follows: increasing energy efficiency and energy saving, using market instruments.

According to the UN ECE Committee on Sustainable Energy NIS countries have the largest potential in the field of energy efficiency and using of renewable energy resources. This potential is estimated to be between 600-65- million tons of oil equivalent. This amount is more than annual energy consumption in the NIS. Reaching even half of this capacity will bring considerable economic and ecological benefits as it will lead to significant saving of fossil fuel and GHG emission reduction. Preliminary assessment shows that increasing energy efficiency in the NIS is less expensive than investments needed to proportionally increase in energy consumption.

In Russia energy saving potential is about 40% of overall energy production. Using this potential the country can significantly increase the amount of GHG emission reduction. Kyoto Protocol, on its tern, could become a mechanism for attracting additional investments into fuel and energy complex and stimulate the implementation of plans on energy efficiency and energy saving.

What instruments can Russia choose to manage GHG emissions? To our opinion it could chose market methods. At the same time policy of GHG emission reduction should be implemented together with the policy of reducing dangerous air pollution. Thus it would become possible to reach complex effect resulting from measures of GHG emission reduction.

Measures on GHG emission reduction should be supported by the society as a whole and by the industry. Industrial enterprises should have access to internal investment sources to implement measures of GHG emission reduction.

For further information, please, consult:

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Appendix 1.5 Outreach Report Sri Lanka

Final Report on 'National Climate Change Public Awareness, Information and Outreach in Sri Lanka' by the Centre for Climate Change Studies of the Department of Meteorology, Sri Lanka

1. Introduction:

The Department of Meteorology component of the project National Climate Change Public Awareness, Information and Outreach in Sri Lanka sponsored by the National Institute for Public Health and the Environment (RIVM) of Government of the Netherlands through the Technical Support Unit of IPCC Working Group III concluded very successfully with the conduct of the concluding seminar at Hotel Galadari, Colombo-1 on 13-14th December 2002. Under this project, the Centre for Climate Change Studies (CCCS) in collaboration with LIFE conducted a total of ten (10) nos. seminars on climate change awareness during the period June to December 2002. The list of seminars conducted under this project by the CCCS is given below.

1. At Ratnapura for the benefit of senior district level policymakers and administrators on 04th July
2. At Kegalle for the benefit of senior district level policymakers and administrators on 09th July 2002
3. At Balangoda for the benefit of public sector scientific personnel on 15-16th August 2002
4. At Colombo for the benefit of print and electronic media on 24th August 2002
5. At Balangoda for the benefit of public sector scientific personnel on 29-30th August 2002
6. At Mihintale for the benefit of academics on 19th September 2002
7. At Trincomalee for the benefit of senior district-level policymakers/administrators on 31st October
8. At Peradeniya for the benefit of academics on 07th November 2002
9. At Ampara for the benefit of senior district level policymakers/administrators on 25th November
10. At Colombo – the concluding seminar on 13-14th December 2002

The format of the seminars remained similar throughout the series. Each seminar started with a general introduction on climate change and subsequent presentations focussed on impacts, vulnerability, adaptation and mitigation aspects of climate change including IPCC Working Group III issues such as technical options, economics, sustainable development links and technology transfer. The relevance of these information to Sri Lanka too was discussed. In addition to a brief discussion at the end of each presentation, a somewhat lengthy discussion session was arranged at the end of each seminar in order for the participants to clarify most of the issues they had on climate change and related issues.

The feedback from almost all the participants was very encouraging. At several of the seminars the question of continuing this series of seminars to other target groups was raised.

2. Participation:

The total participation at this series of seminars was 697. The breakdown of the participants by seminar is given below:

Seminar No. 1 at Ratnapura	43
Seminar No. 2 at Kegalle	74
Seminar No. 3 at Balangoda	40
Seminar No. 4 at Colombo	43
Seminar No. 5 at Balangoda	45
Seminar No. 6 at Anuradhapura	102
Seminar No. 7 at Trincomalee	50
Seminar No. 8 at Anuradhapura	152
Seminar No. 9 at Ampara	64
Seminar No. 10 at Colombo	84

Breakdown by target group show: policymakers/administrators - 240, academics/researchers - 298, NGOs - 16, Media - 34, scientific – 68, and others – 42.

The conducted series of seminars based on the main target audience can be categorized as follows:

- For the benefit of district level policy makers and administrators - 04 seminars, viz., at Kegalle, Ratnapura, Ampara and Trincomalee
- For the benefit of public sector scientific personnel – 02 seminars, both at Balangoda of two-day duration
- For the benefit of academics – 02 seminars at Anuradhapura and Peradeniya
- For the benefit of print and electronic media – 01 seminar at Colombo
- For a cross section of all the target groups – the concluding seminar in Colombo.

3. Resource Personnel:

Following experts served as resource personnel at this series of seminars:

1. Mr. G.H.P. Dharmaratna, Senior Deputy Director of Meteorology and Head, CCCS
2. Prof. Mohan Munasinghe, Vice Chair, IPCC
3. Dr. B.M.S. Batagoda, Director, Ministry of Environment and Natural Resources
4. Dr. B.V.R. Punyawardena, Senior Scientist, Department of Agriculture
5. Mr. P.M. Jayatilaka Banda, Deputy Director of Meteorology
6. Mr. K.R. Abhayasinghe Bandara, Deputy Director of Meteorology
7. Mr.S.H. Kariyawasam, Meteorologist of the Department of Meteorology
8. Mr. L. Chandrapala, Meteorologist of the Department of Meteorology
9. Mr. K.H.M.S. Premalal, Meteorologist of the Department of Meteorology
10. Mr. S.S.B. Yalegama, Ministry of Environment and Natural Resources
11. Dr. W.J.M. de Costa, University of Peradeniya
12. Dr. S.P. Nissanka, University of Peradeniya
13. Dr. Ranjith Premalal de Silva, University of Peradeniya
14. Dr. C.K. Shanmugarajah, Ministry of Health
15. Mr. W.J.L.S. Fernando, Ceylon Electricity Board

16. Mr. I. Ranasinghe, Department of Coast Conservation
17. Mr. H.M. Jayatilaka, Department of Irrigation
18. Dr. T. Sugathapala, University of Moratuwa
19. Mr. A.G. Gunawardena, Forest Department

4. Seminar Materials:

The CCCS prepared a set of documents (extracts) on climate change and related issues based on he findings of the IPCC-TAR in both English and Sinhala. These together with Abstracts of each presentation was included in the seminar docket given to each participant. In addition, all the IPCC documents, as supplied by the WGIII TSU were put on display at each of the seminar venues and the participants were requested to note down the documents they require which were subsequently posted to them. At the final concluding seminar held in Colombo all the participants were given copies of Climate Change 2001 – Mitigation, Summary for Policy makers, A simplified guide to Mitigation and a copy of the booklet Introduction to IPCC.

5. Reports of the seminars:

Reports on each of the 10 seminars have already been submitted to the Technical Support Unit separately.

6. Documents which received most attention:

In general almost all the documents supplied by the TSU received a lot of attention from the participants. A special mention is required about the Climate Change Information Kit which received the biggest attention. Additionally the information extracts prepared by the CCCS in Sinhala/English based on TAR findings and the Summary Reports for Policymakers (SPMs) also received attention.

7. Questions raised at the seminars:

As the series of seminars were conducted for a varied group of audiences, the questions raised clearly demonstrated their standard of understanding of climate change and related issues. Highly technical questions were raised at the two seminars conducted for the benefit of academics at Anuradhapura and Peradeniya while some of the questions raised were quite basic at the seminars conducted for the benefit of district level policy makers and administrators. All in all most number of questions were raised on the scientific findings and also on model results (WGI issues), the Clean Development Mechanism and Carbon trading also received a lot of interest among all sectors of participants. Sustainable Development issues such as their effects on the development and the economy of a country also was raised at several gatherings.

Some of the major questions raised are,

- Clean Development Mechanism
    - How Sri Lanka can participate in the global carbon market
    - Possible CDM projects in the case of Sri Lanka
    - Potential Carbon stocks of Sri Lanka
    - Advantages/disadvantages of entering the carbon market
    - A lot of concern was raised about the non availability of carbon sequestration data of major forest types in Sri Lanka

- Science of Climate Change
    - Magnitude of anticipated changes in the major climate parameters
    - Most participants agreed in the need for developing better resolution climate change model outputs
    - Ways of reducing the uncertainty of model predictions
- Possible funding sources for Climate Change research studies
- Best approach for developing countries to cope with climate change (most were of the view that adaptation and vulnerability reduction are critical for developing countries such as Sri Lanka)
- How to integrate climate change policies with sustainable development strategies
- Climate Change Mitigation options – renewable energy sources, fuel switching, carbon sequestration etc.
- Vulnerability of major sectors to Climate Change
    - Water Resources
    - Coastal Resources
    - Ecosystems
    - Biodiversity
- The need for integrating climate change concerns into the development policies of the government

8. Identified problems:

- the non availability of high resolution survey data in Sri Lanka to properly identify inundation areas under different sea level rise scenarios were identified as a major lapse
- the non availability of carbon fixation data for major tree types in Sri Lanka
- Inadequacy of training/experience in project formulation, implementation and monitoring of projects involving adaptation/mitigation of climate change effects
- Inadequacy of national information grid
- Requirement for conducting more seminars/workshops to create awareness at district/village levels
- Requirement for more broader dissemination of Climate Change findings

9. Results obtained:

The target groups in this series of seminars/workshops were district and national level policymakers/administrators, academics/researchers, public sector scientific personnel, NGOs and media personnel. This series was responsible for creating an awareness on climate change and related issues among a cross section of all these target groups.

Due to the conduct of events of this nature, policy makers are made aware of the implications of climate change and that would make them consult scientific community before making decisions affecting the environment at both district and national levels. This would eventually lead to integrating climate change concerns into the development policies of the government.

In addition, these seminars resulted in studying and understanding the linkages between the development priorities and climate change impacts, adaptation and mitigation.

10. Information dissemination:

The Centre for Climate Change Studies of the Department of Meteorology under this project started a web site (http://www.meteo.slt.lk/cccs). The dissemination of climate change information is made through this web site. In addition, the CCCS is now publishing a monthly newsletter – 'Climate Change Newsletter'. Through this newsletter, which is distributed freely over a wide spectrum of readers (and also available in the web), climate change information is disseminated. During the last few editions of the newsletter, a section was fully devoted to outreach activities. Additionally, general information releases are made to the print as well as electronic media periodically on climate change.

11. Expenditure:

A duly certified breakdown of the accounts is attached as an annex to this report. Accordingly, the total expenditure incurred on this project is Rs. 1,136,215.95 equivalent to US Dollars 11,876.41.

Total funds received through the TSU to date is US Dollars 13,500.00. The balance money worth of Rs. 153,854.45 will be utilized for publishing the seminar proceedings and setting up & updating the Web page (www.meteo.slt.lk/cccs).

12. Acknowledgement:

The Centre for Climate Change Studies wishes to keep on record its gratitude to the National Institute for Public Health and The Environment (RIVM) of Government of the Netherlands and the Technical Support Unit of the Intergovernmental Panel on Climate Change Working Group III for not only sponsoring this project but also for the various helps given to us during the course of this project. Last but not the least, a special thank to Ms. Annick Osthoff Barros for coordinating the activities extremely well and for Ms. Suzanne Mulder for looking after the financial side of the project.

(N.A. Amaradasa)
Director of Meteorology

383, Bauddhaloka Mawatha
Colombo 7, Sri Lanka.
26th December 2002

Appendix 1.6 Outreach Report Tanzania

Proceedings of the Workshop on Mitigation of Climate Change in Tanzania in Relation to the Recent Findings of the IPCC WGIII (Outreach Activities), *13th – 14th June 2002, Courtyard Hotel in Dar es Salaam, Tanzania,*
October 2002

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Background

Over the past four years the Intergovernmental Panel on Climate Change (IPCC) Working Group III has completed a series of reports providing a comprehensive and up-to-date scientific assessment of climate change mitigation. All these reports were written by experts from both developed and developing countries and have been published for use by policymakers, academic communities, the private sector and other interested people around the world.

Owing to the differences in resource availability and technical capabilities, developing countries may encounter more difficulties in understanding and using the rich information, e.g. for further national analyses and decision making in the area of climate change mitigation. In this regard therefore, The IPCC Working Group III provided technical and financial support for outreach activities in developing countries (including Tanzania) and economies in transition.

1.2. Acknowledgements

We would like to record our sincere gratitude to the Government of the Netherlands for the generous support through IPCC WGIII TSU for sponsoring this workshop in Tanzania. CEEST also thanks the Division of Environment in the Vice President's Office and the Tanzania Meteorological Authority for their cooperation by their involvement in the Organizing Committee as well as their support in making the workshop a success.

1.3. Project Rationale and Objectives

The ***National IPCC WG III Outreach Workshop*** aimed at concentrating efforts in managing information and knowledge sharing on climate change among various Tanzanian experts, IPCC WG III experts, private sectors, policy makers, NGOs and academic experts. This is based on the fact that gaining a greater understanding on how the knowledge created by IPCC WG III could be transmitted and eventually better understood by relevant stakeholders in Tanzania, and to look into possibility of encoporating the findings in the national planning processes. CEEST took the initiative of organising a national workshop because CEEST has also been involve in climate change studies in the country and region for many years now, therefore, it had a lot of understanding of the institution and stakeholders involved in the climate change issues in the country, in this regards it had a better chance of getting the relevant institutions and stakeholders to be represented to the workshop.

CEEST believes that national wide approach was more effective both economically and achievement of wide disermination of information within a short time. Also the national approach gave a great opportunity to the various institutions in the the country to share their experiences and form a network for future cooperation.

1.4. Objectives

- To improve understanding among key stakeholders (policy makers, private sector, NGOs and academic experts) by disseminating and explaining the main findings of the Technical Assessment Reports and related Summary Reports
- To discuss the impact of the IPCC findings on national climate change response strategies with key policy makers, academic experts, private sector and NGOs
- To translate the information and the IPCC findings into actions, i.e. policy guidelines and programmes for increased capability in making appropriate technological decisions that may contribute to the social and economic development;
- To direct the knowledge gained towards helping national programmes facilitate the application of climate change technology through the promotion of relevent stakeholders understanding of scientific advances in climate change issues;
- In liason with various organisations, institutions, private sector, NGOs and networks create and enhance awareness in climate change through maintenance of information and knowledge exchange as well as documentation services.
- Disseminate the major findings of the IPCC Working Group III reports to government officials, business leaders, private sector, universities and researchers, and representatives of non-governmental organizations;
- Explore the relevance of these findings to climate change mitigation challenges and opportunities in Tanzania; and
- Building the capacity to apply the findings for climate change mitigation activities in the country.

Resource persons from within the country, the region and developed countries with a remarkable wealth of experience provided the highest standards of lectures/presentations on climate change issues.

1.5. Expected Outputs

The immediate expected output for the workshop was to provide a platform for sharing and exchange of information and knowledge as well as experiences and practices in climate change issues specifically on the findings of the IPCC WG III, with the view of strengthening its application for the social and economic development of the country. This has a direct link with the ongoing activities under the Climate Change Enabling Activities Projects, which are being undertaken in Tanzania under the Global Environmental Facility (GEF) funding.

Future expected outputs are:

(a) To create a national capacity for information exchange and dissemination on the wide and appropriate application of climate change technology as a results of the IPCC WG III findings;
(b) To formulate / create perment national and regional network to communicate and share information on the application of IPCC WG III findings in future climate change initiatives in the country and region at large. And look for opportunities of holding a regional workshop in the future.
(c) To facilitate research development, education and training in climate change as well as its application in order to meet the needs of the country.

(d) To improve the target understanding of climate change issues particularly the findings of IPCC WG III through provision of accurate and balanced information at all levels of the community;
(e) The creation of a virtual science-based information and knowledge network, which responds dynamically to the needs of the country on climate change and related issues
(f) To promote knowledge by local experts and stakeholders on how to access IPCC information

1.6. Relevance to On-going and Future Programmes in Tanzania

Currently Tanzania is undertaking various studies as on-going programmes in the area of climate change which in one way or another benefited from the results of the workshop. Therefore, the workshop was coordinated with the existing and on-going programmes in mind so as to contribute to the longer-term objectives of the outreach activities. Some of the on-going and future programmes in the area of climate change in Tanzania are as follows;

- Capacity Building for CDM in industry sector in Tanzania under UNIDO funding
- Greenhouse Gas Mitigation and Other Environmental Benefits of Integrated Power Development in East Africa under GTZ funding
- Development of country specific emission factor, public awareness and technology assessment need in climate change under GEF/UNEP funding (in the pipeline)
- Encouraging CDM energy projects to aid poverty alleviation in Tanzania is done in collaboration with the Centre for Environmental Strategy, The University of Surrey of UK.

1.7. Workshop Organization

The executing and implementing agency, The Centre for Energy, Environment, Science and Technology (CEEST) was responsible for the coordination and implementation of the activities for ***National IPCC WG III Outreach Workshop*** as well as liaising with the relevant authorities and institutions in the country and any other individuals and organizations. These institutions are country IPCC and UNFCCC focal points, office responsible for environment management, offices responsible for energy and finance institutions etc.

1.8. Methodology (Structure of the Workshop)

The Centre for Energy, Environment, Science and Technology organized the two days *National IPCC WG III Outreach Workshop.* The forum provided an occasion for climate change stakeholders to come together, hear, present and discuss their opinions as well as positions on the current and envisaged future status in the application of climate change mitigation technologies and related issues in Tanzania as a result of the recent IPCC WG III findings.

CEEST in collaboration with Vice President's Office (Division of Environment – UNFCCC Focal Point) and Tanzania Meteorological Authority (IPCC Focal Point) presented the current status of climate change studies in Tanzania and current climate change negotiations, dwelling on Mitigation of Climate Change, Technology Transfer and Emissions Scenarios, and the relevance of the studies to the recent IPCC WG III findings.

CEEST coordinated an organising committee composed of individuals from all stakeholders including Vice President's Office (UNFCCC and GEF focal point), Tanzania Meteorological Authority (IPCC focal point) as well as sectoral Ministries.

The organising committee arranged all technical and logistical aspects of the workshop including development of themes, identification of paper presenters, evaluation of papers abstracts and allocation of presentation timing in the workshop programme.

The organising committee was responsible for the development of the workshop programme. The committee was also responsible for provision of raporteur services as well as preparation of workshop proceedings

The organising committee held a press conference to advertise of the up coming workshop and its importance to Tanzania, this also involved contracting a freelance journalist produce newspaper articles and preparation of TV programme prior to workshop date. This assisted to give the workshop the required audience and trigger some sense of awareness to policy makers, private sector, academia and public on the importance of the findings of the IPCC WG III.

The two-day workshop was organized as follows;

Day 1 morning session was the opening session, whereby apart from the official opening there was a key note address to bring up conceptual issues with regard to climate change mitigation. Morning session also was the presentations by the regional expert from the IPCC WG III, [Prof. Ogunlade Davidson (did in the field of energy, transport, settlements, Technology transfer and sustainable development) Dr. Willy Makundi made the presentation on the Impact of the IPCC WGIII Findings on National Climate Change Response Strategies. Prof. Francis Yamba did for mitigation aspects in the field of energy, transport and settlements as per the findings of the IPCC WGIII.

Day 1 Afternoon session was presentations from CEEST in collaboration with Vice President's Office (Division of Environment – UNFCCC Focal Point) and Tanzania Meteorological Authority (IPCC Focal Point) on the current status of climate change studies in Tanzania and current climate change negotiations. The presentations also covered on going climate change activities and studies as well as envisaged future projects. The session also consisted of presentations from local experts on Mitigation aspects for Tanzania in relation to the recent findings of the IPCC WG III. As well as there was a presentation from the resource person or Lead Author from the IPCC TSU.

Day 2 morning session was presentation from CEEST in collaboration with Vice President's Office (Division of Environment – UNFCCC Focal Point) and Tanzania Meteorological Authority (IPCC Focal Point) on the current status on climate change negotiations. Then in the afternoon, there was a breakout session for group discussions to chart out strategies for dissemination of the IPCC WG III findings and outreach activities within the country as well as among the relevant stakeholders. **(See Appendix IV)**

1.9. Participating Institutions

The workshop involved more than 50 participants selected by the organizing committee from various stakeholder institutions and individual climate change stakeholders. The selected participants came from the following institutions:

- Vice President's Office, Division of Environment
- Ministry of Energy and Minerals
- Ministry of Natural Resources and Tourism
- Ministry of Agriculture and Food Security
- President's Office Planning and Privatization
- Tanzania Meteorological Authority (TMA)
- National Development Corporation (NDC)
- Tanzania Investment Centre
- National Environment Management Council (NEMC)
- Centre for Energy, Environment, Science and Technology (CEEST)
- Tanzania Greenhouse Gas Action Trust (TAGGAT)
- Tanzania Chamber of Commerce and Industries and Agriculture (TCCIA)
- Clean Production Centre of Tanzania
- Non-Governmental Organizations
- Private sectors
- Academia and higher learning institutions, including University of Dar es Salaam, Sokoine University of Agriculture and University College of Lands and Surveys (UCLAS);
- Research Institutions including: Institute of Resource Assessment; Commission for Science and Technology (COSTECH); Tanzania Industrial Research Development Organization (TIRDO)
- Media. **(See Appendix V)**

1.10. Reporting and Deliverables

- All deliverable will be available for follow-up activities. For example these proceedings of the workshop will be available through internet (website: www.ceest.com), this site belongs to the executing agency for this project i.e., CEEST
- This report also includes an evaluation of the outreach activities, which would be used to improve future activities. This report will be widely circulated/disseminated both internally (national wide to the relevant stakeholders by courier and internet and e-mail) and externally (to TSU and IPCC experts (internet and e-mail)
- A summary report has been prepared which also includes evaluation of the workshop. These reports will be circulated/disseminated both internally (national wide to the relevant stakeholders by courier, internet and e-mail) and externally to IPCC TSU.

1.11. Cooperation with support of the TSU and IPCC

- The organizing committee highly depended on the TSU and IPCC for direct support of activities and arrange a practical exchange of information, as well as in-kind support to a project, such as providing information materials e.g., IPCC summary booklets and of experts through its network of IPCC expert who invited to the workshop for presentations.

Supporting materials that were requested from/and provided by the IPCC TSU are as follows;

- TAR WGIII and SPM or the CD-ROM with 5 WGIII Special Reports

- The UNFCCC and Kyoto Protocol,
- Climate Change information Kit
- A Guide to Climate change process (booklet and CD-ROM)

All the materials were in English language, and these materials were distributed to all workshop participants and other relevant institutions national wide. The organizing committee appreciates for receiving many copies for each document or material.

2. WORKSHOP SUMMARY & RESOLUTIONS

2.1. Plenary Sessions

2.1.1. Introductory Remarks

The introductory remark was given by Mr. Hubert Meena, the Acting Director of the Centre for Energy, Environment, Science and Technology (CEEST). He started by welcoming the participants to that important **Outreach Workshop on Mitigation of Climate change in Tanzania in relation to Recent Findings of the IPCC WGIII**. He told the participants that the workshop was organised by Centre for Energy, Environment, Science and Technology (CEEST) in collaboration with the Vice President's Office, Division of Environment (UNFCCC Focal Point) and Tanzania Meteorological Agency (IPCC Focal Point). The workshop was funded by the Government of the Netherlands through the IPCC Technical Support Unit in its Outreach Activities for Developing Countries and Countries with economy in transition.

In his introductory remarks he also said that the background of that workshop, was due to the fact that for the past four years the Intergovernmental Panel on Climate Change (IPCC) Working Group III has completed a series of reports providing a comprehensive and up-to-date scientific assessment of climate change mitigation. Owing to the differences in resource availability, developing countries may encounter more difficulties in accessing and using the rich information, for further national analyses and decision making in the area of climate change mitigation. In view of the above the three institutions mentioned applied for fund and organised that two days workshop on the IPCC Working Group III Outreach Activities.

Mr. Meena went further saying that since 1993 the Tanzania has been working on climate change studies through the Division of Environment in the Vice President's Office. These studies will enable Tanzania fulfil part of its obligations under the United Nations Framework Convention on Climate Change (UNFCCC). Therefore that workshop assisted on how the IPCC WGIII finding compliment with what Tanzania has done so far in the area of climate change.

He lastly informed the participants that IPCC provided materials to make the workshop successful. The provided material were the reference material, which were made available to all participants, and some of them will be taken to Universities library for the use by the students as part of the outreach activities. **(See Appendix I(a))**

2.1.2. Opening Remarks

The workshop was officially opened by Mr. Erick Mugurusi the Director of Environment, in the Vice President's Office. He said it was his pleasure to officiate the opening ceremony of

important workshop on Mitigation of Climate Change in Tanzania, in Relation to the Recent Findings of the IPCC WGIII. His first task was to welcome the participants to the workshop. He expressed his appreciation for the presence of all participants; he thanked them for considering the workshop worth them while, and for finding time to attend. He then said their presence indeed signifies the importance they attach to the challenges of climate change we face. And that was why they were there on that day to acquaint themselves with some important information from the IPCC and deliberate on its usefulness in addressing climate change in Tanzania.

Mr. Mugurusi said that climate change has recently emerged as major scientific and political issues of global concern. Climate change is a problem with unique characteristics. It is a global long term, and involves complex interactions between climatic, environmental, economic, political, institutional, social and technological processes. These interactions have significant international and intergenerational implications in the context of broader societal goals of equity and sustainable development.

He also said that for Tanzania, adaptation to the impacts of Climate change must be an integral part of national sustainable development goals. For this objective to be achieved, it is very important to build a credible knowledge base for the development of technical and management options in all relevant sectors, and formulate strategic measures that can do the most. Development of data and information is central for verifying the scientific underpinning needed both for deciding whether a particular strategy is likely to be successful or not, and for evaluating its wider environmental consequences. The information and data contained in the IPCC WGIII document are global; it should be downscale to fit the Tanzania situation and to define the benchmark for the way forward.

He took the opportunity to thank all the experts who have participated in drafting IPCC important documents, he was confident that the workshop will provide considerable contribution to the understanding of the IPCC WGIII Reports. In his conclusion, he wished to express the Government's appreciation to the Government of the Netherlands through the IPCC Technical Support Unit for the financial support to facilitate the convening of the workshop. **(See Appendix I(b))**

2.1.3. Closing Remarks

Dr. Mohamed S. Mhita, Director General Tanzania Meteorlogical Agency, Permanent Representative of WMO and IPCC Focal Point officially closed the workshop on 14th June 2002. Started by thanking CEEST for seizing the opportunity availed by the government of the Netherlands to support IPCC activities in third world countries to organize the workshop. He said It was the first time in Tanzania to have such a workshop although IPCC has been in existence for much longer and it always produced reports. It was is precisely because of that the Netherlands government found it was imperative to support country workshops to get the reports known to others who are supposed to know about them without whose participation there was little of value in the efforts that went into preparation of the reports.

He told the participants that to most of them, it was possible that they had heard of Climate Change only in passing until yesterday when they heard what it really was and what were the issues. As all had been drawn from many disciplines and sectors, probably many more had been left out due to limited financial resources. Climate Change issues are relevant to all of humanity in very many different ways, ideally all of us are players in global warming, only

the levels differ. Conversely, we are all sufferers from global warming. The fact that you do not contribute much to global warming does not make you not safer from the consequences of worse polluters.

Dr. Mhita informed that participants that WorldScan model simulations show that if no control measures were implemented, greenhouse gas emissions from developing countries alone would by the year 2030 exceed the maximum global levels consistent with a stable atmospheric concentration of 550ppmv. There is thus an urgent need for these countries to adopt climate sensitive policies. Therefore, The effectiveness of climate change mitigation can be enhanced when climate policies are integrated with non-climate objectives of national and sectoral policy development and be turned into broad transition strategies to achieve the long-term social and technological changes required by both sustainable development and climate change mitigation. Just as climate policies can yield ancillary benefits that improve well-being, non-climate policies may produce climate benefits. It may be possible to significantly reduce greenhouse gas emissions by pursuing climate objectives through general socio-economic policies. He then said that we certainly require both sustainable development and climate change mitigation for our country, which is why we had assembled many disciplines there to get a wide range of cross section in society so that they can know what was involved and how to mitigate against the effects of climate change.

He also warned that It is argued that mitigation alone will not solve the impacts of climate change. Adaptation will be necessary to avoid, or at least reduce, much of the possible damage; and since we need many of the adaptations today regardless of climate change in the future, many of the adaptive strategies for climate change can be 'win-win'. It is thus important to find a blend of mitigation and adaptation to meet the challenge of climate change. Mitigation can buy time for adaptation and adaptation can raise thresholds of tolerance that need to be avoided by mitigation. Considered separately they appear inadequate to meet such a challenge, but combined they would make a powerful response.

Dr. Mhita in his closing remarks concluded by quoting IPCC findings by saying that '*Although climatic models still remain uncertain, they represent a synthesis of present knowledge regarding the interaction between a multiplicity of processes as well as providing a degree of internal consistency to the analysis. They are superior to the qualitative arguments that are sometimes presented in answer to the question if the successive changes in the climate are the result of human activity. A comparison with actual observations supports the view that model simulations also can be used to provide an overview of the future changes in climate that may result from different emission scenarios. Models can also be further developed as the state of knowledge about the dynamics of the climate improves.'***(See Appendix I(c))**

2.1.4. Overview of IPCC Evolution, Framework and Operation

This presentation was made by Prof. Davidson Ogunlade Co-Chair IPCC WGIII and Director of EDRC at the University of Cape Town. In his induction he said that scientists knew about greenhouse effect for over a 100 years ago, whereby they found that natural GHG effect increase the global mean temperature to 15 ^{0}C that is warm enough to sustain life, but human activities (fossil fuel burning) more CO2 released led to added GHG emissions, added greenhouse effect so Global Warming.

The main issues stressed in this presentation were as follows;

- History, organization, structure and operation of IPCC
- Climate change as an energy problem
- Major problem in Africa is climate variability and low response capability
- Key Issues for Africa:
  1. Capacity building to respond to climate change
  2. Technology transfer
  3. Ratification of Kyoto Protocol
  4. Sustainable development projects with climate co-benefits

It was concluded that IPCC summarizes current knowledge but does not create new knowledge – challenge to African countries to participate in creation of knowledge. **(See Appendix II (a))**

2.1.5. Working Group III Third Assessment Report Findings

Prof. Davidson Ogunlade Co-Chair IPCC WGIII and Director of EDRC at the University of Cape Town made this presentation. He said that the WG III in its report and findings assesses the scientific, technological, environmental, economic and social aspects of the mitigation of climate change. The WGIII findings have taken into account political changes such as the agreement on the Kyoto Protocol to the United Framework Convention on Climate Change (UNFCCC) in 1997, the findings also draws on a number of IPCC Special Reports, notably the Special Report on Aviation and the Global Atmosphere, the Special Report on Methodological and Technological Issues in Technology Transfer (SRTT), the Special Report on Emissions Scenarios (SRES), and the Special Report on Land Use, Land Use Change and Forestry (SRLULUCF)

In summary the main issues stressed in the presentation were as follows:

- Linkages between climate change and sustainable development
- Different C emission levels in different paths to development
- Technical and mitigation options
- Land use options
- Barriers to achieving the potential technologies
- Cost implications in mitigation aspects
- Benefits of mitigation
- Decision making framework combining climate change and sustainable development **(See Appendix II(b))**

2.1.6. IPCC - TAR Implications to National Response Strategies in Land Use, Land Use Change and Forestry

Dr. Willy Makundi from Lawrence Berkery National Laboratory in USA made this presentation. In his presentation he indicated the key steps for assessing responses in LULUCF and Pre-requisites for land-based mitigation assessment in the country in the relation to the IPCC WG III findings.

In summary the main issues stressed in the presentation were as follows;

- Scope of the report: to assess aspects of the mitigation of climate change through the control of GHGs and enhancement of sinks in an interdisciplinary manner.
- Key questions addressed: The nature of the mitigation challenge; Options, implementation, costs and co-benefits of mitigation activities; Available information from WGIII and gaps in knowledge for research
- Summary of TAR findings:

1. Comprehensive response
2. Earlier the better
3. Activities worth doing anyway
4. Information premium
5. Knowledge gap **(See Appendix II(c))**

2.1.7. Mitigation Aspects in the Field of Energy, Transport and Settlements as per Findings of IPCC WG III

This presentation was made by Prof. Francis Yamba the Director of the Centre for Energy, Environment and Engineering of Zambia (CEEEZ). In his presentation he stressed the following points.

- Overview of energy supply (fossil fuel/ renewable energy), transport, buildings
- Examples with relative costs for each sector
- Benefits of using such technologies
- Barriers to their mitigation
- Opportunities for mitigation **(See Appendix II(d))**

2.1.8. Mitigation Aspects in the Field of Land Use, Land Use Change, and Forestry as per IPCC WG III Findings

Dr. Willy Makundi from Lawrence Berkery National Laboratory in USA made this presentation. In his presentation he stressed the following points.

- Key elements in the forest management sector
- Definition of sustainable development
- Ecosystem health indicators for sustainable forest management
- Key steps for assessing responses in the LULUCF
- Driving factors of land use distribution
- Mitigation options in integrated community development sectors (agriculture, drylands, waste management, forestry)
- Activities in SFM for maintaining and expanding carbon stocks
- Evaluation, comparing, and prioritizing mitigation activities
- Accounting methods, cost-benefit analysis
- Cost effective indicators and macro-economic indicators
- Implementation policies and their barriers
- Shortcomings **(See Appendix II (e))**

2.1.9. Technology Transfer and Sustainable Development Issues

Prof. Davidson Ogunlade Co-Chair IPCC WGIII and Director of EDRC at the University of Cape Town made this presentation. He said that Technology transfer is a broad set of processes covering flow of knowledge, experience, equipment amongst stakeholders, it also includes technology diffusion and technology cooperation between developed and developing countries as well as within/amongst each of the groups.

The importance of Technology Transfer among others it assist in achieving the ultimate objective of the UNFCCC (stabilization of concentrations at 'safe level') requires rapid technological innovation and widespread transfer of environmentally sound mitigation technologies. Adaptation to climate change is inevitable and that also requires the transfer of adaptation technologies. In this regards therefore, technology transfer fits into the broader need for all countries to find new sustainable paths for development.

In summary the main issues stressed in the presentation were as follows;

- Technology is like a culture- difficult to transfer
- Importance and perspectives of technology transfer
- UNFCCC and the Kyoto Protocol relative to technology transfer
- Decisions in Argentina, Bonn and Marrakesh
- Funding issues with technology transfers
- Facilitating transfers and access to publicly owned and supported technologies
- Are existing mechanisms sufficient?
- Are new mechanisms needed?
- Private sector participation in technology transfers
- Barriers to technology transfers
- What is sustainable development (10 challenges) **(See Appendix II(f))**

2.1.10. Overview of Climate Studies & Mitigation Aspects for Tanzania

Mr. Hubert Meeana and Mr. Stephen Mwakifwamba from CEEST made this presentation. Since 1993 the Tanzania has been working on climate change studies through the Division of Environment in the Vice President's Office. These studies aimed at enabling Tanzania fulfill part of its obligations under the United Nations Framework Convention on Climate Change (UNFCCC). The studies undertaken by Tanzania in climate change include, among others: - Sources and Sinks of Greenhouse Gas Emissions in Tanzania, Greenhouse Gas Mitigation Study, Study on the Assessment of Vulnerability and Adaptation to Climate Change, The Development of National Action Plan for Climate Change, Greenhouse Gases Global Trends and Statistics, and Enabling Activities Towards preparation of the Initial National Communication to the UNFCCC

In summary the main issues stressed in the presentation were as follows;

- Climate change studies undertaken in Tanzania
- Climate change institutional framework in Tanzania
- Objectives of climate change studies
- Benefits arising from climate change studies
- National Inventory of Anthropogenic Greenhouse Gas Emissions and Removals

- Methodological Issues
- Challenges **(See Appendix II (g))**

2.1.11. Key Mitigation Related Conclusions at UNFCCC CoP 7 and their Implications to Tanzania

Mr. Richard Muyungi Assistant Director, Division of Environment in the Vice President's Office, who also is the country negotiator in COPs, made this presentation. In summary the main issues stressed in his presentation were as follows;

- UNFCCC Convention and Mitigation
- Key COP 7 conclusions and Mitigation issues
- Relevance of COP7 Decisions to national development priorities
- Importance of Tanzania's participation in mitigation projects **(See Appendix II(h))**

2.2. Group Discussions

2.2.1. Discussion Topics

Group One: Mitigation of Climate Change and Sustainable Development in Tanzania

- Defined 'awareness' as knowledge and training that will ultimately support decision making on issues related to climate change
- Development of national policy on climate change and a detailed strategy
- Priorities to be assigned to relevant institutions
- Formation of a technically skilled committee on climate change mitigation
- Implementation of an awareness program including popular participation in policy formation at grassroots level
- Understanding mechanisms for accessing GEF and other funds (proposal writing, procedures, etc.) and CDM project opportunities.
- Training in climate change technologies

Group Two: Mitigation of Climate Change in Energy & Transport Sector in Tanzania

- Traffic congestion mitigation and improvement of public transport infrastructure
- Access to electricity for the poor
- Hydro, biomass fuel and cleaner energy options explored
- Subsidies
- Finance using soft loans
- Shifting from diesel to electric
- IPCC should facilitate access to financing options
- Future research on biomass fuels

Group Three: Mitigation of Climate Change in Land Use and Land Use Change and Forestry (LULUCF), Agriculture & Waste Management in Tanzania

- Legal framework for enforcing implementation
- Specific action plan in place for guiding implementation

- Priority areas: Irrigation schemes; Flooded areas and wetlands; Forestry management including biofuels; Farming systems; Animal husbandry; Restoration and rehabilitation of degraded ecosystems; Protected areas; Islands.
- Strengthen networking and collaboration with regional, bilateral and LDCs/South – South cooperation, esp. through short and long term courses, workshops, publications/newsletters, and research on priority areas.
- Increased research and dissemination (farming and irrigation systems, biogas utilization, etc.)
- Identify and strengthen areas of collaboration (workshops, newsletters, etc.)
- Increase awareness of general public on climate change issues
- Integrate climate change awareness into school curriculum to involve the next generation
- Impact of small scale mining

2.3. Group Discussions Findings

2.3.1. Group 1: Strategies & Options for Mitigation of Climate Change and Sustainable Development in Tanzania

Faciliated by Prof. Ogunlade Davidson

i) Defining Awareness

knowledge and training that will ultimately support decision making on issues related to climate change.

The role of IPCC on capacity building and creation of awareness:

- To provide information to the focal points which develop strategies for the dissemination of information.
- To form a network of people that can contribute to the information gathering and capacity building.

ii) Strategies

- An institutional analysis for the identification of the potential capacity of institutions and people.
- Priority issues to be assigned to the relevant institutions to analyze strengths/weaknesses.
- Formation of a national climate change committee that should be a technical- not administrative- committee.
- Address the means of getting feedback from the stakeholders.
- Carry out an awareness programme.
- Identification of priority areas for a national response strategy.
- A detailed plan on how to tackle climate change impacts.
- Future plan: Research and formation of a national response strategy
    - Pursue opportunities for CDM projects analyzing of CDM project and advice accordingly/guidance for the private sector.
    - How to harness the GEF funds and prepare strategies for accessing funds.
    - Assessment of responsibility on climate change mitigation and what can be done.

iii) Institutional Setup

The Climate Change Committee members should include the following;
IPCC focal point
UNFCC focal points
Institutions to provide technical support:

- UDSM, Institute of Marine science, NEMC
- Meteorological agency VPO, Env. SUA
- TCIAA (chambers of commerce)
- Department of Forestry
- Finance and development depts.
- Investment Promotion Center
- Youth, NGOs, CBOs, Private sector entities

The government could direct one of the member organizations to conduct the meetings (e.g. UDSM, Tanzania Meteorological Agency etc. and help address the issue of how to access funds). This technical committee also will have the responsibility of coordinating the activities national as a secretariat. The two focal points of IPCC and UNFCCC are to function in a coordination capacity as members and not as chairpersons.

iv) Policy and legislation

- We must have policies on National strategy on Climate Change.
- Identification of institutions of excellence which are already ahead in issues of climate change and in issues of climate change, and use of these institutions for capacity building. (e.g., CEEST, University of Cape town SARD-GEF fund to support the region)
- Networking between the institutions.
- Monitoring and Evaluation – people disseminating to the IPCC.
- Awareness Campaign multimedia program the local programs that will show on what is the real situation/ what is happening in their local areas.
- Dissemination of information widely focuses on awareness program with a focus on youth and local people as a driving force of the change and progress.
- Repackaging the information i.e. prepare the packages in the simple language which will be used by simple and local people.
- Need for training and peer education with digestible material in our national language for the long term and short term.

2.3.2. Group 2: Strategies & Options for Mitigation of Climate Change in Energy, Transport and Waste in Tanzania

Facilitated by Prof. Francis Yamba

i) Baseline

Energy Sector

A baseline assessment was selected to help us identify a focus. The electricity sector as identified as one of the sectors providing opportunities for development through the climate

change convention. For the baseline, future electricity supply sources were identified as the following:
- Hydro
- Gas
- Fossil fuel
- Coal
- Interconnection from Zambia and Uganda

Link to Clean Development Mechanism (CDM) - The technologies currently been used are old and inefficient. There is therefore an opportunity, which should be taken advantage of, to improve them through use of the CDM.

Transport Sector
This is a major source of emissions. The key problem is that the sector is wholly dependent on petroleum products. Major efficiency problems in the sector include:
- Age of vehicle – many cars are old.
- Maintenance – the vehicles are poorly maintained.
- Infrastructure – the infrastructure is poor leading to more consumption and increased emissions. (Ex: road maintenance is not done regularly.)
- Traffic/urban planning – need to reduce traffic jams through traffic management.
- Quality of fuel – petroleum products in Tanzania still uses lead for octane.
- Public transport – still poor and hence people use private means and more consumption and more emissions.

Buildings
In Tanzania, cooking, lighting, and cooling are the key issues in buildings.
Cooking
- There is a heavy reliance on biomass.
- People can't switch to electricity because only 10% have access.
- Rural electrification is only 1.9%.
- Even many electrified households cannot afford to use electricity for cooking because of high tariffs.

Solutions
- Small scale desecrated system mini- hydro and biomass gasifiers to provide electricity to remote rural areas.
- Improve stoves' efficiency for household cooking.
- Subsidies to enable households to switch to LPG, electricity.

Lighting
- Bulbs used are not efficient. Most households use kerosene.

Solutions
- PV system for light
- Energy saving bulbs

Cooling
- The AC and refrigerators used are still inefficient and old technologies which are obsolete.

Solutions
- Refrigeration – energy efficiency in refrigeration should be increased.

Waste
Urban centers in Tanzania are rapidly growing, leading to more waste generation. The waste is improperly disposed, leading to environmental problems. Municipal waste can be harnessed to generate electricity through the landfill gas.

ii) Strategies and Options for Climate Change Mitigation

Energy
Policy Formation
- Energy policy existing.
- Legal and regulatory framework missing.
- The challenge is to promote renewable energy technologies that should be given more emphasis.

Implementation
– capital is the main barrier

Institutions
– TANESCO; independent power producers; IPPS; ministry of energy.

Opportunities
- Capacity for CDM to assist in developing improved fuels.
- Institution for offering credits should be developed.
- Research- CEEST, TATEDO, etc.
- Challenges - finding stakeholders, grassroots organizations, etc. and funds.

Transport
Policy formulation and implementation
- Lack of policy on fuel saving vehicle efficiency, engine size etc. in Tanzania

Institution
- No clear climate change policy at institutions.
- Duplications by the various institutions involved such as ministry of transport, police, meteorology and environment departments. No clear mandates.

Research
- Knowledge on improved technologies not available.
- Knowledge on existing technologies should be disseminated to stakeholders.

Buildings
Policy
- Rural electrification programs are in place through the energy act/master plans.
- Programs on improved stoves are been implemented.
- No policy for encouraging use of LPG by the government.
- No policy on energy saving in urban and rural settlement.

Institutions
- CEEST, TANESCO, TATEDO.

Research and development
- Most of the components and devices are imported. However, R&D should be intensified to improve the efficiency of local components and encourage local manufacture of the devices.
- Minimal dissemination of existing knowledge to policy makers and stakeholders.

Waste

Policy formulation and implies
- Recycling of solid wastes to generate electricity policy and programs in place. (For example: a program for solid waste to energy planned in Dar es Salaam)
- Waste can also be used to prepare briquettes for energy.

iii) Priorities

Energy
Develop a comprehensive energy master plan that takes into account climate change issues in the implementation.
- Legal and regulatory framework with incentives to encourage generation from renewable sources and energy use from other environmentally friendly sources.
- Provide subsidies to enable residents afford the technologies.
- Financing should be provided to enable a switch to more efficient and environmentally friendly technologies. (Ex: soft loans).
- Combine cycle gas turbines that are more efficient should be promoted.
- Demand Side Management programs in household and industrial sectors should be promoted to improve energy efficiency.
- Interconnection with other countries such as Zambia that use hydro should be encouraged to reduce the electricity produced from thermal.

Transport
- Vehicle inspection and maintenance, energy size limitation, fleet standardization.
- Infrastructure development – especially roads.
- Traffic management – to reduce road congestion.
- Improvement in quality and use of public transport – buses, trains, etc.
- Change for diesel to electric trains (long-term).

iv) Sharing experiences

Energy
- Use of natural gas: Tanzania is developing one and should be able to share its experiences with other countries.
- Energy cogeneration from sugar cane in Mauritius is one of the most successful.

Transport
- Public transport – other cities such as Curitiba in Brazil have implemented sound urban transport systems successfully and Tanzania should learn from these.
- Ethanol – Zimbabwe, Kenya and others have experiences in transport using ethanol from which Tanzania can learn.
- Compressed natural gas – has been successfully used in countries such as Egypt; experiences from which Tanzania can also learn.

Regional and Bilateral Projects
- Initiatives are already in place such as the South African Power Pool.
- Opportunities such as interconnection with Zambia for electricity, Zambia e.g. TAZAMA pipeline, East Africa Community road network is also a good CDM project for transport.

v) Future Activities

Energy
There is a need to incorporate climate change component in the on-going energy projects. Traditional technologies currently been used for example to generate electricity can be upgraded through the CDM.

Transport
Infrastructure can be upgraded through the CDM. For instance current road programs can be linked to CDM for funding since there is going to be a reduction in the greenhouse gas (GHG) emissions.

vi) Outreach
Inform the following people about climate change and the existing challenges and potentials and opportunities for their participation;

- Private sector
- Stakeholders on the ground; communities
- Politicians
- Financing institution responsible for providing and disbursing funds

vii) Research
There is great potential to use biomass for modern electricity generation through decentralized systems, especially in the rural areas. This potential has not yet been exploited and the impact in terms of reducing GHG emissions is promising. Research should be carried out to identify this potential and mechanisms to implement the viable projects locally.

2.3.3. Group 3: Strategies & Options for Mitigation of Climate Change in LULUCF, Agriculture and Waste Management Sectors in Tanzania

Facilitated by Dr. Willy Makundi

i) Relevance

Observed that: (a) LULUCF contributes about 20% of Carbon emissions globally
(b) Tanzania contributes between 0.006-0.01% of the global emissions
(c) Reasons, bad land use, management, agricultural practices

Policy formulation: Need for designing policy on climate change that is inclusive.

Implementation:
(a) Political will and determination to enforce the policy
(b) Legal framework for implementation
(c) Strategic plan of action
(d) Monitoring and evaluation systems

Institutions: Existing relevant institutions be given legal mandate for implementation and follow up of related issues (NEMC,TBS, Land Use, Planning Commission, etc.).

Research and Dissemination: Strengthen relevant R&D institutions to undertake research and dissemination.

ii) Priority areas

a) Irrigation schemes
b) Flooded areas and wetlands
c) Forestry management including biofuels
d) Farming systems
e) Animal husbandry
f) Restoration and rehabilitation of degraded ecosystems
g) Protected areas
h) Islands

iii) Collaboration

(a) Strengthen collaboration with LDCs and other South – South Commissions
(b) Establishment and strengthened networking

iv) Identification of relevant areas for regional and bilateral collaboration

a) Short and long term courses
b) Workshop and seminars
c) Publications/newsletters
d) Research
- Irrigation systems
- Ruminant production systems
- Biogas utilization
- Land tenure systems

v) Exploration of ways and areas for injection of Climate Change (CC) agenda

a) Poverty reduction activities consider CC mitigation
b) Research on land use consider CC mitigation
c) Project appraisals and impact assessments consider CC mitigation

vi) Feedback to the IPCC Working Group III

a) Progress reports
b) Annual conferences
c) Country chapters

vii) Future areas

a) Detailed studies of sources and sinks greenhouse gases (GHGs)
b) Creation of public awareness to the general public and policy makers on CC
c) Curriculum development
d) Media involvement

2.4. Major Discussion Issues that Arose from the Outreach Workshop on Mitigation of Climate Change

- Dissemination of research findings (UNFCCC, IPCC, CEEST)
- Institutional mechanisms for climate change issues in Tanzania (funding, negotiation positions, research, expert reviews, inputs, feedback)
- Technological acquisition versus transfer issue
- Sourcing of local finances for climate change projects

- Key issues for Africa (capacity building; technology transfer; Kyoto Protocol; Sustainable Development projects with climate change co-benefits
- CDM Project Proposals, i.e., opportunities for using IPCC findings to develop CDM projects
- Poverty eradication – energy subsidy for the poor
- Adaptation and mitigation to be pursued

3. CONCLUSIONS AND RECOMMENDATIONS FROM THE SECRETARIAT

- The organizing committee held a press conference and it has contracted a freelance journalist to produce newspaper articles and preparation of a TV programme prior to the workshop. This was done by the organising committee together with the resource people (Prof. Ogunlade, Prof. Yamba and Dr. Makundi) we had a press conference on 13th June 2002 that was during the workshop. We also managed to contract a freelance journalist to produce newspaper article (a copy of the news article is attached)
- Related to participants' views regarding the workshop, we asked which of the materials they liked the most and why? This is because there were books, booklets, brochures and CD ROMs, we thought some might like the books more than the CD ROMs depending on their access to computers. Most of the participants liked most the hard copies than the soft copies because of lack of computers in their offices or their homes
- Related to General observations by participants, after each questions were raised by the organizer, the issues were raised on open ended questions where the participants were free to give out their opinions.
- The workshop was designed such that there were plenary presentations and discussions as well as group work. We expected participants to give their views on which part they liked most. May be in future more attention to the methodology issues. The participants did like the way the workshop was designed
- During the workshop discussions the organisers found out that most of the participants did not like most the way the recap of previous day was too long may be they thought it was too much of a repetition, this point was noted for future improvement of the recap in order not to make the participants uncomfortable
- It was assessed and observed that most of the participants were satisfied with workshop organisation and the materials, which were presented to them, thus why they said the objectives of the workshop to some extent were achieved. Some participants it was their first time to hear the IPCC issues in relation to climate change studies therefore that workshop it was an eye opener to them.
- It was observed that some participants wanted the workshop to take 3 days or more, as we mentioned above for some participants it was their first time so they wanted to learn more about the climate change issues
- The organisers think that, even the participants suggested that the media would like a special workshop for them to be trained on how to disseminate the information. Nothing was missing but issues were discussed as dissemination to more technical people and not to normal Tanzanian in the street. Those media who were present participated in asking questions and listening to the presentations from the resource persons.

- There was also personal feeling of some participants and may be they felt that the discussions were too academic because of having difficulty in following up the discussions and thought may be to have a workshop special for ordinary people and there the things simplified and may be discussed in local language (Kiswahili).
- Most of the participants were impressed by the way the resource persons steered the discussions as well as their knowledge of broad range of issues. They had an opportunity to meet privately with the resource people so that to get some clarification for the issues that were not clear to them during the presentation sessions.
- The participants gave their suggestions or advise for future workshops: they said that materials to be distributed to the participants early, they were suggesting that materials of the workshop material would have to be distributed before the workshop and not during the workshop so that the participants could have enough time to go through before coming the workshop sessions. This might assist the participants to follow the presentation easily.
- It was strongly advised that the future workshops should have a strong representation of the media to teach the common man. As some of the participants found that the subjects covered by the workshop were complicated and that the media could have explained/translated these subjects. So they also think that the materials distributed were complicated as well, so they needed some sort of analysis or a brief summary of the contents of the documents. However, some of them were conversant with the issues
- The participants wanted to get the feedback after the workshop, things like distribution of workshop proceedings to all participants and the design of the follow-up activities after the workshop.

ATTACHMENT I: OPENING CEREMONY

Attachment I(a): INTRODUCTORY REMARKS

INTRODUCTORY REMARKS TO THE OUTREACH WORKSHOP ON MITIGATION OF CLIMATE CHANGE IN TANZANIA 13TH – 14TH JUNE 2002, COURTYARD HOTEL DAR ES SALAAM

BY,

Mr. Hubert Meena
The Centre for Energy, Environment, Science and Technology

Our Guest of Honour, Mr. Chairman, Workshop Participants, Ladies and Gentlemen,

It is with great pleasure that I welcome you to this important **Outreach Workshop on Mitigation of Climate change in Tanzania in relation to Recent Findings of the IPCC WGIII**. The workshop is organised by Centre for Energy, Environment, Science and Technology (CEEST) in collaboration with the Vice President's Office, Division of Environment (UNFCCC Focal Point) and Tanzania Meteorological Agency (IPCC Focal Point). The workshop is funded by the IPCC Technical Support Unit based in the Netherlands, through in its Outreach Activities for Developing Countries and Countries with economies in transition.

Mr. Chairman
May be I should start by giving the background of this important workshop, as you might be aware, over the past four years the Intergovernmental Panel on Climate Change (IPCC) Working Group III has completed a series of reports providing a comprehensive and up-to-date scientific assessment of climate change mitigation. All these reports were written by experts from both developed and developing countries and have been published for use by policymakers, academic communities, the private sector and other interested people around the world.

Owing to the differences in resource availability and technical capabilities, developing countries (including Tanzania) may encounter more difficulties in understanding and using the rich information, e.g. for further national analyses and decision making in the area of climate change mitigation. In this regard therefore, the Government of Netherlands through the IPCC Working Group III Technical Support Unit (IPCC WGIII TSU) provided technical and financial support for outreach activities in developing countries and economies in transition.

Mr. Chairman
In view of the above the Centre for Energy, Environment, Science and Technology (CEEST) in collaboration with the Ministry of Communications and Transport (Tanzania Meteorological Agency) and the Vice President's Office (Division of Environment) applied for that fund and organised this two days workshop on the IPCC Working Group III Outreach Activities. The purposes of this workshop are as follows:

- To improve understanding among key stakeholders (policy makers, private sector, NGOs and academic experts) by disseminating and explaining the main findings of the Technical Assessment Reports and related Summary Reports
- To discuss the impact of the IPCC findings on national climate change response strategies with key policy makers, academic experts, private sector and NGOs
- To translate the information and the IPCC findings into actions, i.e. policy guidelines and programmes for increased capability in making appropriate technological decisions that may contribute to the social and economic development;
- To direct the knowledge gained towards helping national programmes facilitate the application of climate change technology through the promotion of relevent stakeholders understanding of scientific advances in climate change issues;
- In liason with various organisations, institutions, private sector, NGOs and networks create and enhance awareness in climate change through maintenance of information and knowledge exchange as well as documentation services.
- Disseminate the major findings of the IPCC Working Group III reports to government officials, business leaders, private sector, universities and researchers, and representatives of non-governmental organizations;
- Explore the relevance of these findings to climate change mitigation challenges and opportunities in Tanzania; and
- Building the capacity to apply the findings for climate change mitigation activities in the country.

Mr. Chairman
Resource persons from within the country and the region with a remarkable wealth of experience will provide the highest standards of lectures/presentations on climate change issues. We have Prof. Davidson Ogunlade from Energy Development Research Centre (EDRC) based at the University of Cape Town, South Africa, who is also a Co-Chair of the IPCC WGIII, Prof. Francis Yamba from CEEEZ, Zambia and Dr. Willy Makundi from Lawrence Berkeley National Laboratory (LBNL), USA who also is a Tanzanian. I would like to take this opportunity to welcome them to Tanzania and to this workshop in particular.

Mr. Chairman
The ***IPCC WG III Outreach Workshop*** aims also at concentrating efforts in managing information and knowledge sharing on climate change among various Tanzanian experts, IPCC WG III experts, private sectors, policy makers, NGOs and academic experts. This is based on the fact that gaining a greater understanding on how the knowledge created by IPCC WG III could be transmitted, understood and eventually internalised by relevant stakeholders in Tanzania, and to look into possibility of incoporating the findings in relevant researches, policies as well as the national planning processes where possible.

Mr. Chairman
Since 1993 Tanzania has been working on climate change studies through the Division of Environment in the Vice President's Office. These studies will enable Tanzania fulfil part of its obligations under the United Nations Framework Convention on Climate Change (UNFCCC). Therefore this workshop will set the basis for the use of the IPCC WGIII findings to complement with what we have done so far in the area of climate change in the country.

Mr. Chairman
The organisers would like to tha-nk the IPCC for the material they have provided to make this workshop successful. They have provided reference materials, which will be available to all

participants, and some of them will be placed in Universities libraries as well as Tanzania National Library Services for the use by students and other interested individuals. The materials include the following:

- Third Assessment Report (TAR WGIII) and Summary for Policy Makers (SPM)
- The CD-ROMs with 5 WGIII Special Reports
- The UNFCCC and Kyoto Protocol, together with their CD Rom
- Climate Change information Kit
- Beginners guide to climate change
- A Guide to Climate change process (booklet and CD-ROM)

Mr. Chairman, with these few remarks I wish to welcome you all to this **Outreach Workshop on Mitigation of Climate change in Tanzania in relation to Recent Findings of the IPCC WGIII**.

Thank you for the attention

Attachment I(b): OPENING SPEECH

OFFICIAL OPENING SPEECH BY E. K. MUGURUSI, DIRECTOR OF ENVIRONMENT, VICE PRESIDENT'S OFFICE, AT THE WORKSHOP ON MITIGATION OF CLIMATE CHANGE IN TANZANIA, IN RELATION TO THE RECENT FINDINGS OF THE IPCC WGIII,

COURTYARD HOTEL, DAR ES SALAAM
13 - 14 JUNE 2002

Mr. Chairman,
Your Excellencies,
Distinguished Participants,
Ladies and Gentlemen:

It is my pleasure to officiate the opening ceremony of this important workshop on Mitigation of Climate Change in Tanzania, in Relation to the Recent Findings of the IPCC WGIII. My first task must be to welcome you to this workshop. I wish to express my appreciation for the presence of all of you; I thank you for considering this workshop worth your while, and for finding time to attend. Your presence signifies the importance you attach to the challenges of climate change we face**.**

Mr. Chairman
As you know, over the past four years the Intergovernmental Panel on Climate Change (IPCC) Working Group III has completed a series of reports, providing a comprehensive and up-to-date scientific assessment of climate change mitigation. These reports were written by experts from both developed and developing countries and have been published for use by policymakers, academic communities, the private sector and other interested people around the world.

Owing to differences in access to resources, developing countries encounter more difficulties in the acquisition and use of the rich information, for further national analyses and decision making in the area of climate change mitigation. This is why the IPCC provided technical and financial support for outreach activities in developing countries and for countries with economies in transition. And that is why we are here today to acquaint ourselves with some important information from the IPCC and deliberate on its usefulness in addressing climate change in Tanzania.

Mr. Chairman,
Climate change has recently emerged as a major scientific and political issue of global concern. Climate change is a problem with unique characteristics. It is a global long term, and involves complex interactions between climatic, environmental, economic, political, institutional, social and technological processes. These interactions have significant international and intergenerational implications in the context of broader societal goals of equity and sustainable development.

Enhanced concentration of greenhouse gases in the atmosphere is the cause of this concern. Global warming is the most striking indication of the pronounced climate change issue. There is now international consensus among scientists on the significance and the seriousness of the

potential global-scale warming and the accompanying impacts at the global and regional levels. Sufficient evidence is available concerning the potential impact of global warming to warrant the adoption of a precautionary approach, and immediate control measures by those whose actions can make a difference for the better of humankind.

We know from the work of the IPCC that the consequence of global warming could be great instability in climate. Sea-level rise is one of the direct consequences of an increase in global temperatures, on account of thermal expansion of the oceans and run-off from melting glaciers and ice sheets on land. The altered temperature gradients will bring about sea-level rise, and will change the pattern of winds and precipitation distribution.

Because of increased temperature, there would be greater amount of energy in the atmosphere to make extreme climatic events, such as cyclones, storms, droughts, floods and heat waves more likely. Changes in temperature and rainfall distribution could change patterns of wildlife habitat and migrations, severely affecting National Parks, wildlife conservation and tourism.

Accelerated sea-level rise could aggravate problems associated with existing development. Coastal farmlands and aquaculture facilities could be adversely affected or lost. Coastal plains could be flooded and cities inundated. Some islands could disappear forever. Enormous numbers of 'environmental refugees' will require resettlement. Severe public health problems associated with diseases and safety could arise. Coastal structures such as bridges and port facilities will be threatened, and protected only at enormous cost. Wetlands, many of which are under stress the world-over, will be inundated, affecting coastal ecosystems and fisheries. Rising seas will overwhelm natural barriers such as coral reefs, mangrove forests, and sea-grass plains, increasing the magnitude of damage.

In warmer and wetter climate, faster reproduction and greater survival of disease-causing viruses, bacteria and parasites would be enhanced. Hotter and wetter conditions could mean greater multiplication of certain disease-carrying insects such as the 'oncho' fly, which spreads river blindness.

Agriculture in arid areas will be even more difficult. Temperature rise, the lengthening of dry period and expansion of the area of unreliable rains are likely to widen the arid and semi-arid zones, adversely affecting much productive lands. Water supplies will dwindle, while higher temperatures will increase the demand for irrigation. It is easy to imagine the impact of climate change in areas of high present-day vulnerability and where species are close to their biological limits in terms of temperature and moisture.

The major driving force on the climate change debate derives from the work of the Intergovernmental Panel on Climate Change (IPCC), a scientific group set up by the United Nations in 1988 to investigate the science of human-induced climate change and to advise on how to deal with the problem and its impacts. The conclusions of the recently availed third Assessment Report of the Panel show beyond doubt that the Earth's climate is becoming warmer; precipitation patterns are changing; and that sea level is rising.

At current levels of human activity, scientific evidence points to warming trends that are unprecedented in terms of climate changes of the last several thousand years.

The global mean temperature increased by 0.6^0C between 1861 and 2000 and the sea level rose by 10 to 20 cm between 1900 – 2000. Projections show that temperatures will increase

by about 1.4^0C to 5.8^0C between 1990 – 2100 and that sea level will rise between 9 to 88 cm between 1990 and 2100.

While there is room for argument about the exact character of likely impacts, there is no dispute about the basic underlying science. **If the world continues on its present course, the crucial questions are not about whether global warming will happen, but about the magnitude and timing of the impacts it will have.** Uncertainty that persists cuts both ways; while there are factors that might dampen the impacts of global warming, there are others, which could well accentuate those impacts.

Increasingly pervasive human activities particularly the burning of fossil fuels by the industrialised countries are associated with the current and projected warming, because of their release of large amounts of carbon-dioxide, which is one of the key greenhouse gases responsible for global warming.

Mr. Chairman,
This grim scenario of the grave consequences of climate change on the global environment give sufficient reasons to warrant adoption of response strategies. The Kyoto Protocol to the Convention on Climate Change provides a starting point around which sustainable development measures of greenhouse gas emissions strategy can be built. The relevant provisions of the Protocol are firmly rooted in the guiding principles that underpin the UN Framework Convention on Climate Change, in particular the principle that industrialised countries must take the lead, and show demonstrable progress in combating climate change. The Protocol addresses the essential question of how the burden of adjustment should be shared. It requires that developed countries, as a group, meet the nominal reduction target of 5.2% below their 1990 levels by 2010.

We note with appreciation that several industrialised countries have taken a determined public stand with a strong position on fulfilling their commitment and on issues such as carbon sinks. The commitment of these countries now provides them with sufficient platform for asserting a leading role in this global challenge to humanity.

Mr. Chairman,
For Tanzania, adaptation to the impacts of Climate change must be an integral part of national sustainable development goals. For this objective to be achieved, it is very important to build a credible knowledge base for the development of technical and management options in all relevant sectors, and formulate strategic measures that can do the most. Development of data and information is central for verifying the scientific underpinning needed both for deciding whether a particular strategy is likely to be successful or not, and for evaluating its wider environmental consequences. The information and data contained in the IPCC WGIII document are global; it should be down-scaled to fit the Tanzania situation and to define the benchmark for the way forward.

I take this opportunity to thank all the experts who have participated in drafting these important documents. I am confident that this workshop will provide considerable contribution to the understanding of the of the IPCC WGIII Reports

In conclusion, I wish to express the Government's appreciation to the Government of the Netherlands through the IPCC Technical Support Unit for the financial support to facilitate the convening of this important workshop.

Mr. Chairman,
Distinguished participants, ladies and gentlemen, after these few remarks, once again I thank you all for your presence here. I wish you thoughtful and fruitful discussions.

It is now my pleasant duty to declare this workshop officially open.

I thank you for your attention.

Attachment I(c): CLOSING SPEECH

CLOSING REMARKS BY DR. MOHAMED S. MHITA, DIRECTOR GENERAL TANZANIA METEORLOGICAL AGENCY AT THE WORKSHOP ON RECENT FINDINGS OF IPCC WGIII ON CLIMATE CHANGE MITIGATION, JUNE 14, 2002, COURTYARD HOTEL, DAR

The Director of Environment and UNFCCC Focal Point, Mr. Eric Mugurusi,
***Facilitators**: Prof. Ogunlade Davidson, Dr. Willy Makundi and Prof. Francis Yamba,*
The Acting Director CEEST, Mr. Hubert Meena,
Workshop participants,
Invited Guests,
Ladies and Gentlemen,

I take this opportunity to thank CEEST for seizing the opportunity availed by the government of the Netherlands to support IPCC activities in third world countries to organize this workshop.

It is the first time in our country to have such a workshop although IPCC has been in existence for much longer and it always produced reports. It is precisely because of this that the Netherlands government found it imperative to support country workshops to get these reports known to others who are supposed to know about them without whose participation there is little of value in the efforts that went into preparation of the reports.

To most of the participants, it is possible that they had heard of Climate Change only in passing until yesterday when they will have heard what it really is and what are the issues. You have all been drawn from many disciplines and sectors, probably many more have been left out due to limited financial resources. Climate Change issues are relevant to all of humanity in very many different ways, ideally all of us are players in global warming, only the levels differ. Conversely, we are all sufferers from global warming. The fact that you do not contribute much to global warming does not make you any safer from the consequences of worse polluters.

WorldScan model simulations show that if no control measures were implemented, greenhouse gas emissions from developing countries alone would by the year 2030 exceed the maximum global levels consistent with a stable atmospheric concentration of 550ppmv. There is thus an urgent need for these countries to adopt climate sensitive policies.

IPCC WGIII writes, ‘The effectiveness of climate change mitigation can be enhanced when climate policies are integrated with non-climate objectives of national and sectoral policy development and be turned into broad transition strategies to achieve the long-term social and technological changes required by both sustainable development and climate change mitigation.’ Just as climate policies can yield ancillary benefits that improve well-being, non-climate policies may produce climate benefits. It may be possible to significantly reduce greenhouse gas emissions by pursuing climate objectives through general socio-economic policies.
We certainly require both sustainable development and climate change mitigation for our country, which is why we have assembled many disciplines here to get a wide range of cross section in society so that they can know what is involved and how to mitigate against the effects of climate change.

There are many arguments going on about the whole climate change debate. One may argue, for example, that in order to keep damages below an agreed tolerable level (for example, a given number of people at risk) global temperatures would need to be kept below a given amount; and emissions targets could then be developed to achieve that objective.

It is also argued that mitigation alone will not solve the impacts of climate change. Adaptation will be necessary to avoid, or at least reduce, much of the possible damage; and since we need many of the adaptations today regardless of climate change in the future (e.g. increased drought protection of agriculture, improved flood defenses, more efficient use of water, better malaria control), many of the adaptive strategies for climate change can be 'win-win'.

It is thus important to find a blend of mitigation and adaptation to meet the challenge of climate change. Mitigation can buy time for adaptation (for example, delaying impacts until improved technology and management can handle them); and adaptation can raise thresholds of tolerance that need to be avoided by mitigation (for example, by increasing drought tolerance of crops). Considered separately they appear inadequate to meet such a challenge, but combined they would make a powerful response.

From the literature of the IPCC that you have been given, you will find that the science of climate change is based on Modeling and that there are lots of uncertainties. A major finding of the IPCC itself is:

'*Although climatic models still remain uncertain, they represent a synthesis of present knowledge regarding the interaction between a multiplicity of processes as well as providing a degree of internal consistency to the analysis. They are superior to the qualitative arguments that are sometimes presented in answer to the question if the successive changes in the climate are the result of human activity. A comparison with actual observations supports the view that model simulations also can be used to provide an overview of the future changes in climate that may result from different emission scenarios. Models can also be further developed as the state of knowledge about the dynamics of the climate improves.'*

You should take solace from this, it is the best way to inch towards a stable concentration level. WGIII states this clearly in its 2001 report 'Climate change decision-making is essentially a sequential process under general uncertainty. The relevant question is not *what is the best course for the next 100 years* but rather *what is the best course for the near term given the expected long-term climate change and accompanying uncertainties'*.
Tanzania Meteorological Agency is the National Focal Point of the IPCC, with a duty to receive and distribute reports for reading and comments to and from you for collating and onward transmission to the IPCC. It is the comments and contributions received from different countries' experts, which finally make up these documents that you have been issued with.

From here let us forge a partnership on climate change issues of concern to our country. We take this opportunity to plead with you to critically read and comment extensively on all IPCC documents that are directed to you as authoritative voices on the subject matter.

We are very happy to have met you here and hope that from here you will appreciate the importance of making sure your discipline has a well-balanced input into IPCC documents.

Lastly, Ladies and Gentlemen, it is my pleasure to declare this workshop officially closed.

ATTACHMENT II: EVALUATION OF THE WORKSHOP

BACKGROUND

The workshop took place on 13 and 14 June 2002 at Courtyard Hotel in Dar es Salaam. It was attended by 52 participants from various government and non governmental institutions, research institutions and higher learning institutions as well as representation from youth organization on climate change

A press conference was held on 14 June 2002 whereby an official request was made for a meeting with the media at the National Press conference room locally known as MAELEZO. The press conference was attended by Prof. Ogunlade Davidson, Prof. Francis Yamba, Prof. Jamidu Katima, Dr. Willy Makundi and Mr. Hubert E. Meena on the one hand and reporters from various mass medias in the country including televisions, newspapers and radios. The conference was conducted in English and Kiswahili languages whereby Issues raised by Prof. Ogunlade, Prof. Yamba and Dr. Willy Makundi were later translated in Kiswahili by Prof. Katima and Mr. Meena. The press conference was reported by local radio stations and television stations. Some local English newspapers also reported the workshop.

The workshop was successfully conducted and the following is an evaluation by the participants to the workshop.

PARTICIPANTS VIEWS REGARDING THE WORKSHOP

TIME PROVIDED FOR DISCUSSIONS OF THE MAIN TOPICS

(Time was Short/Sufficient/Long)

1 Mitigation aspects in Energy, and Transport:
- 30% said the time provided was short
- 70% said the time for discussion of this issue was sufficient.

2 IPCC WGIII Findings in Mitigation and Sustainable Development:
- 15% said the time provided for this topic was short
- 85% said the time provided was sufficient.

3 National Climate Change Studies relationship with IPCC Findings:
- 100% said the time provided for this topic was sufficient.

4 IPCC findings in relation to Climate change negotiations:
- 15% said the time provided was short
- 15% said the time was long and
- 70% said the time provided for discussions was sufficient.

5 Mitigation aspects in Land Use Land use changes and forestry:
- 100% said the time provided for this topic was sufficient

6 Group discussions:
- 30% said the time provided was short
- 70% said the time provided was sufficient.

7 Future activities for implementation of IPCC WGIII findings in Tanzania:
- 15% said the time was short
- 85% said the time was sufficient.

8 Group presentations to the plenary:
- 100% said the time provided for group discussions was sufficient

9 Plenary discussions of Group Presentations:
- 100% said the time provided was sufficient.

PARTICIPANTS OPPORTUNITY TO CONTRIBUTE

10. Did you get some time to give your views? No/Rarely/Frequently
- 29% said No
- 14% said rarely
- 57% said frequently

11. Did facilitators give you opportunity to give your views? No/Rarely/Frequently
- 14% said No
- 29% said Rarely
- 57% said frequently

12. Were the reference material in form of books, booklets and CDs relevant? No/Yes
- 100% said yes

13. Were the reference material in form of books, booklets and CDs adequate? No/Yes
- 100% said yes

GENERAL OBSERVATIONS BY PARTICIPANTS

1. Which part of the workshop discussions did you like most?
- IPCC Findings on Mitigation and Sustainable Development
- IPCC Findings
- In relation to climate change negotiations
- Land use, land use change and forestry
- CDM part and transportation mitigation
- Presentation and discussions
- Technology transfer discussions

2. Which part of the workshop discussions you did not like most?
- Recap of previous day was too long
- None

3. Did the workshop achieve its objectives?
   - To some extent
   - Yes it achieved its objectives
   - More or less
   - Partially yes

4. If not what was lacking?
   - Short time
   - The media was not strongly represented
   - Nothing
   - No private sector participation and very academic

5. Did you like the way the workshop was organised?
   - Yes
   - Very much impressed the way it was organised
   - Yes but group discussions too short

6. What do you advise for future workshops?
   - Materials to be to participants early to enable them go through
   - Strongly advise that next workshop should have a strong representation of the media to teach the common man
   - Frequency of the meetings should be improved
   - Time management, some people doing some presentations monotonous
   - Use same methodology most familiar
   - Feedback

ATTACHMENT III: WORKSHOP PROGRAMME AND LIST OF RESOURCE PERSONS

Day 1

TIME	ACTIVITIY
08:30 – 09:00 hrs	Registration.
09: 00 – 09:30 hrs	**Introductory Remarks** ***Mr. Hubert Meena*** – CEEST
	Welcoming Remarks By Mr. Erick Mugurusi *Director of Environment & UNFCCC Focal Point*
09: 30 – 10:00 hrs	**Opening Speech** ***Minister/Permanent Secretary***
10:00 – 10:30 hrs	Tea Break
10:30 – 11:00 hrs	**Overview of the IPCC Evolution, Framework, Operation and Mandate** ***Prof. Ogunlade Davidson***: EDRC & IPCC WGIII Co-Chair
11:00 – 11:30 hrs	**Summary of the main findings of the IPCC WGIII on Mitigation aspects**: ***Prof. Ogunlade Davidson*****:** EDRC & IPCC WGIII Co-Chair
11:30 – 12.30hrs	Discussions
12:30 – 13.00 hrs	**Impact of the IPCC WGIII Findings on National Climate Change Response Strategies** ***Dr. Willy Makundi*** – LBL USA
13:00 – 14:00 hrs	Lunch Break
14:00 – 14:30 hrs	**Mitigation aspects in the field of energy, transport and settlements as per the findings of the IPCC WGIII** ***Prof. Francis Yamba***- CEEEZ Zambia
14:30 – 15.00 hrs	Discussions
	Mitigation aspects in the fields of Land-Use, land-use change and forestry as per findings of the IPCC WGIII ***Dr. Willy Makundi***.- LBL USA
15:00 – 15.30 hrs	*Discussions*
15:30 – 16.00 hrs	**Technology transfer and sustainable development issues**: ***Prof. Ogunlade Davidson*** EDRC & IPCC WGIII Co. Chair
16:00 – 16:30 hrs	*Discussions*
16:30 – 16: 45 hrs	Tea Break
16:45 – 17:15hrs	**An Overview of Climate Change Studies, On-going Studies and Mitigation Aspects for Tanzania** ***Mr. Hubert Meena & Stephen Mwakifwamba*** – CEEST
17.15 – 17:45hrs	Discussions
17:45hrs	End of day One

Day 2

TIME	ACTIVITIY
08:30 – 09:00 hrs	Registration.
09: 00 – 09:15 hrs	Recap of the first day ***Mr. D. Kashasha - TMA***
09:15 – 09:45 hrs	**Tanzania position on current climate change negotiations in relation to mitigation aspects**; ***Mr. R. S. Muyungi-*** Assistant Director, VPO
09:45 - 10:15 hrs	Discussions
10.15 – 10:45 hrs	Tea Break
10:45 – 13.00 hrs	Breakout Sessions: Group Discussions
13:00 – 14:00hrs	Lunch Break
14:00 – 16:00 hrs	Group Presentations
14: 00 – 14:30 hrs	Group one
14:30 – 15.00 hrs	Group two
15:00 – 15:30hrs	Group three
15:30 – 16:00 hrs	Discussions
16:00 – 16:30 hrs	Tea Break
16.30 – 17:00 hrs	Workshop Summary and Resolutions
17:00 – 17:30 hrs	Closing Remarks *By Dr. Mohamed Mhita* *Director General TMA, WMO Permanent Representative & IPCC Focal Point*
17:30	*End of Workshop*
19.30 hrs	*Reception*

List of Resource Persons for the IPCC WGIII Outreach Activities in Tanzania

Mr. Richard S. Muyungi[1] – local and Country negotiator Assistant Director, Division of Environment, Vice President's Office	Hubert E. Meena - Local Acting Director, Centre for Energy, Environment, Science and Technology (CEEST)
Dr. Willy Makundi – Regional or African LBL – USA	Mr. Stephen M. Mwakifwamba - Local Research & Consultancy Officer CEEST
Prof. Ogunlade Davidson – Regional or African IPCC, WGIII Co-Chair	Prof. Francis Yamba– Regional or African Zambia
Prof. Jamidu Katima – Local Discussant Tanzania (IPCC WG II, Lead Author)	Dr. Mohamed Mhita – Local Discussant Director General, Tanzania Meteorological Agency, and Permanent Representative of WMO
Mr. D. Kashasha – Local Director of Applied Meteorology and Research Tanzania Meteorological Agency	

ATTACHMENT IV: LIST OF PARTICIPANTS FOR THE IPCC WGIII OUTREACH ACTIVITIES IN TANZANIA

1.	Mr. E.K. Mugurusi Director of Environment, Vice President's Office Box 5380, DAR ES SALAAM Tel: 2118416 vpodoe@intafrica.com	28	Mberik Rashid Said Director of Environment Ministry of Agriculture Box 3656, ZANZIBAR Tel: 0747-424578 Fax: 024-2236790
2.	Mr. T.M. Hyera Principal Meteorologist Tanzania Meteorological Agency P.O.Box 3056, DAR ES SALAAM Tel : 2121351 ; Fax : 2110231 E-Mail : htmagnus@yahoo.co.uk	29	Mr. Francis J. Mkwawa Principal Scientific Officer Tanzania Commission for Science & Technology Box 4302, DAR ES SALAAM Tel : 2134471/0744-303832 mkwawafrancis@yahoo.com
3.	Prof. Ronutus Ishengoma Dean , Sokoine University of Agriculture Box 3009, Morogoro Tel: 2604648, Fax: 2604648 forestry@suanetac.tz	30	Prof. James Ngana Associate Professor Institute of Resouce Assessment Box 35097 , Dar es Salaam Tel: 0744-432108, Fax: 2410393 jngana@ira.udsm.ac.tz
4.	Prof. Jamidu Katima Department of Chemical and Processing University of Dar es Salaam Box 35131, DAR ES SALAAM Tel : 2410754, Fax : 2410379 jkatima@cpe.udsm.ac.tz	31	Mr. Hubert E. Meena Acting Director, CEEST P.O. Box 5511, DAR ES SALAAM Tel: 255 22 2667569, Fax: 255 22 2666079 E-mail: ceest@intafrica.com
5.	Dr. Willy R. Makundi Staff Scientist Lawrence Berkeley National Laboratory 1Cyclotron Road Berkeley California 94720 Tel: 1 510 486 6852 Fax: 1 510 486 6996 E-mail: wrmakundi@lbl.gov	32	Prof. Ogunlade Davidson Director, EDRC –University of Cape Town, Cape Town Tel: 27 021 650 2825 Fax: 27 021 650 2830 E-mail: ogunlade@energetic.uct.ac.za
6.	Prof. Francis Yamba, Director, Centre for Energy Environment and Engineering, (CEEEZ) Zambia Box E721 Lusaka Zambia Tel : 260 1 240267 Fax : 260 1 240267 E-mail : ceeez@coppernet.zm	33	Ms. Jasminee Persaud Visiting Researcher Centre for Energy, Environment, Science and Technology P.O. Box 5511, Dar es Salaam Tel: 255 22 2667569 Fax: 255 22 2666079 E-mail: jasminee_p@yahoo.com

7.	Prof. Cleophas L.C. Migiro Director, Clean Production Centre of Tanzania Box 2325, DAR ES SALAAM Tel: 602339-40, Fax: 602339 cpct@udsm.ac.tz	34	Mr. R.S. Muyungi. Assistant Director Vice President's Office Box 5380, DAR ES SALAAM Tel: 2118416, Fax: 2113983 E-mail : vpodoe@intafrica.com
8.	Mr. Prosper Victus Assistant commissioner Ministry of Energy and Minerals Box 2000, DAR ES SALAAM Tel: 2119158 pvitus@yahoo.com	35	Dr. V.K. Rugambwa Principal Livestock Research Officer Box 2066, Dar es Salaam Tel: 2865318, Fax: 2865312 vrugambwa@hotmail.com
9.	Mr. Deus A. Kashasha Director, Research & Applied Meteorology Tanzania Meteorological Agency P.O. Box 3056, DAR ES SALAAM Tel: 225 22 2134471 Fax: 225 22 2134471 E-mail: dkashasha@yahoo.co.uk	36	Dr. Rose R. Kingamkono Director Research Coord. & Promotion Commission for Science and Technology Box 4302, Dar es Salaam Tel: 255 22 2700752 Fax: 255 22 275313 rkingamkono@costech.or.tz
10	Mr. Rumisho Maro Forestry and Beekeeping Ministry of Natural Resource and Tourism Box 426, DAR ES SALAAM Tel: 22-2861657, Fax: 22-2865165	37	Mr. Joseph Kushoka Senior Meteorologist Tanzania Meteorological Agency Box 3056, DAR ES SALAAM Tel: 2121351 met@meteo-tz.org
11	Mr. Stephen M. Mwakifwamba Research & Consultancy Officer. CEEST Box 5511, DAR ES SALAAM Tel : 255 22 2667569 Fax : 255 22 2666079 E-Mail : ceest@intafrica.com	38	Mr. Oberth. U. Mwaipopo Research Fellow, Institute of Marine Science Box 668 , ZANZIBAR Tel: 024-2230741, Fax: 024 22 33050 E-mail: mwaipopo@zims.udsm.ac.tz
12	Dr. Pantaleo Munishi Lecturer, Sokoine University of Agriculture (SUA) Box 3010, Morogoro Tel: 023-2604648 office/0744-591849 Fax 023-2604648 munishi@suanet.ac.tz pmunishi2001@yahoo.com	39	Mr. Mutesigwa Maingu Consultant, CEEST Box 5511, DAR ES SALAAM Tel : 255 22 2667569 Mobile : 0744-568636 Fax : 255 22 2666079 E-Mail : ceest@intafrica.com
13	Mr. Ruzika N. Muheto Director (Env. Planning & Research) National Environmental Management Council (NEMC) Box 63154m Dar es Salaam Tel : 0744-692282 Muheto@necmtz.org	40	Mr. Christian M.A. Musyani Senior System Control Engineer TANESCO Box 9024, DAR ES SALAAM Tel: 2450752, Fax: 2451003 gridtan@intafrica.com

14	Mr. Abiud Lucas Kaswamila Lecturer, Mweka Wildlife College Box 3031, Moshi Tel: 0744 693448 E-mail: kaswamila@hotmail.com	41	Mr. Lucas Mgalula, Tanzania Industrial Research and Development Box 23235, DAR ES SALAAM Tel : 2666034 tirdo@intafrica.com
15	Mr. Mzumbe Musa Manager, Fredka Box 8080, Dar es Salaam Tel : 492260 Musa_mzumbe@yahoo.com	42	Mr. Silvan E. Mng'anya Executive Secretary, AGENDA Box 77266, Dar es Salaam Tel : 255 22 2450213 or 255 741-226569 agenda@raha.com
16	Mr. Desiderus E. Mbekenga Assistant Director Env.Protection and Management Serv. Box 7775, Dar es Salaam Tel: 0744-268684 epms@raha.com		Mr. Maynard Lugenja Consultant, Livestock and Rangeland Experts Box 550, DAR ES SALAAM 0741-321953
17	Mr. S.J. Ntomola Director of Investment Facilitation Tanzania Investment Centre Box 938, Dar es Salaam Tel: 2116328, Fax: 2118253 ntomola@tic.co.tz	43	Mr. C. Omujuni Executive Engineer Ministry of Energy and Minerals Box 2000, DAR ES SALAAM Tel: 0744-782218, Fax: 2120799 Omujuni-mem@raha.com
18	Mr. Timothy Ranja Researcher Economic and Social Research Foundation Box 31226, Dar es Salaam, Tel: 255 22 2760260, Fax: 255 22 2760062 E-mail: ranjaty@esrf.or.tz	44	Mr. Theo M Macha Social Scientist, LEAT Box 2605, Dar es Salaam Tel: 0744-260500 Fax: 2780859 leat@twiga.com machetheo@hotmail.com
19	Ms. Christine Noe MA Geography Student, University of Dar es Salaam Box 35049 Tel: 0741-625150 tinanoe@yahoo.com	45	Mr. Nathan Mnyawami, MA Economics Student University of Dar es Salaam Box 35041 Tel: 0744-289298 mnyawami@hotmail.com
20	Mr. Rehema Sigala Student, UDSM Box 5704, Dar es Salaam Tel: 0744-307831 doraj@yahoo.com	46	Mr. Humphrey Polepole Chairman, World Youth Organisation on Climate Change Box 5559, DAR ES SALAAM Tel : 383913 polepole@hotmail.com
21	Mr. Balinagwe Mwambungu Chairman – JET Box 15674 DAR ES SALAAM Tel:2180005/2182240 jet@africaonline.co.tz	47	Mr. Zephania Ubwani Freelance Environmental and Science Journalist Box 70056 DAR ES SALAAM Tel: 0741-771669 ubwanizg@hotmail.com

22	Mr. Salim Kikeke Journalist Box 4379, Dar es Salaam Tel : 2775914-6, Fax : 2775915 skikeke@hotmail.com	48	Mr. Dickson Makobwe Senior Studio Operator, TVT Box 31519, Dar es Salaam Tel : 2700464, Fax : 2772603
23	Mr. Renatusi Mutabuzi Cameraman, ITV Dar es Salaam Tel: 0741-426242	49	Mr. Shaibu Libenanga Cameraman, ITV Box 4374, Dar es Salaam Tel: 275914-6, Fax: 2775915
24	Mr. Rachel Mkundai Reporter, The Guardian Box 310442, Dar es Salaam Tel : 0741-260844 Fax : 2700745 ramkundai@hotmail.com	50	Mr. Joseph Mwendapole Journalist, Nipashe Box 31042, Dar es Salaam Tel : 0741-293791, Fax : 700735 Jmwendapole@yahoo.com
25	Mr. Hans A.M Reporter , Business Times Box 36008, Dar es Salaam Tel: 606705 hansmbwaga@yahoo.com	51	Mr. Khalifan Said Photojournalist, The guardian Box 31042, Dar es Salaam Tel : 0744-686464
26	Mr. Ahmed Abdullah Journalist, East Africa Box 9451, Dar es Salaam	52	Ms. Easther Sangui Reporter- Radio One Box 4374, Dar es Salaam Tel: 0744-278131
27	Mr. Deus Bonaventura Photo journalist, Mwananchi Box 19754, Dar es Salaam Tel: 0741-242134	53	

Appendix 1.7 Outreach Report China

IPCC Outreach Meeting on "Climate Change Mitigation: Challenges and Opportunities for Development"

Beijing, China, September 11-13,2002

Summary Report

The IPCC Outreach Meeting on "Climate Change Mitigation: Challenges and Opportunities for Development", organized by Research Center for Sustainable Development, Chinese Academy of Social Sciences (CASS) and Energy Research Institute, State Development and Planning Commission (SDPC), was held from September 11 to 13, 2002 in Beijing Zhengxie Conference Center, China. About 150 particiapnts attended this meeting, including experts from Europe, North America, South America, Africa, South and East Asia, representatives of Foreign Embassies, International Organizations and Multinational Corporations, government officials and researchers from Guangdong, Shanghai, Tianjin, Hubei, Shanxi, Zhejiang and Beijing, and central Ministries (See Attachment I). Expert introduced main findings of IPCC Working Group III Report, discussed equity concerns of climate change, impacts of climate change on Chinese economy, and challenges, opportunities and countermeasures of China in climate change mitigation.

The Opening Session was presided by Prof. RU Xin, Deputy Chairman of Academic Committee of CASS. Bert Metz (IPCC WGIII Co-chair), CHEN Jiagui (Vice President of CASS), QIN Dahe (Administrator, China Meteorological), GAO Feng (Head of the Chinese Delegation to UNFCCC, Ministry of Foreign Affairs), MA Aimin (Deputy Division Director, Office to National Coordination Committee on Climate Change Policy, SDPC) gave welcome remarks. The meeting consisited of four sessions of Experts Presentations, one session of Panel Disscussion, one session of Public Dissemination and one Session of Responses (See Attachment II). The contents of presentations mainly included Climate Change and Sustainable Development, Emissions and Stablization Secarios, Opportunities and Barriers, Technology Transfer. From the presentations and questions we can see that the participants were highly interested in the following topics: Climate Change and Its Impacts, Equity Concerns of Greenhouse Gas Emissions, Economic Impacts of Climate Change Mitigation, Technology Options and Potential for Mitigating Climate Change, How to Realize the Technology Transfer to Developing Countries, How to Resolve the Dilemma of International Cooperation, China's Energy and Climate Change Policies.

In total, there are 20 presentations made at this meeting (available). All these presentations and other relevent information can be read and downloaded from the homepages of Institute of World Economics and Politics, CASS (www.iwep.org.cn) and China Climate Change Info-Net (www.ccchina.gov.cn/indexl.htm). In addition, news in brief and summary report in Chinese were disseminated in Journal of Worlf Economics and International Politics, Journal of Sustainable Development Research, Working Papers and Booklet of Research Center for Sustainable Development, CASS, and Proceeding of climate Change Policy Assessment of Energy Research Institute, Sdpc which were highly welcomed.

From the responses of participants we can say that this IPCC Outreach Meeting was rather successful. The CASS Bulletin, World Communication on Social Sciences Research (published by Foreign Affairs Burean, CASS), Journal of Sustainable Development Research, Journal of World Economics and International Politics (forthcoming) reported the meeting. In addition, we exhibited some photos of the meeting on the show window of CASS.

Chinese government such as State Development and Planning Commission, Chinese Meteorological Administration, Ministry of Science and Technology, Ministry of Foreign Affair, State Environmental Preotection Adminstration, Ministry of Foreign Trade and Economic Cooperation paid more attention to this IPCC Outreach Meeting and gave strong support for the success. After the IPCC Outreach Meeting, the State Development and Planning Commission and relevent divisions have held several training classes for local leaders. China Meteorological Administration planned to publish a series of books to improve the public understanding on climate change. The experts of Research Center for Sustainable Development, CASS finished one of them titled “Economic Analisis on Climate Change Mitigation”.

One suggestion: Aithough some researchers outsideBeijing attended the meeting, but they were lack of climate change knowledge, which revealed the situation of poor public understanding on climate change. Therefore, more IPCC Outreach activities are necessary on China, especially in other cities.

Written by Zhuang Guiyang
Associate Research Fellow,
Reseach Crenter for Sustainable Development
Chinese Academy of Social Sciences

IPCC WGIII Outreach In China: Executive Report

1. Background

With financial support from IPCC WGIII TSU, a outreach program was taken in China, organized by Energy Research Institute(ERI) and Chinese Academy for Social Science (CASS). The objectives of this program include:

- Disseminate the major findings of the IPCC WGIII report to government official, business leaders, university teachers and researchers, and representatives of non-governmental organizations, and the general public;
- Explore the relevance of these findings to climate change mitigation challenges and opportunities in China; and
- Help building the capacity to apply the findings for climate change mitigation activities in China

The program includes three activities:

Activity 1: Recent published IPCC Third Assessment Report(TAR) is a valuable document to know the activities for climate change. However it is few people could read through the report especially in China. In order to involve more people to understand climate change, a summarized report will be made based on the IPCC TAR with focus on IPCC WGIII report. The report will give a whole picture for climate change but emphasis the action response to climate change. Major audience includes government official relative to energy and environment, organizations who concern about climate change and public. The report will be in Chinese. Some conclusions from IPCC WGI and WGII will also be included to provide some background information for climate change mitigation. The report could be a useful reference document for target audiences listed in the objectives. The report will be distributed widely to the target groups for awareness raising and as a source of information on challenges and opportunities for climate change mitigation.

Activity 2: Workshops focus on IPCC WGIII findings. Two workshops are proposed by inviting expert from IPCC WGIII to audience. The two workshops will have different target. One will focus on the information exchange among researchers to share different opinion, the other one will have the objective of outreach to invite audience like policy makers, stakeholders and concerning organizations to join.

Activity 3: Identify opportunities to integrate goals of sustainable development and climate change mitigation in China as an extension of the outreach program in a longer-term. Based on the finding from IPCC WGIII, a discussion on possible direction for China to respond climate change will be addressed. A recommendation will be made to the respective target groups. Longer-term program for outreach is also proposed.

2. Workshop

The IPCC Outreach Meeting on “Climate Change Mitigation: Challenges and Opportunities for Development”, organized by Research Center for Sustainable Development, Chinese Academy of Social Sciences (CASS) and Energy Research Institute, State Development and Planning Commission (SDPC), was held from September 11 to 13, 2002 in Beijing Zhengxie Conference Center, China. About 150 particiapnts attended this meeting,

including experts from Europe, North America, South America, Africa, South and East Asia, representatives of Foreign Embassies, International Organizations and Multinational Corporations, government officials and researchers from Guangdong, Shanghai, Tianjin, Hubei, Shanxi, Zhejiang and Beijing, and central Ministries (See Attachments I). Expert introduced main findings of IPCC Working Group III Report, discussed equity concerns of climate change, impacts of climate change on Chinese economy, and challenges, opportunities and countermeasures of China in climate change mitigation.

The Opening Session was presided by Prof. RU Xin, Deputy Chairman of Academic Committee of CASS. Bert Metz (IPCC WGIII Co-chair), CHEN Jiagui (Vice President of CASS), QIN Dahe (Administrator, China Meteorological), GAO Feng (Head)

3. Report on IPCC WGIII TAR

A report in Chinese is prepared to summarize major findings from IPCC WGII TAR and sustainable development strategy in China contributing GHG abatement(Activity 1 and activity 3). The summary of IPCC WGIII Tar is given based on the content structure of underline report of TAR, trying to reflect the key content of TAR. The report includes following contents:

Social Economy Assessment on Climate Change: Findings from IPCC WGII TAR

1) Climate Change: Challenge faced by the World
   - Concept of Climate Change
   - UNFCCC and Kyoto Protocol
   - National Trategy
   - International Studies and IPCC Activities
   - Science of Climate Change: Findings from IPCC WGI TAR
   - Impact Assessment of Climate Change: Findings from IPCC WGII TAR
2) Mitigation Policy Assessment: IPCC WGIII TAR
   a. Chapter 1: Setting the Stage: Climate Change and Sustainable Development
   b. Chapter 2. Greenhouse Gas Emission Mitigation Scenarios and Implications
   c. Chapter 3: Technological and Economic Potential of Greenhouse Gas Emissions Reduction
   d. Chapter 4: Technical and Economic Potential of Options to Enhance, Maintain and Manage Biological Carbon Reservoirs and Reo-engineering
   e. Chapter 5. Barriers, Opportunities, and Market Potential of Technologies and Practices
   f. Chapter 6. Policies, Measures, and Instruments
   g. Chapter 7: Costing Methodologies
   h. Chapter 8: Global, Regional, and National Costs and Co-benefits of Mitigation
   i. Chapter 9. Sector Costs and Co-Benefits of Mitigation
   j. Chapter 10: Decision-making Frameworks
3) Policy Assessment for China: Climate Change and Sustainable Energy Development
   a. Sustainable Development Goal in China
   b. Energy Development and Contribution to GHG Mitigation
   c. Emission Scenario for China
   d. Technology Assessment for China
   e. Sustainable Energy Development Strategy in China

More than 10 researchers from ERI and CASS were involved to prepare the report. This report will be published and distribute to concerning people in China.

4. Suggestions for improvements for future outreach activities

The outreach activities do contribute the understanding in wide range audience. By reviewing the process of outreach activities in China, following suggestion is given for future activities:

- The activities designed in China is suitable for outreach of IPCC WGIII TAR. If possible,
- The report should be distributed to audience before the workshop in order to make more focused discussion in workshop.
- Participant of the workshop should involve more audience source such as concerning people from company, enterprises and public. More focus should be given to local people which know much less about climate change and IPCC report.
- The outreach activities should start at earlier time, even during the development process of IPCC AR4 through media or workshop.

5. Outcome and impacts

6. Link with on going and future outreach plan

This is the first focused outreach activities in China for IPCC WGIII TAR. During the development of IPCC TAR, some Chinese experts joined the development process and made discussion for that in China. China State Metrological Bereau which is chairing IPCC activities in China organized experts to translate SPM and technical summary into Chinese. However the concerning group for IPCC activities in China is still quite small. This IPCC WGIII outreach project is quite essential for further understanding on finding from IPCC TAR. Much more people was invited to join the workshop, and most important this is the really beginning to start wide distribution of IPCC knowledge. More well organized outreach activities for IPCC TAR should be taken to involve various stakeholders to join the discussion for climate change.

For the future possible IPCC TAR outreach activities, this project provided very good basis to understand how to make outreach activities much more useful. Experience from this project should be summarized and comments from participants should be collected in following activities.

Appendix 1. List of participants and of course of the institutions they work.
Appendix 2. Workshop agenda

Attachment I: IPCC Outreach Meeting on 'Climate Change Mitigation: Challenges and Opportunities for Development', Beijing, China, September 11-13, 2002, List of Participants

1. **Terry Barker**, Department of Applied Economics, University of Cambridge, Britain.
2. **Ronaldo Seroa da Motta,** Research Institute for Applied Economics, Brazil.
3. **Tsuneyuki Morita,** Director, Social & Environmental System Division, National Institute for Environmental Studies, Japan.
4. **Ogunlade Davidson,** Energy and Development Research Center, University of Cape Town, South Africa.
5. **Eric Haites,** Head, Technical Support Unit, IPCC Working Group III, Canada.
6. **Annick Osthoff,** IPCC WGIII TSU, RIVM, the Netherlands.
7. **David Warrilow,** Head of Science Global Atmosphere Division, Britain.
8. **Adil Najam,** Associate Professor, Boston University (from Pakistan).
9. **Felix Christian Matthes,** Institute for Applied ecology, Germany.
10. **Bert Metz,** IPCC WGIII TSU, RIVM, the Netherlands.
11. **Dalia Maimon,** Professor, Institute of Economics, Rio University, Brazil.
12. **CHEN Hongpo,** PhD, Huazhong University of Science and Technology.
13. **PAN Wei,** chief of Editor, Sustainable Research.
14. **PENG Zhimin,** Professor, Hubei Academy of Social Sciences
15. **LUI PINGQING,** Assistant, Hubei Academy of Social Sciences
16. **XU Changchun,** Master, Fudan University
17. **WANG Jianmin,** Senior Research Fellow, Institute of Nanjing Environmental Science
18. **XIA Wannian,** Professor, Nanjing Land Policy Institute.
19. **ZOU Jiaxiang,** Senior Engineer, Changjiang Water Resource Protection Bureau.
20. **WANG Li,** Staff, Environmental Protection Fund Ltd. Of Shanxi Province.
21. **CHENG Shaohai,** Senior Research Fellow, Tianjin Asian-pacific Research Center.
22. **SHI Jianrong,** Director, Zhejiang Environmental Protection Bureau.
23. **QIN Dahe,**[24] Administrator, China Meteorological Administration; and Co-Chair, IPCC Working I Fourth Assessment Report.
24. **DING Yihui**, Professor, IPCC WGI Co-Chair, China Meteorological Administration.
25. **WANG Bangzhong,** Director, China Meteorological Administration.
26. **WANG Xuechen,** Associate Professor, China Meteorological Administration.
27. **XU Ying,** PhD, Climate Center, China Meteorological Administration.
28. **ZHOU Dadi,** Director, Energy Research Institute, State Developing and Planning Commission.
29. **ZHOU Fengqi,** Senior Research Fellow, Energy Research Institute, State Developing and Planning Commission.
30. **LI Junfeng,** Professor and Deputy Director, Energy Research Institute, State Developing and Planning Commission.
31. **JIANG Kejun,** Associate Research Fellow, Energy Research Institute, State Developing and Planning Commission.
32. **XU Huaqing,** Associate Research Fellow, Energy Research Institute, State Developing and Planning Commission.
33. **ZHU Xingshan,** Associate Research Fellow, Energy Research Institute, State Developing and Planning Commission.
34. **CUI Cheng,** Associate Research Fellow, Energy Research Institute, State Developing and Planning Commission.

[24] Be absent, Prof. DING Yihui from China Meteorological Administration delivered a speech on behalf of him.

35. **LIU Qiang,** Assistant Research Fellow, Energy Research Institute, State Developing and Planning Commission.
36. **CHEN Feiran,** Program Officer, Ministry of Foreign Trade & Economic Cooperation.
37. **GAO Feng,** Chief negotiator of Chinese delegation to UNFCCC, Deputy Director General, Dept. of Conventions and Laws, Ministry of Foreign Affairs.
38. **YI Xianliang,** Division Director, Ministry of Foreign Affairs.
39. **LU Xuedu,** Director, Department of Rural and Social Development, Ministry of Science and Technology.
40. **MA Aimin,** Deputy Division Director, State Development and Planning Commission.
41. **LIU Hongpeng,** Director, State Economic and Trade Commission.
42. **WANG Weili,** Assistant Director, The China International Center for Economic & Technical Exchange, Ministry of Foreign Trade & Economic Cooperation.
43. **YUE Qiusheng,** Deputy Director General, State Environmental Protection Bureau.
44. **ZHANG Kunmin,** Secretary General, China Council for International Cooperation on Environment and Development, Senior Advisor of State Environmental Protection Bureau.
45. **CAI Lijie,** Senior Program Officer, State Environmental Protection Bureau.
46. **TIAN Chunxiu,** Associate Professor, State Environmental Protection Bureau.
47. **SHEN Xiaoyue,** Associate Professor, State Environmental Protection Bureau.
48. **WEI Taoyuan,** Statistician, State Statistical Bureau.
49. **ZHAO Yuchuan,** Senior Statistician, State Statistical Bureau.
50. **HUANG Jing,** Deputy Director, The Administrative Center for China's Agenda 21.
51. **WANG Wenyuan,** The Administrative Center for China's Agenda 21.
52. **ZHANG Songmei,** PhD, The Administrative Center for China's Agenda 21.
53. **WANG Fengchun,** Division Head, Legislative Department of Environment & Resource Protection Committee, National People's Congress of P.R.C.
54. **CHEN Banqing,** Deputy Director General, Bureau of Sciences & Technology for Resource & Environment, Chinese Academy of Sciences.
55. **LU Yonglong,** Deputy Director General, Bureau of Sciences & Technology for Resource & Environment, Chinese Academy of Sciences.
56. **CHEN Wenying,** Associate Professor, Tsinghua University.
57. **LU Chuanyi,** Associate Professor, Tsinghua University.
58. **LIU Bin,** Program Coordinator, Institute of Global Climate Change, Tsinghua University.
59. **ZHANG Tianzhu,** Professor, Tsinghua University.
60. **CHEN Yunhui,** Associate Professor, Beijing Petrol-chemical College.
61. **CUI Dapeng,** PhD, Beijing Society of Science and Technology.
62. **DAI Dongchang,** Chief Engineer, Transportation Planning and Research Institution.
63. **HUANG Shengchu,** Vice President, China Coal Information Institute.
64. **DING Pin**, Reporter, China Environment News.
65. **HUANG Yong,** Reporter, China Environment News.
66. **GUO Caili,** Associate Editor, China Meteorological Press.
67. **HA Xiaorui,** Editor and Journalist, Economic Life Column, China Economy Times.
68. **ZHANG Jianjing,** Editor for World Scan Column, China Economy Times.
69. **WANG Jinsong,** PhD, SCIENTIFIC CHINESE.
70. **HAO Zehua,** Editor and Journalist, SCIENTIFIC CHINESE.
71. **LI Wenyuan,** Reporter, Economic Daily.
72. **GU Li,** Associate Editor, China Environment Press.
73. **LI Xiaoli,** Chief of the Secretariat, Intertrade Forum.
74. **ZOU Jing,** Vice Executive Chief Editor, World Environment

75. **MA Haitao,** Reporter, CASS Bulletin.
76. **ZHANG Dawei,** Reporter, CASS Bulletin.
77. **HU Zhaoguang,** Chief Economist Professor, SP Power Economic Research Center.
78. **XIE Shaoxiong,** Advisor, State Power Corporation of China.
79. **YANG Xiaodong,** Senior Engineer, Beijing Central Engineering and Research Incorporation of Iron and Steel Industry.
80. **ZOU Ji,** Professor, People's University of China.
81. **GUO Yin,** Assistant Research Fellow, Institute of World Economics and Politics, Liaoning Academy of Social Sciences.
82. **LI Xiaolin,** Vice President, The Chinese People's Association for Friendship with Foreign Countries.
83. **QU Jiansheng,** The Scientific Information Center for Resources and Environment, Chinese Academy of Sciences.
84. **GE Yuhang,** Senior Project Officer, The Chinese Academy of Forestry.
85. **LU Wenming, Professor,** The Chinese Academy of Forestry.
86. **ZHANG Qun,** Professor, Beijing University of Science & Technology.
87. **ZHOU Hongchun,** Professor, Development Research Center, the State Council of P.R.C.
88. **YANG Qian,** Representative, Fichtner Gmbh Co.& KG Beijing Coffice.
89. **YANG Fuqiang,** Chief Representative, the Energy Foundadtion Beijing Office, China Sustainable Energy Program, the David and Lucile Packard Foundation in Partnership with the Energy Foundation.
90. **XIANG Mei,** the Energy Foundadtion Beijing Office, China Sustainable Energy Program, the David and Lucile Packard Foundation in Partnership with the Energy Foundation.
91. **SI Zhizhong,** Program Officer for Sino-Canada Climate Change Cooperation, Dept. of Environment, Canada.
92. **Frank Haugwitz,** Expert of Renewable Energy Technologies, Deutsche Gesellschaft Fur Technische Zusammenaibeit Gmbh.
93. **Kate Pongonis,** Embassy of the USA.
94. **Kirsten Leitner,** Director, Embassy of the USA.
95. **Kathryn Pongonis,** Second Secretary, Embassy of the USA.
96. **Jock Whittlesey,** Environment, Science & Technology, Embassy of the USA.
97. **MING Lei, Assistant,** Embassy of the USA.
98. **Kyosuke INADA,** JBIC.
99. **Leiv Landro,** Embassy of the Norway.
100. **Grace Ren,** DuPont.
101. **HOU Xin-an,** Cluster Manager, UNDP Beijing Office.
102. **WANG Wanxing,** Program Adviser, UNDP Beijing Office.
103. **HE Ping,** Program Officer, UNDP Beijing Office.
104. **Cecilia Leung,** Embassy of Canada.
105. **Melissa Sach,** Second Secretary, Australian Embassy.
106. **Pekka Kaihilahti,** Second Secretary, Embassy of Finland.
107. **Peter ZHANG,** PhD, BP China.
108. **ZHANG Jianning,** Manager, BP China.
109. **CHEN Xingrong,** Division Manager, BP China.
110. **Steven Zeng,** Project Manager, AEA Technology plc Beijing Office.
111. **LI Rusong,** Science Manager, Cultural and Education Section, British Embassy.
112. **Siobhan Peters,** First Secretary, British Embassy Beijing.
113. **PENG Yan,** Project Officer, British Embassy Beijing.

114. **Kurt W. Tong,** Counselor, Embassy of the USA.
115. **James Graham,** GHG Team Expert, Sino-Italian Cooperation Program for Environmental Protection.
116. **Sucheng Harris-Simpson,** United Technologies Corporation (UTC).
117. **GAN Lin,** Climate and Energy Program Officer, WWF China Program Office.
118. **RU Xin,** Senior Research Fellow, Deputy Chairman, Academic Committee of the CASS.
119. **CHEN Jiagui,** Senior Research Fellow, Vice President of CASS.
120. **YU Yongding,** Director, Institute of World Economics and Politics, CASS.
121. **CHEN Zhensheng,** Deputy Director, Foreign Affairs Bureau, CASS.
122. **ZHANG Youyun,** Division Director, Foreign Affairs Bureau, CASS.
123. **XU Gengsheng,** Senior Research Fellow, Global Change and Economic Development Program, CASS.
124. **PAN Jiahua,** Senior Research Fellow, Global Change and Economic Development Program, CASS.
125. **CHEN Ying,** Associate Research Fellow, Global Change and Economic Development Program, CASS.
126. **ZHUANG Guiyang,** Associate Research Fellow, Global Change and Economic Development Program, CASS.
127. **ZHANG Wei**, Assistant Research Fellow, Global Change and Economic Development Program, CASS.
128. **HE Hua,** Secretary, Global Change and Economic Development Program, CASS.
129. **TAN Xiuying,** Associate Editor, Institute of World Economics and Politics, CASS.
130. **ZHANG Baozhen,** Editor, Institute of World Economics and Politics, CASS.
131. **SHI Xinxiang,** Division Director, Institute of World Economics and Politics, CASS.
132. **CAO Chengfei,** Institute of World Economics and Politics, CASS.
133. **YANG Qi,** Institute of World Economics and Politics, CASS.
134. **CHI Liping,** Institute of World Economics and Politics, CASS.
135. **TANG Di,** Assistant Research Fellow, Institute of World Economics and Politics, CASS.
136. **YANG Mingshan,** Institute of World Economics and Politics, CASS.
137. **REN Kejun,** Division Director, Institute of World Economics and Politics, CASS.
138. **SHI Zhisheng,** Institute of World Economics and Politics, CASS.
139. **FU Fengmin,** Institute of World Economics and Politics, CASS.
140. **WEI Wei,** PhD, Institute of World Economics and Politics, CASS.
141. **ZHENG Yuxin,** Deputy Director, Institute of Quantitative and Technical Economics, CASS.
142. **ZHENG Yisheng,** Senior Research Fellow, Institute of Quantitative and Technical Economics, CASS.
143. **YAO Yufang,** Senior Research Fellow, Institute of Quantitative and Technical Economics, CASS.
144. **Jiang Jinhe,** Assistant Research Fellow, Deputy Director, Institute of Quantitative and Technical Economics, CASS.
145. **Xiong Bijun,** Professor, Institute of Economics, CASS.
146. **LI Rengui,** Editor, Institute of Economics, CASS.
147. **ZHNAG Anhua,** Graduate School, CASS.
148. **ZHAO Xingshu,** Graduate School, CASS.
149. **CHEN Kaiyuan,** Graduate School, CASS.
150. **FU Rao,** Graduate School, CASS.

Attachment II: 'Climate Change Mitigation: Challenges and Opportunities for Development' Updated Agenda for the IPCC Outreach Meeting Beijing, China, September 11-13, 2002

11 September, Wednesday	
	Arrival in Beijing
15:00-17:00	Meeting logistic Preparations (rooms, facilities, meals)
19:00-	Program Committee Meeting

12 September, Thursday	
08:00-09:00	**Registration** (Beijing Zhenxie Conference Center, 13 Jianguomennei Dajie, Beijing, 100732)
09:00-10:10	**Opening Session** Chair: **RU Xin**, Senior Research Fellow, Deputy Chairman, Academic Committee of the Chinese Academy of Social Sciences, Former Vice President, the Chinese Academy of Social Sciences
	Welcome Remarks **CHEN Jiagui**, Senior Research Fellow, Vice President, the Chinese Academy of Social Sciences **Bert METZ,** Co-Chair, IPCC Working Group III Third Assessment Report **QIN Dahe**[*], Administrator, China Meteorological Administration; and Co-Chair, IPCC Working I Fourth Assessment Report **GAO Feng**, Deputy Director General, Ministry of Foreign Affairs, Head of the Chinese Delegation to UNFCCC, Chief Climate Change Negotiator **MA Aimin**, Deputy Division-chief of Climate Change Coordination Office, SDPC
10:10-10:30	**Tea Break**
10:30-12:30	**Session I: Climate Change and Sustainable Development** Chair: **Yu Yongding**, President, Chinese Association of World Economy; and Director, CASS Institute of World Economics and Politics
10:30-11:00	**Scientific Assessment of Global Warming** Speaker: **DING Yuhui**, Co-chair, IPCCTAR Working Group I
11:00-11:30	**Briefing: World Summit on Sustainable Development** Speaker: **Dalia Maimon**, Professor, Institute of Economics, Rio University
11:30-12:00	**Equity Considerations for Climate Change Mitigation** Speaker: **O. Davidson**, Co-Chair, IPCCTAR Working Group III
12:00-12:30	**Emissions Reductions and Sustainable Development** Speaker: **ZHOU Fengqi**, Senior Fellow, Former director, Energy Research Institute, State Development and Planning Commission; Lead Author, IPCC WG III TAR
12:30-14:00	**Lunch**
14:00-16:00	**Session II: Emissions and Stabilization Scenarios** Chair: **XU Gengsheng**, Member, China People's Political Consulting Conference
14:00-14:30	Speaker: **ZHOU Dadi**, Senior Research Fellow, Director, Energy Research Institute, State Development and Planning Commission; Lead Author, IPCC WG III TAR
14:30-15:00	Speaker: **Tsuneyuki Morita**, Professor, National Institute for Environmental Studies, IPCC WG III TAR Coordinating Lead Author

[*] Be absent, Prof. DING Yihui from China Meteorological Administration delivered a speech on behalf of him.

15:00-16:00	**Policies and Measures**
15:00-15:30	Speaker: **XU Huaqing**, Energy Research Institute, State Development and Planning Commission; Lead Author, IPCC WG III TAR
15:30-16:00	Speaker: **Eric Haites,** Lead Author IPCC Working Group III TAR
16:00-16:20	**Tea Break**
16:20-18:20	**Session III Opportunities and Barriers** Chair: **JIANG Kejuan**, Energy Research Institute, State Development and Planning Commission; Lead Author, IPCC WG III TAR
16:20-17:20	**Opportunities and Barriers**
16:20-16:50	Speaker: **Bert Metz**, Co-chair, IPCC WG III TAR
16:50-17:20	Speaker: **Adil Najam**, Associate Professor, Boston University (from Pakistan)
17:20-18:20	**Economic Impacts**
17:20-17:50	Speaker: **Serroa de Motta**, Brazil, IPCC WG III TAR Lead Author
17:50-18:20	Speaker: **Terry Barker,** Chair, Cambridge Economics, Cambridge University, IPCC WG III Coordinating Lead Author
19:00	**Dinner**

13 September, Friday

09:00-10:20	**Session IV: Technology Transfer** Chair: **ZHOU Dadi**
09:00-9:40	Speaker: **LI Junfeng,** Professor and Deputy Director, Energy Research Institute, SDPC
09:40-10:20	Speaker: **Felix C. Matthes,** Professor, Germany
10:20-10:40	**Tea Break**
10:40-12:30	**Panel Discussion** Chair: **XIE Shaoxiong**
	David Warrilow, Experiences in EU and UK **Bert Metz**, Major conclusions and implications for China **JIANG Kejuan**, Emissions Scenarios for China **Ronalldo Seroa de Motta**, Emissions Reductions from a Developing Country Perspective
12:30-14:00	**Lunch**
14:00-15:30	**Public Dissemination** Chair: **Xu Gengsheng**
	O. Davidson **ZHU Xingshan** **LU Xuedu,** Division Chief, Ministry of Science and Technology **A. Najam** **Xie Shaoxiong**
15:30-16:00	**Tea Break**
16:00-17:30	**Responses** **ZHANG Anhua (**Senior Staff Member, Huaneng Corp): Energy Use and Efficiency Improvement in China in Recent Years **CUI Dapeng** (Secretary General, CCICED, former deputy administrator, SEPA): Prospect for International Cooperation **PENG Zhimin** (Deputy director, Development Research Center, Hubei Province), Impact of Climate Change on Economic Development in Hubei **XIA Wannian** (Director, Land Use Policy): Land Use, Land Use Change Issue **ZHENG Yuxin:** Research on Climate Change Issues
17:30-17:40	**Summaries** **PAN Jiahua**, Senior Research Fellow, Director, Global Change and Development Programme, Chinese Academy of Social Sciences