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Events convened on Thursday, 24 October 2002

## Eco-friendly approaches in the hydrocarbon sector

Presented by the Indian delegation in collaboration with the Indian Ministry of Petroleum and Natural Gas



D.K. Tuli, Indian Oil, says that sludge can best be treated through the use of sludge-eating natural bacteria.

S.J. Chopra, Indian Ministry of Petroleum and Natural Gas, provided an overview of oil refining in India, the fuel quality specifications in place and the reasons for changes to those specifications. He then introduced the panel members each of whom were from the Indian Oil Corporation.

D.K. Tuli explained the implications of oil spills and sludge removal for the environment, and outlined eco-friendly measures to mitigate their adverse effects. He highlighted the use of bacteria to dispose of sludge waste in a cost effective and eco-friendly fashion.

A.K. Mehta outlined the needs for energy efficient and eco-friendly domestic appliances to reduce energy consumption and greenhouse gas (GHG) emissions. Noting that most energy in India is consumed for domestic purposes, he described various appliances that can be used to reduce India's emissions.

A.A. Gupta discussed fuel quality improvement in India, emphasizing that although India made a relatively late start in setting vehicle emissions and fuel quality standards, there has been rapid growth in this area. He stressed the need for periodic revisions to automobile oil policy, appropriate institutional arrangements, effective government decision-making, optimal use of infrastructure, investment, creation of a national automobile pollution and fuel authority, and an integrated approach for improving ambient air quality.

G.K. Sharma described eco-friendly engine technologies, stressing that for improvements in ambient air quality, engine design must be modified to allow for the use of new fuel types. For climate change mitigation, he recommended that efforts be made to improve the energy efficiency of vehicles.

R.T. Mookken discussed the development of biodegradable and eco-friendly lubricants and the need for care in the use of lubricants. He stressed the need for incentives for the promotion of biodegradable lubricants.

R.K. Malhotra described the use of gasohol in India, stressing that the availability of agricultural sources of this fuel in India, and the rural, agricultural, energy security, and environmental benefits that its use generates, makes gasohol an attractive alternative fuel. He said pilot projects are underway for its use and studies on ethanol-diesel blends are advancing.

A.K. Bhatnagar discussed biodiesel as an alternative fuel in India, highlighting both the environmental and sustainable development benefits that it can provide. He suggested that Indian wasteland be used to grow jatropha, an important source of this fuel.

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# Equity and justice implications of adaptation: A strategic assessment

Presented by the Foundation for International Environmental Law and Development (FIELD), the International Institute for Environment and Development (IIED), and the Centre for Social and Economic Research on the Global Environment (CSERGE)



Benito Müller, Oxford Institute for Energy Studies, Saleemul Huq, IIED, Jürgen Lefevere, FIELD, and Neil Adger, CSERGE, stress the need for more attention to equity and justice issues in discussions on adaptation to climate change.

## More information:

<http://www.iied.org>  
<http://www.field.org.uk>  
<http://www.uea.ac.uk/env/cserge/>  
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Saleemul Huq, IIED, explained that the FIELD-IIED-CSERGE partnership aims to develop the notions of equity and justice in the context of climate change mitigation and adaptation. He highlighted that although developing countries have contributed to climate change the least, they are the most affected by it.

Jürgen Lefevere, FIELD, outlined the progress, gaps and challenges of the international legal framework for adaptation, highlighting the need for: integration between adaptation and mitigation measures; better implementation of existing provisions; a funding framework; methodological work and reporting; and a focus on capacity building, technology transfer and awareness raising. He called for increased attention to equity issues when developing an adaptation framework.

Jouni Paavola, CSERGE, outlined a framework for analyzing justice issues in the area of adaptation. He explained that distributive justice, which deals with the burden sharing

of adaptation costs, and procedural justice, which refers to how decisions on adaptation are being made, are necessary components of a fair adaptation framework. Paavola identified proactive and reactive responses at the international, national, collective, and individual levels and their justice implications and shortcomings.

Neil Adger, CSERGE, recommended, *inter alia*, reflecting justice aspects of mitigation in adaptation and evaluating justice implications of strategies under the UNFCCC, National Adaptation Programs of Action, and local plans and actions.

Benito Müller, Oxford Institute for Energy Studies, called for further research on burden sharing to identify what is to be shared, beyond monetary aspects.

Discussion: Participants discussed, *inter alia*: mechanisms for participation and representation; the integration of justice in adaptation to climate change with other issue areas, such as desertification and biodiversity; liability and responsibility; and funding issues.

## National Strategy Studies

Presented by the Swiss delegation and the World Bank

Beat Nobbs, Swiss Agency for the Environment, Forests and Landscape, highlighted that the National Strategy Studies (NSS) is a collaborative initiative between Switzerland and the World Bank that aims to provide capacity building assistance to Joint Implementation and Clean Development Mechanism (CDM) host countries.

Peter Kalas, World Bank, noted that NSS projects have recently been completed in Thailand and Egypt, other studies in Chile, Peru, China, Uruguay and India will be completed within the year, and new studies may soon be started in Sri Lanka, Papua New Guinea, and some Pacific Islands. He stressed the importance of building partnerships and promoting strong south-south and east-east dialogues.

Jürg Grütter, Grütter Consulting, described the most recent version of Carbon Emission Reduction Trade (CERT), a computational framework for presenting and analyzing the greenhouse gas offset trading market. He explained that CERT is a partial equilibrium model, that market regulations can be fixed through parameters, and that new options have been added to CERT, including complementarity, transaction costs and implementation rates.

Jessica Simmonds, South Africa, emphasized that there are ample options for low-cost carbon reduction projects in South Africa. She

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Jessica Simmonds, South Africa, concludes that the NSS is a useful basis for future work in her country.

## National Strategy Studies

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said that the objectives for the NSS in South Africa included increasing the understanding of the risks and potential of CDM projects, identifying necessary institutional arrangements, and raising awareness among stakeholders.

Upik Wasrin, Indonesia, highlighted the development of a portfolio of potential Indonesian land use, land use change and forestry projects. She explained that the selection criteria include the: presence of local institutions and organizations; commitment of local government; presence of stakeholders networks; biophysical factors including the occurrence of critical lands; and minimum social conflicts. She called for a new definition of "forests" applicable under the CDM.

Nguyen Hieu, Vietnam, said the greenhouse gas market potential in Vietnam is small and accounts for only 0.75% of non-Annex I export revenues. He noted the need for reduced transaction costs to improve competitiveness, and for criteria for additionality and sustainability.

Amin Omar, Egypt, underscored that Egypt has a large potential for CDM projects, and that the country should develop efficient, transparent and strong criteria and institutions for the marketing, approval and control of CDM projects.

### More information:

<http://www.worldbank.org/nss>  
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## Observation of changes in precipitation patterns and extreme weather events induced by water variation due to climate change

Presented by the delegation of Japan in collaboration with the Japanese Ministry of Education, Culture, Sports, Science and Technology

Toshie Koike, University of Tokyo, explained the background and steps that are being taken to improve understanding of the impacts of climate change on the global water cycle. He reviewed: the interrelationships between the climate and human activities; natural variations of the water cycle; the water crisis caused by water scarcity, floods and droughts, poor sanitation, and ecosystem degradation; human impacts on the water cycle; uncertainties inherent to the water cycle; and research initiatives to improve rainfall predictions. He outlined the Coordinated Enhanced Observing Period (CEOP), a pilot research project which aims to gather, assimilate, and archive data pertaining to the water cycle through the use of satellites to create coordinated observations of the global water cycle. He emphasized that CEOP is the first step to meeting the challenge of providing coordinated observations of the water cycle in a globally integrated system.

Riko Oki, National Space Development Agency of Japan (NASDA), explained the role of rain as a key variable of climate change, weather prediction, air/sea interaction models, and the global water cycle. She stressed difficulties in measuring rainfall due to spatial and temporal variability. Oki underscored the role of earth observation satellites in the observation of rainfall, outlining the success of the joint US-Japan Tropical Rainfall Measuring (TRMM) satellite in observing the global water cycle. She explained that new initiatives, such as NASDA's Global Precipitation Measurement (GPM) programme, are needed to focus on a broader spectrum of precipitation on a global scale, but noted that this data can only be satisfactorily calibrated and validated through systematic ground measurement of rainfall relying on international cooperation.



Toshie Koike, University of Tokyo, outlines the need for better observation of precipitation patterns caused by changes in the global water cycle.

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# Coping with a changing climate: Vulnerability, adaptation, and mitigation perspectives

Presented by the Tata Energy Research Institute (TERI), the Food and Agricultural Organization (FAO), the Centre for International Climate and Environmental Research-Oslo (CICERO), and the International Institute for Sustainable Development (IISD)



Saleemul Huq, IIED; Neil Leary, AIACC Project; Gustavo Best, FAO; C. Dasgupta, TERI; and Rajendra Pachauri, TERI and IPCC.

C. Dasgupta, TERI, introduced the event, highlighting the move since COP-7 from mitigation concerns to addressing adaptation.

R.K. Pachauri, IPCC Chairman and TERI Director General, discussed vulnerability to climate change in the context of Indian agriculture. He noted that developing countries are more vulnerable to climate change because of their heavy reliance on climate-sensitive activities, and weak technical, institutional and financial capacities. Pachauri outlined a study to assess vulnerability to climate change and globalization, through identification of elements of vulnerability, including biophysical and socioeconomic factors, and comparison with climate and trade sensitivity indexes. He noted that the findings of the study included the recognition of the important role of local infrastructure, low-coping capacity, the need for autonomous adaptation, identification of research priorities, integration of adaptation in planning, and availability of financial resources for communities.

Gustavo Best, FAO, explained the functions of agriculture in climate change, including its impacts, contribution to GHG emissions, and mitigation effects. Highlighting direct and indirect mitigation effects, including emissions reduction, carbon sequestration, and carbon substitution, he noted the main functions of agriculture for food, energy, environmental conditions, and socioeconomic functions. He noted FAO's role as both an energy-user and producer, stressing, *inter alia*, its support to the agro-industry and bio-energy development, and its contributions to food security enhancement.

Neil Leary, AIACC Project, called for more research on the adequacy of adaptation measures and vulnerability. He recommended taking into account globalization, land use change, population growth, technological change, and the identification of factors that determine or increase vulnerability. Noting a research gap in Africa, Leary called for more investment in scientific research in developing countries.

Saleemul Huq, IIED, highlighted the need for developing countries to develop their own knowledge and experience regarding adaptation, and called for south-south cooperation.

Mohan Munasinghe, Munasinghe Institute for Development, discussed the perspectives of developing countries' decision-makers on adaptation and the need to link high level policies with grass roots needs. Noting that in the poorest countries, development is a higher priority than climate change, he said adaptation was a way to integrate climate strategies with development policies.

Halldor Thorgeirsson, SBSTA Chair, expressed hope that the focus on adaptation would result in new constituencies for decision making and better integration of climate change with other issues.

Discussions: Participants discussed *inter alia*: insurance schemes; local institutional capacities; south-south cooperation; research programmes; and interlinkages between adaptation and mitigation measures.



Rajendra Pachauri, TERI and IPCC, explains that vulnerability to climate change can be assessed through various factors and climate and trade sensitivity indexes.

#### More information:

<http://www.teriin.org>

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