Proceedings from the Sustainable Development and Climate Change Workshop

Paris 24 – 25 October 2001

Kirsten Halsnæs
Anne Olhoff

UNEP Collaborating Centre on Energy and Environment

Proceedings from the Sustainable Development and Climate Change Workshop
Published by: UNEP Collaborating Centre on Energy and Environment, Risø National Laboratory, Denmark, 2002

ISBN: 87-550-3069-6

Available on request from:
UNEP Collaborating Centre on Energy and Environment
Risø National Laboratory
P.O. Box 49
DK 4000 Roskilde
Denmark
Phone: +45 46 32 22 88
Fax: +45 46 32 19 99

Graphic design: Finn Hagen Madsen Graphic Design, Copenhagen
Printed: Hellas Print, Haslev

Contents

1. Summary

The UN Foundation sponsored and hosted a workshop on Sustainable Development and Climate Change on October 24 and 25, 2001 in Paris. The workshop was organised by UCCEE (UNEP Collaborating Centre on Energy and Environment) and RIVM (National Institute of Public Health and the Environment). Chief climate negotiators, high-level government officials, and senior private sector representatives from China, India, Brazil, Iran (G-77 chairman), South Africa, Argentina, South Korea, and AOSIS participated in the meeting. Jacqueline Aloisi de Larderel from UNEP opened the workshop and Melinda Kimble from UNF made closing remarks.

Objectives

The specific objectives of the workshop were:

- To consider how longer-term development priorities link with climate change concerns
- To identify options for meeting developing countries needs and priorities while contributing to sustainable development both locally and globally.
- To discuss possible longer term action at domestic and international levels by countries to further the sustainable development and climate change discussion

Rationale

Many developing countries are undertaking energy initiatives that limit emissions of greenhouse gases and other climate favouring activities emerge as side-benefits of sound development programmes. A recent example that has been widely noted is China's success in reducing greenhouse gas emissions by 15% from 1996-2000, while the GDP expanded by over 35% during the same time period. Price reform, environmental improvement, and energy sector restructuring – all have been undertaken without reference to climate change mitigation or adaptation, but solely on their benefit to the economy and the local environment. These actions have reduced the growth rates of greenhouse gas emissions. This observation suggests that it may often be possible to build environmental and climate policy around development priorities that are vitally important to developing country decision-makers. It opens the potential that climate change policies may be seen not as a burden to be avoided but rather as a side-benefit of sound and internationally supported development projects and programmes. This meeting proposed a new conceptual framework that places sustainable development before climate change, reversing existing frameworks. The rationale for the meeting is that there are alternative and cleaner paths to achieving sustainable development goals that can also contribute to climate change goals.

Results

Linkages between Sustainable Development and Climate Change

All the developing country participants agreed that there are strong linkages between sustainable development and climate change, and fully endorsed the framework that places sustainable development before climate change. The G-77 chairman said that this rationale is new and useful to provide the decision-makers in developing countries the needed domes-

tic support from their constituencies to pursue climate change policies. The Chinese chief negotiator said that China's aggressive renewable energy and energy efficiency policies are part of the sustainable development plan to improve local environment and increase economic efficiency, and China will continue to do so even without the obligations under the UNFCCC. The key message here is that it is critical to engage and help developing countries on the sustainable development path. The climate change benefits will eventually come as a result.

Recognition of Developing Countries' Efforts

All the participating countries shared their domestic policies and activities in the climate change and sustainable energy area, and future plans regarding climate change and sustainable development. China has done more to reduce greenhouse gas emissions than the US, through closing small coal mines and power plants, pursuing aggressive energy conservation, removing subsidies on fossil fuels, prohibiting coal use in large cities, and shifting to alternative energy sources. The Chinese chief negotiator said that they will do more in the future. The Indian and Brazilian governments are also aggressively pursuing energy conservation measures and alternative energy sources. South Africa provided a public-private partnership model of establishing Shell-Eskom joint venture targeted to install 50,000 solar home systems over three years that the President Nelson Mandela launched. Iran, as an OPEC country, is making an effort to replace oil with natural gas. All the developing countries participants found the workshop very useful for such a cross-country exchange of domestic policy experiences in the area of sustainable energy and climate change, and requested that these efforts should be recognised and reflected in international documents.

Inputs to the World Summit in Johannesburg

The COP7 conference immediately after the Paris workshop adopted a Marrakech Ministerial Declaration providing inputs for the World Summit in Johannesburg next September. The Declaration emphasises linkages between sustainable development and climate change, and reaffirms development and poverty eradication as the overriding priorities of developing countries. The IPCC (Inter-governmental Panel on Climate Change) will also develop a technical report on the linkages between sustainable development and climate change. The G77 chairman said that the World Summit on Sustainable Development (WSSD) should focus on putting compliance mechanisms and implementation targets in place, which is lacking over the past decade after the Rio Conference. It was agreed at the workshop that sustainable development is the appropriate framework for integrating economic development and environmental protection.

Developing Countries' Needs and Future Action Plans

- The developing country participants emphasised the importance of increasing public awareness in both industrialised and developing countries about the linkages between sustainable development and climate change, among both general public and decision-makers. They expressed interests in hosting follow-up workshops in their countries.
- All developing country representatives raised the issue of sustainable financing. Lack of financing has been a major barrier to clean energy development in developing countries. The Chinese chief negotiator, for example, said that China plans to increase the share of natural gas in the energy mix from 2% to 8% and this requires $15-20 billion investment over 5 years. It is critical for public funding to bridge and stimulate large investment from the private sector in clean energy sector.
- As mentioned earlier, all developing countries participants also requested the international community to recognise developing countries' efforts to address climate change challenges, which should be reflected in international documents.
- Next steps: UNEP, UCCEE, and an expert group (including Tom Heller, IPCC panel experts, and WRI, etc.) intend to prepare further activities in this area, including regional workshops, identification of developing countries' specific needs, and mobilisation of additional resources from donors such as the EU and US Foundations, and bilateral sources.

Proceedings from the UNF Workshop on Sustainable Development and Climate Change

2. General Introduction to the Workshop Discussions

The workshop was opened by introductory welcome statements, by **Dr. Xiadong Wang** from the United Nations Foundation and **Mrs. Jacqueline Aloisi de Larderel** from UNEP, Division of Technology, Industry and Trade. They both emphasised that they hoped that the workshop would be seen as an opportunity for taking an open discussion about how sustainable development and climate change policies can be pursued simultaneously in the common interest of all parts of the world.

Dr. Wang stressed that such combined policies are a major priority to the UNF and a number of energy sector and business development activities are already going on to support sustainable development and climate change. UNF is the largest donor in international sustainable energy and climate change policies among US Foundations and has programmes on renewable energy, energy efficiency, and the Clean Development Mechanism. The goals of this workshop are starting from these energy initiatives to identify developing countries needs and priorities and to recognise already ongoing efforts in these countries to address climate change. Built on such an assessment it is UNFs aim to propose a new framework: placing sustainable development before climate change, a framework which can be used as a basis for developing long-term action plans in the countries.

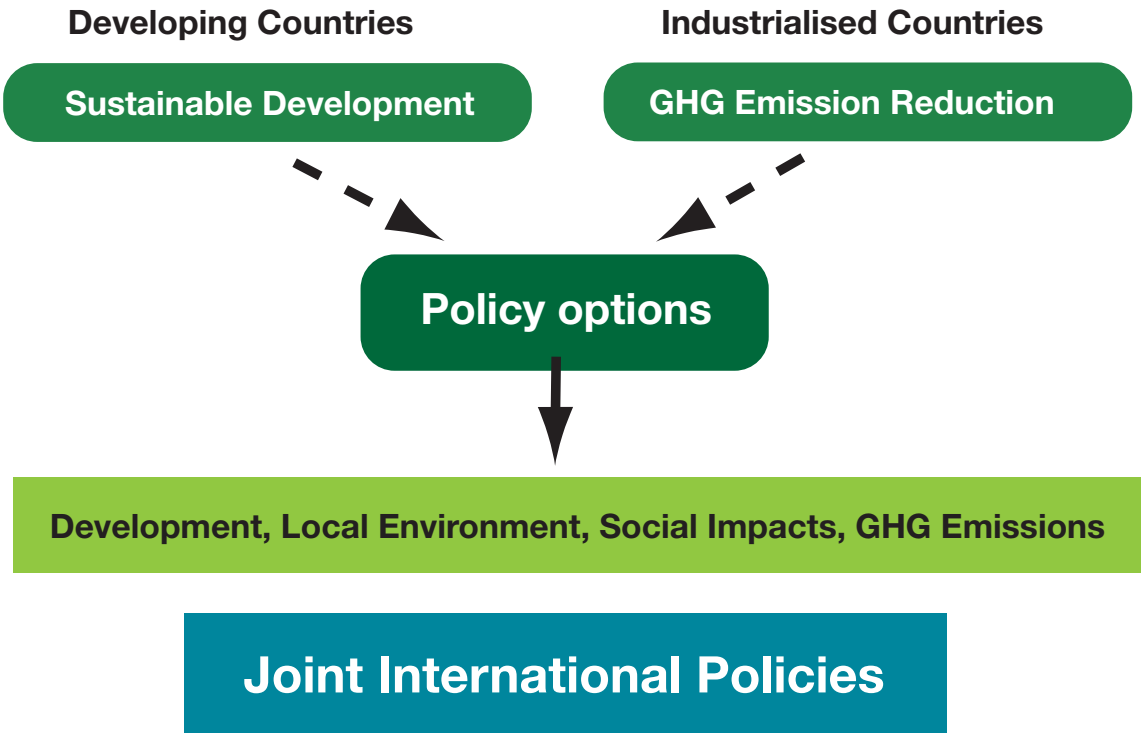
Mrs. de Larderel thanked UNF for inviting UNEP to participate in such an effort that is totally in line with UNEPs perspective on climate change policies. It is UNEPs hope that the workshop discussions will be a step forward in the establishment of a sustainable international policy regime, where all parts of the world collaborate about climate change policies in a fair and equitable way. UNEP see the workshop discussions and hopefully further activities in this area as very interesting oppor-

tunities to enhance and enrich the many ongoing energy sector programmes and business activities conducted by UNEP, other UN organisations and UNF. **Mrs. de Larderel** invited the participants to take an open critical discussion about how UNEP could support their efforts to implement sustainable development and climate change policies, and offered that UNEP was ready to give national capacity building a high priority. Support will also be available in various areas including technology information, awareness and public information, educational programmes, and technical support to enabling activities and case studies.

Dr. John M. Christensen from UCCEE expressed his hope that the workshop would provide a forum for creating a positive, informal and open dialogue on the synergies between sustainable development and climate change. **Dr. Christensen** furthermore emphasised that the synergies between sustainable development and climate change have the potential for reconciling any possible differences in the policy priorities of stakeholders from respectively developing and industrialised countries. For example, international financiers must be expected to mainly prioritise projects that have a low financial cost per unit of GHG emission reduction, while national stakeholders or governments are expected to prioritise national benefits of the activity in the form of e.g. market development, employment, social development, and local environmental improvements. Following that, it will be relevant to measure multiple financial, economic, social, and environmental impacts of mitigation policies and then supply this information to a broader dialogue and negotiation between national stakeholders and international financiers in order to develop a portfolio of policy options that balance sustainable development and climate change policy priorities. Figure 3 below illustrates this process.

Dr. Christensen ended by saying that the workshop provided an excellent opportunity to ask for inputs regarding what a development driven climate change approach could look like and suggestions for all sort of follow up activities to the development first approach were welcomed.

Figure 1. Sustainable development and climate change mitigation policies – potential perspectives and synergies



2.1 Conceptual Background for Linking Sustainable Development Issues and Climate Change Policies

Professor Tom Heller, Stanford University USA presented a paper on the idea of introducing sustainable development as a first priority for climate change policies. Climate change has been universally recognised as a global problem. While historically the preponderance of greenhouse gas emissions has been in the developed countries, emissions will increase rapidly with expected and needed economic growth in developing countries. Both the Framework Convention on Climate Change and independent scientific analysis have reiterated that strong and inclusive global cooperation will be needed to realise the deep reductions in greenhouse gas emissions that are necessary over the longer term to control climate change. Yet, in the years since the constitution of the UN Framework Convention on Climate Change in 1992, North-South cooperation on climate change has not developed adequately. Worse, the discussion on how to address climate change in the longer term has become polarised. A principal reason for this lack of progress is that climate change is not a politically important focus of economic or development policy and is only recently being considered among national environmental policy objectives. Climate change remains marginal to the pressing issues of poverty, natural resource management, food security, energy needs and access, or urban transport or land use that capture the attention of leading actors.

Current co-operation efforts and analyses of climate change policy have been driven uniquely by concerns about climate change. From this perspective, related ancillary benefits in energy efficiency, and health impacts of local air pollution may be significant and promote action, but they are only of secondary importance in that they may reduce the total costs of compliance with climate change commitments. This approach has had limited success in driving global action. At the same time, it is increasingly recognized that developing countries are pursuing development policies and programs that contribute to sustainable development. In many countries, energy initiatives and other climate favouring activities emerge as side-benefits of sound development programmes. Price reform, agricultural soil protection, sustainable forestry, energy sector restructuring - all undertaken without any reference to climate change - can mitigate environmental risks while they enhance economic and political development.

The challenge for integrated development and environmental policies is the practical question of how best to choose and stay on the paths that minimise the local and global environmental costs of relieving poverty, providing adequate food, getting electricity to households and industry, providing employment and transportation facilities consistent with the needs of developing country people. To reframe global environmental policies as deriving from development priorities does not make climate change easier to solve. Rather, it suggests that global collaboration on climate change should be approached on multiple levels through local and national development programmes, as well as though multilateral efforts to establish co-operation mechanisms within an equitable and efficient global climate change regime.

This approach suggests that a less polarised way of meeting the challenges of sustainable development and climate change is to build environmental and climate policy upon development priorities that are vitally important to decision-makers. It focuses on the potential that contributions by developing countries to the management of the risks of climate change should be seen not as a burden of legal commitments to be avoided, but as a side-benefit of sound and internationally supported development. Instead of starting with the problem of how to generate political attention to climate change risk issues among key policy decision makers and publics, it suggests taking the starting point in development problems that are already politically central and based on that investigating how these problems can be solved in the most climate-friendly and most sustainable development friendly way

2.2 Key Note Presentation on Sustainable Development and Climate Change

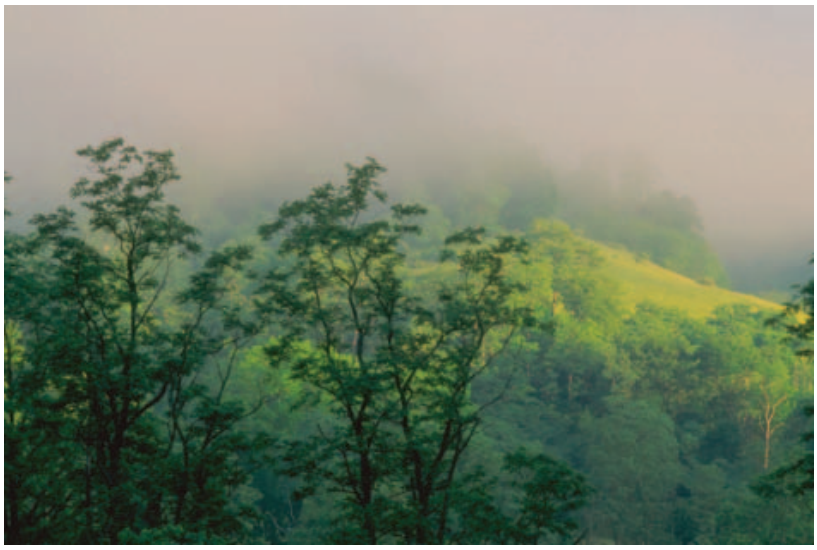
Professor Emilio Lébre La Rovere from Federal University of Rio de Janeiro, Brazil intro-

duced the conceptual discussions and pointed out that connections between climate change and sustainable development strategies should be evaluated with the main goal to strengthen national programs leading to GHG emission reduction and adaptation. These climate change initiatives should be understood as co-benefits to general development policies.

Results from the recent IPCC SRES scenario work (IPCC 2000) support the conclusion that the choice of a development path is far more important for the total magnitude of future GHG emissions and thereby climate change than the impact of isolated mitigation programmes. This can for example be illustrated by the magnitude of the GHG emission reductions that would be required to stabilise GHG concentrations at 550 ppmv in 2100 in the high IPCC baseline emission scenario called A2 compared with the much smaller reductions required to meet the stabilisation targets in the IPCC B1 scenario. This is the case because the B1 scenario assumes that the baseline case development will give a high priority to sectors and lifestyles that have a low GHG emission intensity compared to the A2 scenario.

Professor La Rovere also drew a number of conclusions on the implications for an international climate change policy regime of giving sustainable development first priority. Such a framework would facilitate that equity and economic efficiency could be achieved jointly for example through a burden-sharing scheme that is based on cumulative emissions. More precisely, the cumulative emissions of individual countries from a given target year, for example 1990, could be used as a basis for establishing future mitigation targets. The idea is that these cumulative emissions could be taken as a reasonable proxy of the relative contribution to global warming, which would represent fairness and equity. The cumulative emission inventories could easily be calculated on the basis of national inventories as reported to the UNFCCC, and would make it attractive to Non-Annex I countries already from now on to follow low-carbon intensive development paths.

The introduction of fair and equitable burden sharing on GHG emissions is also strongly needed because Non-Annex I countries will have an increasing share of global emission over time. This is the case because primary energy consumption will grow fastest in Non-Annex I countries as a consequence of basic economic development needs. It will therefore be interesting to conduct various scenario-analysis of how alternative climate change impact targets can be achieved with different global GHG emission burden sharing schemes.



3. Climate Negotiators' Perspectives on Sustainable Development and Climate Change

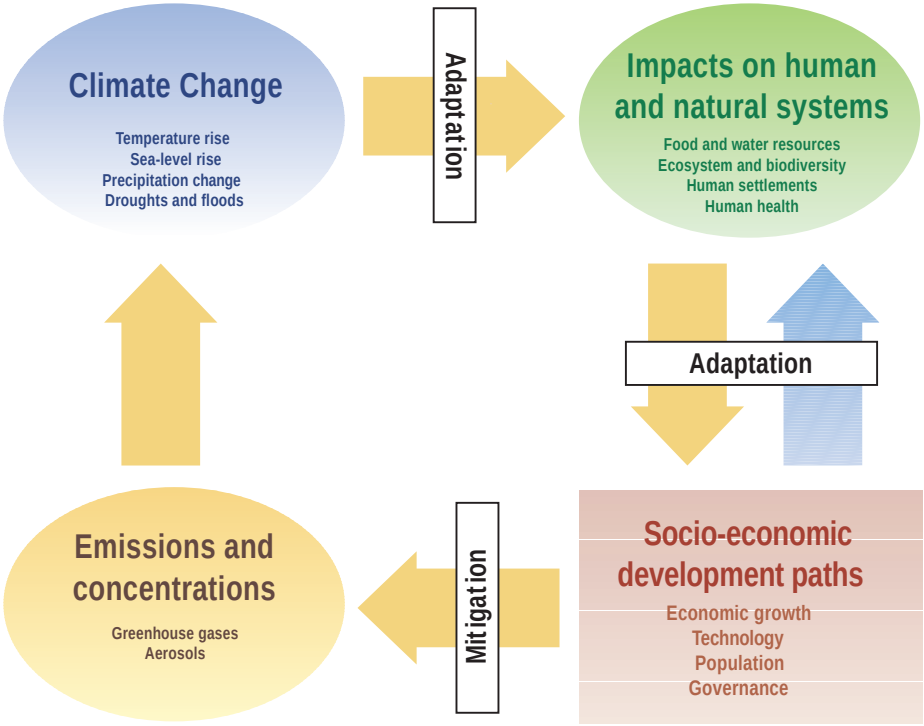
3.1 Overview

Professor Ogunlade Davidson, Co-Chair of IPCC WGIII and Director of the Energy and Development Research Centre, University of Cape Town South Africa introduced the recent IPCC conclusions about sustainable development and climate change. This conceptual framework has been discussed extensively as part of the IPCC Third Assessment (IPCC 2001) ending up with the conclusion that there is a strong need for more research in this area. The importance of understanding the relationship between sustainable development and climate change can for example be illustrated as in figure 1 below from the IPCC Synthesis Report (IPCC 2002). The figure shows that climate change – as well as our ability or capacity to implement adaptation and mitigation policies – depend on socio-economic development paths, technological development, population growth, and governance.

Professor Davidson suggested to think of sustainable development in terms of the ten challenges: Clean air, clean water, food, energy, land use, transport, housing, jobs, waste disposal, and health care. Indicators reflecting these areas could then be assessed as an integrated part of climate change analysis. Such an approach has not yet been widely seen in international studies, but it will be important to promote such studies as an operational and practical follow up to the conceptual discussion that has been introduced with the IPCC Third Assessment report and that has been going on for several years as part of the CSD process.

The major findings of IPCC at the more conceptual level is that sustainable development can be used as a framework for understanding society's ability to respond to climate change impacts but more work is needed to understand and assess the capacity for policy implementation. It will for example be important to assess how a portfolio of institutional capacity building efforts combined with technology transfer mechanisms can support specific sectoral development plans. In this context, partnerships between all relevant public and private sector stakeholders should be stimulated and could serve as a focal point for multilateral and bilateral finance, including the

Figure 2. An Integrated Assessment Framework for Anthropogenic Climate Change



development of new innovative financing mechanisms.

Finally, **Professor Davidson** introduced a number of sustainable development activities of IPCC that go beyond the Third Assessment Report. IPCC will for example develop a Technical Report on Climate Change and Sustainable Development. This report will be based on material from earlier IPCC reports from the Second and Third Assessment and on material from the Special IPCC reports on land use change, emission scenarios, and technology transfer.

3.2 Statements from National Participants

National participants from the governments of China, India, the Islamic Republic of Iran, and the Republic of South Africa stated by the heads of the national delegations to the upcoming COP-7 Meeting in Marrakech a strong support to the objectives of the workshop.

Mr. Mohammad Salamat, National Delegation of Iran to UNFCCC, Department of Environment, Teheran thanked UNF, the UNEP Collaborating Centre on Energy and Environment and RIVM for organising the workshop. He said that "the agenda of this workshop, which focuses on integrating sustainable development objectives and climate change concerns at national and international levels, seems to be quite relevant in light of the current status of the multilateral discussions on these issues. I hope that the presentations and the discussions, which will be made at this workshop, would help advance understanding of some of the aspects of these issues.

Climate Change concerns may only be integrated into the national development strategies of countries if it is viewed from a perspective of sustainable development. It seems that the environmental pillar of sustainable development drew more attention and absorbed more resources of the international community in the aftermath of the Rio Summit, as compared to the other two pillars, that is economic growth and social development, although the global environmental deterioration exacer-

bated during this period. A number of multilateral environmental agreements have been developed at Rio and since Rio with rather good environmental targets and objectives, yet short of development perspectives and concrete sustainable development visions with necessary means of implementing them. The global climate change process has not been an exception in this regard.

The approaching ten-year review of the Rio Conference-the World Summit on Sustainable Development (WSSD) – is once more providing the international community with an opportunity to highlight the paradigm and concept of sustainable development, which is the most important Rio heritage. This could help ensure that the other two pillars would gain the necessary weight in the global debate. It could also help ensure that that multilateral environmental agreements reached in Bonn in July earlier this year have moved the global climate change debate a significant step forward bearing in mind the very uncertain and cloudy circumstances we were all encountering prior to the Bonn meting.

However, much remains to be done. We still need to agree on some of the details of the decisions taken in Bonn. We need, for instance, to agree on modalities for burden-sharing among developed countries of financial resources to be provided by them to the three new funding arrangements established by the Bonn agreements.

In a nutshell, and generally speaking, the Bonn Agreements have put back climate change issues into their appropriate context, which is sustainable development. Therefore, no attempt in one way or another to change the delicate balance stuck within the Bonn Agreements or to alter the focus of attention drawn at COP-6, Part 2 should be made.

Mr. Salamat finally requested, that the UN Agencies in addition to facilitating in-country discussion on sustainable development and climate change as in the context of the current workshop should support public awareness activities and capacity building. Furthermore, specific case studies that illustrate linkages between development and climate change, for example in the energy and transport sectors, should be conducted.

Mr. Gao Feng, Deputy Director of the Treaty and law Department of the Ministry of Foreign Affairs of China, and head of the Chinese delegation to the COP-7 meeting welcomed the workshop discussions and recognised that sustainable development as a conceptual framework is very important to China both in the way it is considered in Agenda 21 and in relation to national development programmes. Sustainable development is part of the recent economic development plans of China and in several sectoral programmes, for example those related to environmental protection, forestry, energy efficiency and conservation measures, and in the science and technology development plans.

Recent experiences from China demonstrate that development and environmental protection mutually can enforce each other. The people ask for environmental improvements, when development is taking place and this has for example implied that energy efficiency improvements in the energy sector have been a very high priority and very successful over the last decade. Annual energy saving rates of as much as 7.2% have been demonstrated in the 1990s in China and this implies that around 400 million tonnes of carbon equivalents have been saved through these policies. These savings have been economically attractive to China seen from a national development perspective, but the implementation of the policies in practice requires support to overcome capital constraints and other barriers. First and foremost, the implementation of energy efficiency policies rely on the availability of technologies, capacity building, and public awareness and education programmes.

The Bonn agreements are an important political step that have the potential to support the implementation of joint development and environmental protection policies that in countries like China can contribute significantly to further reductions of carbon emissions, but the general framework of the agreements need further operationalisation before the policies can materialise. One of the important needs is to develop a financing mechanism for sustainable development and climate change.

Mr. P. V. Jayakrishnan, Secretary, Ministry of Environment and Forests of India, and head of the Indian delegation to the COP-7 meeting

welcomed the workshop and recognised that addressing climate change issues in the context of general sustainable development policies as in the meeting objectives is a very promising way forward in moving international and national policies. Sustainable development as well as specific environmental policy objectives are deeply rooted in Indian national development programmes both in general national plans and in sectoral plans for the energy, forestry, agriculture, water supply, coastal protection, and various other sectors. India has specific plans for all these sectors that provide a good basis for more detailed assessment of how sustainable development objectives and climate change policies can be met simultaneously.

Energy sector programmes generally aim at increasing energy efficiency at the same time as increasing the energy supply to the population and the commercial sectors. In this way it is an objective to decouple the GDP growth rates and the primary energy consumption growth rate. Market instruments and liberalisation programmes have been important instruments in achieving these objectives, but in this context India has also experienced a number of barriers in getting these policies to work. The success of market instruments depend on the capabilities of markets and institutions to react and this again raises the need for improved institutional structure, financial mechanisms, management structures for energy supply and service companies, and general education and awareness building. Governance of local and regional governments and private actors are important in this respect.

A major objective of India's energy policy is to introduce cleaner coal technologies and to expand the use of renewable energy technologies, so these areas are very important for India to include in international financial mechanisms for sustainable development and climate change.

Mr. Festus Luboyera, Director Global Climate Change, Departments of Environmental Affairs and Tourism of South Africa, and delegation head to COP-7 like the former speakers supported the view that sustainable development and climate change is a very innovative and constructive framework for national policies. The South African government has already initiated a broad range of national initiatives, where stakeholders and experts are invited to participate in discussions and practical work on sustainable development and various sectoral policy aspects including climate change. The sectoral programmes include energy efficiency and renewable energy, increased electrification, transportation, coal mining, industry, agriculture, forestry, water supply, and waste management.

A number of specific sustainable development policy priorities are used as general criteria for evaluating the sectoral programmes. In addition to general economic development criteria, a main priority is given to poverty alleviation, job creation, housing, and general education programmes, including the whole educational system from primary schools to university and research. Specific criteria for sustainable development related to these policy priorities are used in project evaluations.

South Africa is conducting several capacity building activities on climate change including education and training programmes with the participation of local governments, institutions, experts, and a broad range of stakeholders. The activities also include research programmes for various climate change aspects such as climate modelling, vulnerability, impacts, adaptation, and mitigation policies.

Adaptation strategies and mitigation strategies are being developed for the energy sector, land use sectors, industry and waste, but it is an open issue how such plans can be implemented in practice. This is the case due to the many unsettled issues in the operationalisation of the Kyoto Protocol, specifically regarding the CDM and the adaptation funds. Furthermore, and maybe more important, many of the most attractive adaptation and mitigation projects yet identified in South Africa are closely integrated with general sustainable development policies, so there is a need to innovate broader international financial mechanisms that can support such integrated objectives, but go beyond the scope of the Kyoto Protocol and the UNFCCC. The WSSD that will be hosted by the South African government in Johannesburg in August 2002 can hopefully address a number of these policy issues.

Mr. Jai-Chul Choi from the South Korean Mission to the OECD agreed that the approach where sustainable development is seen as a driver for climate change policies is fruitful because it reflects the reality of many countries, where national development programmes are the starting point for environmental policies.

South Korea has given climate change policies a very high priority and has formed a special office to manage the national climate change action plan. This plan has several elements including renewable energy programmes, energy efficiency, and green technologies in manufacture. Furthermore, a number of projects have assessed how South Korea potentially can participate in CDM and other cooperative international climate change policies. The plans have generally emphasised the use of economic instruments and market liberalisation as the most important policies in integrating sustainable development, climate change and sectoral policy objectives. The government has as part of this policy development invited private sector stakeholders to suggest voluntary actions that meet sustainable development objectives.

Mrs. Farhana Yamin from FIELD in the UK, who has been a main technical adviser to the AOSIS group, highlighted that for the AOSIS group of countries climate change is threatening the existence of the societies as such and therefore by nature is a basic development issue. In this way, it is a basic requirement for this group of countries that Annex I countries implement their commitments according to the Kyoto Protocol and that further actions are taken and specified in a second commitment period. It would be relevant and fair to specify emission reduction targets on the basis of ranges of what would be required to ensure that temperature changes, sea level rise and other climate change impacts do not exceed certain thresholds.

Developing countries' participation in the FCCC must be defined on the basis of their limited resources and capacities, and their vulnerability to climate change. In the case of the AOSIS countries, adaptation policies are a main priority and a number of activities such as financial and technical transfers and capacity-building programmes can help these aims. It is here worth recognising that many developing countries including AOSIS have a number of problems with implementing the financial mechanisms that are already existing or are under way as for example the programmes of the Global Environmental Facility. This is both the case because these programmes require strong capacity, and because they rely on complicated institutional mechanisms, including markets that are weak in the countries.

4. National Policies and Programs on Sustainable Development and Climate Change

4.1 Overview

Senior Research Specialist Kirsten Halsnæs, convening lead author of the Costing Methodologies Chapter in the IPCC TAR, from the UNEP Centre presented recent IPCC cost conclusions with regard to potential synergies and tradeoffs between climate change and development policies

The new Third Assessment Report of IPCC has concluded that research in climate change policies in the context of development, sustainability and equity will be important priority areas in order to establish a basis for coordinated global policies. These issues have been addressed in the IPCC Working Group II Report on Impacts, Vulnerability, and Adaptation, as well as in the Working Group III Report on Mitigation Policies. The two reports have highlighted a number of similar conceptual issues that are considered to be important in better understanding the relationship between sustainable development and climate change. An example of this is included in the Summary for Policy Makers (SPM) of WG III (IPCC 2001), which concludes that there can be many synergies between sustainable development and climate change mitigation policies.

Research on inter-linkages between sustainable development and climate change policies is an emerging area, where the work until now primarily has been of a conceptual nature. However, there are a number of studies that have assessed important aspects of the issue without covering all economic, social and environmental dimensions of sustainable development. Areas that have been well covered by studies are the potential for achieving energy efficiency improvements and thereby decreasing energy supply costs, and ancillary benefits in the form of improved health due to decreased local air pollution as side-impacts to climate change mitigation policies.

Various energy efficiency improvements with a net economic benefit have been assessed to exist in buildings, transport and manufacture in addition to the introduction of more efficient conventional power production technologies and transmission systems (IPCC 2001), Chapter 3 and SPM). The net benefits of these policies reflect that these options have a significant fuel saving value and increase the reliability of energy supply. This is the case because the options are assumed to replace very inefficient and pollution intensive technologies. The realisation of this economic attractive climate

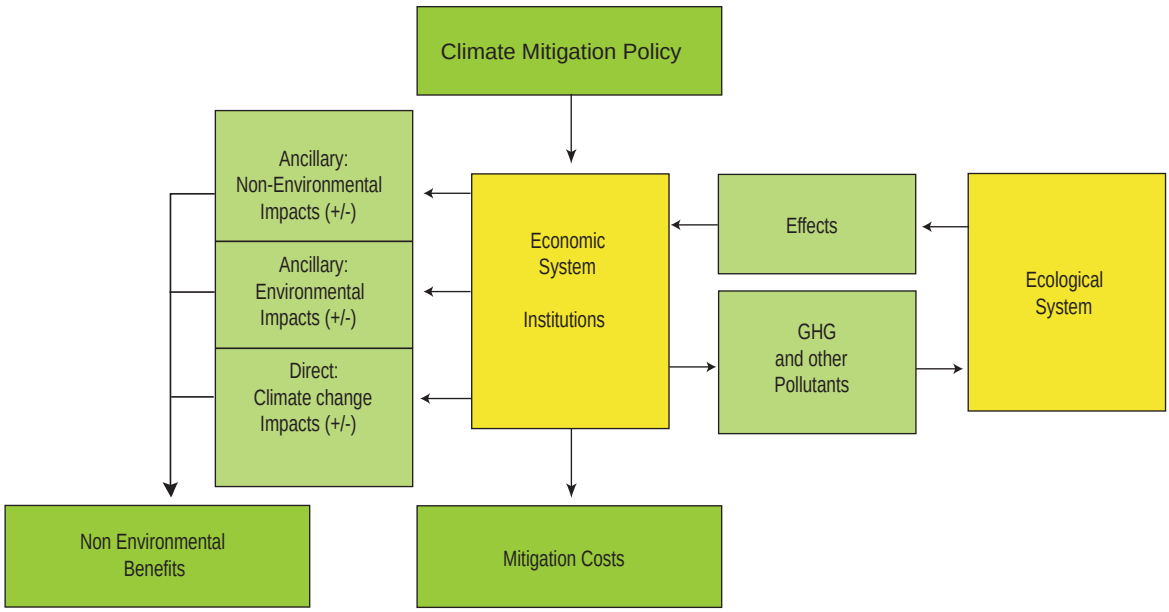
change mitigation potential depends on the ability to overcome various barriers and implementation costs that have not been fully considered in all the studies that are coved by IPCC (2001, Chapter III).

Similarly IPCC concludes that a number of mitigation policies can have important side-benefits on the local environment and thereby on health. The relationship between policies that are initiated by climate change mitigation policy objectives, but have ancillary benefits or side impacts on the local environment or other areas are illustrated in figure 2 below.

The IPCC report assesses a number of empirical studies that have estimated the costs of various policy options per unit of GHG emission reduction and the ancillary benefits associated with decreased local air pollution and thereby improved health conditions (IPCC 2001, chapter 8). It is concluded that the ancillary benefits in the form of improved health exceed the costs of climate change mitigation options in a number of case studies for Chile, China, and to a certain extent also for Norway and Western Europe. Significant ancillary health benefits are also identified in studies for the USA, but are here less than the mitigation costs of the policy options. The IPCC report includes a comparative assessment of the methodologies and assumptions applied in the ancillary benefits studies and concludes that it is very difficult to compare these due to differences in baseline scenario approach, assumptions and general scope of the studies. The empirical conclusions that can be drawn from this review must therefore be considered as being preliminary and incomplete. Some of the complexities in this work are due to the fact that the estimation of ancillary benefits requires localised models of environmental impacts, population, exposure, preferences and valuation that should be based on a consistent methodology. The result is expected to be estimates that vary significantly by nation and region, and with time and it is therefore recommended to conduct specific national case studies of ancillary benefits as well as more general methodological work in order to better understand the potential synergies and tradeoffs between global and local environmental policies.

As previously mentioned the studies of energy efficiency improvements and ancillary benefits represent part of the issues that should be addressed in a full assessment of inter linkages between sustainable development and climate change. Recent work by Markandya and Halsnæs suggest how a broader set of sustain-

Figure 3. Relationship between climate change mitigation policies and ancillary environmental and non-environmental impacts.
Source: IPCC (2001) Chapter 7, figure 7.1



able development indicators can be assessed for climate change mitigation policies (Markandya and Halsnæs 2002).

4.2 National Presentations on National Development Programmes and Linkages to Climate Change and on Business Sector Perspectives

*4.2.1 Iran's development plans and climate change policies - introduced by **Dr. Soltanieh**, Project manager of National Communication of Iran to UNFCCC.*

The energy sector in Iran accounts for approximately 78 percent of the contribution to total CO_2 equivalent emissions, whereas forestry and agriculture account for 7 percent each and industry for 6 percent of total CO_2 equivalent contributions. Of the energy sub-sectors, the two largest contributors to CO_2 emissions are industry (30 percent) and small combustion (27 percent), followed by energy transformation (21 percent) and transport (20 percent) with other accounting for the remaining 2 percent. Oil and gas activities account for more than 70 percent of contributions to emissions, implying that this area should be the focal point for intervention

The Iranian baseline scenario for power plants shows a large increase in the natural gas consumption, while heavy oil and gas oil remains relatively constant. One of the main issues is the flaring of gas from refinery and wells. Significant investments and use of advanced technologies are necessary to change this. This implies a need for financial resources.

The national strategies and action plan place GHG emission reduction as a priority under the energy sector and the land-use change and

Table 1. Energy sub-sector priorities regarding climate change mitigation in Iran

Oil & Gas Activities
- Energy Efficiency
- Fuel switching
- Gas Injection to Wells
- Flared gas: Gas-to-Liquid, Oxidative-Coupling-of-Methane, etc.

Transportation
- Improvement of Fuel Quality & Fuel Pricing
- Improvement of Public Transportation: Fleet Increase, conversion to CNG, Catalytic Converter & Trap, Expansion of Metro, LRT
- Improvement of High-aged Vehicle Structure: Scrappage program, retrofit program
- Urban Traffic Management: Parking policies, intelligent traffic lights, traffic regulation

Power Generation
- Fuel Switching
- Hydro Power Plants
- Energy efficiency: Combined Cycle, Combined Heat & Power, Small Power Plants
- Renewable & Clean Energy Resources: nuclear energy, Solar and Wind, Geothermal, Wave, Tidal and Hydrogen

Industries
- Energy Efficiency
- Fuel switching

Commercial & Residential Buildings
- Fuel switching: Expansion of Rural Electrification, Expansion of Rural LPG Uses, Expansion of Urban NG Uses
- Energy Efficiency: Efficient Home Appliances, Insulation, Double Layer Windows

Agriculture
- Connecting Agricultural Irrigation Pumping to Electricity Network
- Use of Efficient Engines

Table 2. Summary of adaptation strategies in Iran

Water Resources
- Integrated Ground and Surface Water Management
- Construction Low-cost Miniature Reservoirs for Local Irrigation
- Rehabilitation of Small Tanks in Dry Zone
- Improvement of Water Use Techniques
- Improvement Efficiency of Water Supply Systems

Agriculture
- Development of New Crops Varieties
- Conservation Tillage
- Deep Tillage
- Timeliness of Farming
- Use of Pipes for Water Conveyance
- On Farm Land Development
- Expansion of Pressurized Irrigation Systems

Forestry
- Forest: Rehabilitation,Development and Silvicultural Base Treatment, afforestation, Balancing of Forest Harvesting with Ecological Growth Capacity, Improvement of Forest Trees
- Range Lands: Renovation and Reseeding, Balancing of Range Production Capacity with Animal Units, Implementation of Watershed Plans
- Desert: Seedling Plantation, Sowing and Seed Drilling, Petroleum Mulching

forestry sector. Climate change mitigation objectives are mainly being pursued through energy sub-sector policies in the form of government plans and proposed programs. These are summarised in table 1 below.

Vulnerability to climate change and adaptation measures are classified as priorities of the sectors of energy, water resources, agriculture, land-use change and forestry, human health, and coastal zone. Table 2 provides a summary of adaptation strategies in Iran.

*4.2.2 China's practice for sustainable development - introduced by **Mr.Li Jungfeng**, Deputy Director, Energy Research Institute of State Development Planning Commission*

The Chinese economy has experienced rapid growth. Since 1978, the economic growth rate has exceeded 7 percent per annum and the average growth rate is more than 9 percent. Within the same period, income per capita has increased from less than USD 300 to approximately USD 800 per annum, population growth rates have been reduced from about 2 percent to less than 1 percent, and the population living in poverty has been reduced from approximately 200 million to 20 million.

At the same time, China has been successful in effectively decoupling energy consumption growth and economic growth. In the period from 1980 to 2000, total energy consumption only increased from 600 to 1300 million tce. Furthermore, the second half of the 1990s have been characterised by zero percent growth of total energy consumption. To illustrate, these achievements correspond to 50 percent CO_2 emission reductions compared with a business as usual scenario from 1978.

One of the chief reasons for the success in China is a very organised national programme in the areas of economic growth, population growth, poverty alleviation, environment, and energy.

The national energy programme has focused on energy efficiency, renewable energy, and a clean coal programme. In the area of renewable energy, more than 30 GW small hydropower plants have been set up, more than 26 million square meters of solar hot water collectors have been installed amounting to almost half of the global installations, over 6 million small biogas digesters have been installed, and 170,000 sets of small wind turbines

are now in place. The clean coal program has meant a reduction of coal production from 1450 million tons in 1996 to about 1300 tons in 2000 and the alleviation of the air pollution situation in large cities such as Beijing.

From the broader aspect of climate change mitigation, the Chinese initiatives under the national energy program have implied that:

- Energy consumption has been reduced with at least 1.5 billion tce per annum compared with a business as usual scenario
- 15 percent of the total energy consumption comes from renewable energy, a figure that is expected to grow in the future
- CO_2 emissions have been reduced by 15 percent in the period from 1996 to 2000, whereas the GDP growth in the same period has been 35 percent

*4.2.3 Current Energy efficiency policies in India - introduced by **Mr. Shekhar**, Ministry of Power.*

India's economic growth during 1997-2012 is estimated to be 7.4 percent. With a commercial energy to GDP elasticity of around unity, this implies a commensurate growth in the demand for energy. This means that an additional 100,000 MW of electricity capacity is required to meet peak and base demand in this period. The proven oil and gas reserves will last for at least two decades, but since oil and gas constitute 54 percent of total commercial energy, huge imports are required with an associated increase in the import bill. At the current rate of production, proven reserves of coal will last for more than 200 years, whereas options for e.g. hydro and natural gas are very limited. In other words, the development of the energy sector in the business as usual scenario is neither environmentally nor economically sustainable.

At the same time, there is a large potential for increasing energy efficiency and energy conservation. For example, outdated production equipment with low efficiencies is common and implies losses of up to 25 percent.

On this background, the power ministry is introducing a legal framework to enhance the penetration of energy efficiency in the economy. Energy policies are more specifically aimed at tariff rationalisation, end-use efficiency, renewable energy, and reduction of transmission and distribution losses.

However, a number of barriers, such as certain technical and financial barriers like lack of awareness, market distortion, lack of standardisation and labelling of equipment and devices, resource gap for the transfer of advanced technologies, lack of effective co-ordination. Market development and financing barriers are the key issues to be addressed. Energy efficiency faces a classical development problem. On one side, the capital markets will not finance energy efficiency projects in the absence of a sufficient volume of such projects. On the other hand, the market for energy efficiency projects will not develop to be of a sufficient volume in the absence of adequate financing.

The following explanatory factors for the problems regarding financing are identified:

- The low investment required in energy efficiency projects do not attract foreign investments
- Energy efficiency projects do not generate a separate revenue scheme – the results are not separately reflected in the balance sheets of companies but appear in the form of reduced energy bills. This is a problem since foreign investors are comfortable with balance sheet financing and energy efficiency companies do not have strong balance sheets
- In the absence of a M&V protocol, the foreign investors are unable to visualise distinct revenue segregation
- ESCOs are yet to grow – the existing are small and do not have a strong balance sheet. Therefore, even guaranteed technical performance by ESCOs do not provide comforts to foreign investors
- Foreign investors have other profitable portfolios. Hence, energy efficiency financing gets relegated to unimportance as they seem to carry high financial risks

Various types of business mechanisms have been pursued, albeit sporadically, in India including consumer lease financing (CFL, boiler,

cogeneration, etc.) and ESCOs (CFL in AES, paper mill). Vendor financing has also been tried in the form of the capacitor installation program of MSEB.

*4.2.4 Brazilian national climate change activities - briefly introduced by **Professor La Rovere**, COPPE, Federal University of Rio de Janeiro*

There are several examples of development programmes in Brazil that illustrates how combined sustainable development and climate change programmes can work in practice, where one of the most widely discussed is the Ethanol transport fuel programme.

The potential for combined sustainable development policies and climate change in the case of Brazil can be tapped through the introduction of a number of institutional measures and regulatory frameworks. Some of the major measures relate to renewable energy programmes, energy efficiency, and to integrating environmental policies into energy market liberalisation policies. The same is the case for the transportation sector, where the is a large potential for integrating local air pollution control and energy efficiency and climate change policies in particular in large urban areas. Part of the effort needed to implement these energy and transportation policies will be to engage local states and municipalities.

The Brazilian government has also initiated a large-scale capacity building effort that includes the establishment of a new research programme and a network between various experts and stakeholders in Brazil.

*4.2.5 South African national climate change initiatives - introduced by **Mr. Luboyera**, Director, Global Climate Change and Ozone Layer Protection, Department of Environmental Affairs and Tourism*

In South Africa, the Department of Environmental Affairs and Tourism is the lead agency in directing and formulating the climate change response program. The climate change strategy emphasises that policies should support sustainable development and government priority objectives such as job creation, project evaluation, and national development objectives. Furthermore, priority is given to the participation of other national government departments as well as of the provincial and local government departments, and the participation of non-government stakeholders. Issues such as education and training, establishment of institutions to handle climate change issues, building capacity to handle climate change response actions, and climate change research are high on the agenda. Projects are found both in the area of mitigation and adaptation and emphasis is put on the issues of energy efficiency and renewable energy.

Adaptation and mitigation activities and measures are numerous in different sectors of the South African economy. These measures and activities are summarised in the tables below to illustrate the scope of the mitigation and adaptation efforts in South Africa.

Table 3. Adaptation measures in South Africa by sector

Health sector
- Monitoring and forecasting
- Prevention schemes
- Water supplies

Water resources sector
- Integrated planning (across basins etc)
- Conservation
- New works for water management
- Forecasting and prediction
- Contingency planning
- Education
- Incentives to use less water

Rangeland sector
- Improved monitoring and forecasting for fire and drought
- Herd management
- Land-use change

Agricultural sector
- Management practices
- Land-use changes
- Species switching

Forestry sector
- Temperature tolerant cultivars
- Species switching
- Land use changes

Biodiversity
- Ecosystem management (including plants, animals and marine)
- Inventories and monitoring networks
- Conservation
- Seed banks

Table 4. Examples of mitigation activities in South Africa by sector

Energy sector
- Integrated energy planning (IEP).
- Clean coal technologies.
- Renewable energy sources for both bulk and remote stand alone supply purposes
- (wind, solar, biomass).
- Non-greenhouse gas emitting energy sources (nuclear, hydro).
- Technologies to promote increased efficiency in coal fired power stations.
- Effective demand side management to reduce peak requirements on the system.
- Natural gas (now commercially exploitable in South Africa).

Transport sector
- Reduction of car usage (taxes, incentives, etc).
- Public transport systems incorporating energy efficiency.
- Alternative fuels.
- Electric vehicles.
- Traffic management and mode switching.

Coal mining sector
- Higher extraction ratios.
- Extraction of remnant pillars.
- Improved coal utilisation.
- Removal of emitted methane.
- Catalytic combustion of methane to produce carbon dioxide and water with possible recovery of the generated heat.
- Prevention of spontaneous combustion

Industrial sector
- Cement.
- Ferroalloys.
- Chemicals.
- Pulp and paper.
- Aluminium

Agricultural sector
- Herd optimisation.
- Extending feedlot manure management.
- Avoidance of the burning of agricultural residues.
- Enhanced fire management practices.
- Savannah thickening.
- Afforestation schemes

Waste sector
- Minimisation.
- Methane extraction and use.
- Cleaner production schemes

4.2.6 Sustainable development and climate change: An Eskom perspective – presented by ***Ms. Poulton****, corporate consultant, strategic environment, Eskom, South Africa*

Developing countries need to grow in a sustainable manner whilst meeting developmental and societal needs. In practical terms, the primary objectives of sustainable development in Africa remain eradication of poverty; fulfilment of basic human needs; and sustained economic development. Electricity plays a key role with respect to these objectives, as the five priority areas of the South African energy policy listed below illustrates:

- Increasing access to affordable energy services
- Improving energy governance
- Stimulating economic development
- Managing energy related environmental impacts
- Securing supply through diversity

Some of the main issues in the electricity sector are:

- The trend towards deregulation
- Increasing focus on global climate change and pressure for sustainable energy solutions
- Rising global energy demand
- Shareholder value
- Stakeholder interests (investors, NGOs, government, customers, etc.)
- The long term nature of the sector

South Africa is very vulnerable both in terms of the negative impacts of climate change and response measures. Furthermore, the country is dependant on fossil fuels and coal is a major player. In 2000, Eskom's generation mix was 88.6 percent based on coal.

Eskom pursues a strategy of integrated strategic electricity planning, which is a long term planning process looking at both demand and supply side options, where environmental and other issues are integrated into the process. This strategy is important for sustainability in the long term and for the evaluation of technologies and resource utilisation. On the demand side, prominent options under evaluation include efficient lighting, load management, and virtual power stations. On the supply side, the options include fossil fuel technologies, gas, nuclear, renewables, and hydropower.

The new renewable energy projects can be divided into bulk projects and off grid projects. The first category includes a potential 5-10 wind demonstration plant. A pre-feasibility study has been conducted on a 100 MW solar thermal plant, partly funded by GEF. The latter includes an Eskom/Shell joint venture, where more than 6000 solar home systems have been installed to date. Another major initiative is the efficient lighting initiative, funded by Eskom and GEF with the objective of promoting the penetration of efficient lamps and luminaries into the South African market.

Research, technology, and technological changes will play a critical role in the long-term sustainability and the transfer of appropriate technology can assist developing countries by "leap-frogging" technologies. New and advanced technologies in which to use both non-renewable and renewable resources need to be identified and approved upon. In a developing country context, technologies that increase and strengthen infrastructure are critical and technologies around smaller and distributed energy supply sources need to be identified and researched. Furthermore, low cost energy supply technologies are important. However, to be successful, technology transfer should be build around the following concerns: it must be needs driven, adaptable to local conditions, life cycle management must be carried out, ownership issues must be considered, the technology should be appropriate for specific country needs, the support infrastructure must be in place, there must be alignment with the skills base, and full cost accounting must be carried out.

4.2.7 A business approach on Sustainable development and climate change – introduced by ***Dr. Whang*** *from Samsung in South Korea*

How can sustainable development be framed from a business perspective? In the words of Gro Harlem Brundtland, "Business must be profitable to survive, but it must also face the call to become sustainable to enable us all to survive". Following this, the ideas of limits, sustainability, sufficiency, equity, and efficiency are not barriers or threats, but are guides to a new world.

WBCSD and Samsung as part of this council have identified a number of steps in finding solutions to how business perspectives and sustainable development can be integrated. These steps include developing and applying cleaner technologies and energy efficiency as well as adjusting product portfolios and create incentives for consumers and companies to take actions. Voluntary targets and actions are considered as one of the attractive policy steps, which are expected to support a long-term development of finance and a stable market environment that integrates sustainable development objectives.

The industrial sector of South Korea has made a voluntary agreement with the government that aims at reducing CO_2 emissions with 8% over a five-year period primarily through energy efficiency measures. The reductions are supported by a public fund that support venture firms and technology innovation. The private sector stakeholders and in particularly energy intensive companies are also very active in the national climate change policy dialogue in Korea and one of the major areas of attention is the potential for CDM project finance.

4.3 Discussions

The national presentations initiated many questions and cross-cutting sharing of experiences about how to support the development of an institutional structure that facilitates the implementation of sustainable energy programmes in particular on the specific issues related to implementing end use efficiency improvements. All countries already were in the process of implementing energy savings programmes, but also recognised the difficulties in creating a policy and market environment that created the right incentive structure for local governments, utilities, industries and private consumers to implement the measures. Several barriers were identified including presently low energy prices, thin or fragmented markets, limited and incomplete planning, as well as financial constraints. Furthermore, weak institutional capacity in the form of general educational level, and specific technical skills also constituted a policy barrier.

The existence of many of these barriers also explain why the IPCC on one hand have concluded that potentially is a large potential for climate change mitigation options with negative or small costs, but the costing studies have not completely been able to include all implementation- and barrier removal costs. Improved information about barriers and financial mechanisms, for example based on country studies like the ones discussed in this meeting, are therefore providing very important insights to international climate change policies.

It was recognised that it is import to "bring" leading government bodies that are dealing with general planning and economic issues into the climate change activities and to overcome the current tendency in many countries to consider climate change policies from a rather narrow "environmental management" perspective.

The countries had also experienced some barriers in the identification of international finance that can be used to support combined sustainable development and climate change policy objectives, and it was suggested to consider such alternative mechanisms in relation to specific investment projects in the energy sector and transportation that are considered potentially to have large joint benefits on these policy objectives. It was recognised, that the financial mechanisms embodied in the Kyoto Protocol maybe are to narrow in their scope to finance sustainable development and climate change.

5. Final Conclusions

5.1 Summary of Key Issues of Workshop Discussions

Professor Tom Heller, Senior Research Specialist Kirsten Halsnæs, and Professor Ogunlade Davidson summarised key issues from the workshop discussions as an introduction to the final panel discussion.

First of all, it was recognised that there has been a strong support, endorsement, and agreement among all participants on using sustainable development as a framework for climate change policies, and this agreement is very encouraging for further activities and collaboration. The framework has throughout the workshop discussions been seen as reflecting the needs of the countries and providing a constructive basis for combining local development policies and global climate change policies. The further development and implementation of such a policy framework is logical after the Bonn agreement that in a number of areas, where international climate change policies are linked to sustainable development.

Furthermore, there is a need for new innovative international financial schemes that can support sustainable development investments with large climate change benefits. This is maybe beyond the scope of the UNFCCC, but will maybe be more important than the convention in controlling global GHG emissions. It was several times emphasised in the discussion that capacity building and institutional strengthening in developing countries are needed to implement long-term global strategies.

Several national examples of sustainable development policies with large impacts on climate change were given at the workshop. These include:

- The ethanol programme of Brazil.
- Energy efficiency programmes in China that are part of general economic development strategies.
- Development of natural gas supply through investments in a pipeline project in Shanghai in China.
- Energy efficiency and renewable energy programmes in India that are linked to economic development programmes. Detailed national programmes for forestry, agriculture and land use sectors.
- National development programmes

including climate change policies in South Korea with broad stakeholder participation, and the use of market instruments.
- The South African approach to use sustainable development indicators in relation project evaluations, and the establishment of a national climate change policy strategy that has a comprehensive list of sectoral climate change policy options.
- Detailed GHG inventory and national report to the FCCC developed by Iran.

5.2 Follow-up Action Plans

A number of specific follow up activities to the workshop were suggested, including:

- Increase public awareness of the linkage between sustainable development and climate change
- Enhance cross-exchange of information and experience among developing countries on sustainable development and climate change
- Develop innovative financing mechanisms
- Improve international recognition of developing countries' efforts to address climate change challenges

The national participants as well as the involved organisations all echoed that public awareness, including educational programmes and national stakeholder dialogue are very important and should be part of subsequent activities. Another common conclusion was, that sustainable development and climate change policies should be "moved up" to be an important issue to major government agents including Prime ministers Office, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Planning, Sectoral Ministries, as well as in the business sector. In this way a broader group of national and international stakeholders could collaborate about creating the necessary environment to promote trade and investments to be supported by financial mechanisms and technology transfer.

The workshop initiated a dialogue among major developing countries to exchange views and ideas on their perspectives to address climate change and sustainable development issues. All participants found this forum very useful, and requested more workshops like this with clearly defined themes.

A final conclusion on this enabling environment was that there is a need for a more systematic assessment of the experiences with how different national institutions, market instruments and regulatory frameworks can be used to support the implementation of sustainable development and climate change policies. The case examples presented from China and India and other countries at the meeting could provide a basis for such a study.

5.3 Final Panel Discussions

Dr. Xiadong Wang introduced the final plenary discussion inviting the national government representatives and the business sector representatives to form a panel and evaluate the workshop and to provide ideas for further activities.

All panellists thanked for the very constructive workshop discussion, and found the new framework proposed at the workshop very innovative and useful. They would like to move forward and participate in more activities based on the sustainable development and climate change framework. The **Chinese participant**, for example, said that China will continue to address climate change issues as part of the sustainable development policies and programs. The **India participants** said that sustainable development should be a pre-condition to climate change policies. They both requested more recognition of developing countries' efforts to address climate change challenges, which should be reflected in international documents. The sustainable development and climate change ideas would be brought forward and further discussed at the COP-7 meeting in Marrakech by the participants, as well as in the Business Council Meetings, and in a wider range of climate change and sustainable development activities.

The **country participants** also suggested that it is essential to identify well-defined specific topics for further discussion on the linkages between sustainable development and climate change. In particular, energy efficiency programmes and transportation were suggested

as focal areas. These further discussions should also focus on specific implementation issues and institutional issues. The participants also emphasized the importance for cross-country exchange of policy implementation. There was a strong belief that a further dissemination of the workshop discussions would facilitate progress in global collaboration through linking sustainable development and climate change, and this could for example happen through national workshops, presentations at the WSSD, and via wide distributions of workshop proceedings.

5.4 Closing Remarks

Mrs. Melinda Kimble, Senior Vice-President of the UNF said that it will take long time for a policy regime built on sustainable development and climate change to materialise but it seemed to be a very promising way forward. **Dr. Xiadong Wang** briefly summarized the workshop findings, and warmly thanked the national participants for the strong support.

Finally, **Dr. John M. Christensen** from the UCCEE, on behalf of the organisers, thanked all participants for the active and constructive dialogue that created high expectations about what can be achieved through further collaboration in this area. He mentioned that the UCCEE together with RIVM and a number of experts and institutions currently are in the process of planning a larger program on sustainable development and climate change and promised to stay in close contact with all workshop participants and develop a work plan for further activities in the area.

References

IPCC (2000). *Special Report on Emission Scenarios, Intergovernmental Panel on Climate Change*, Cambridge University Press.

IPCC (2001). *Climate Change 2001: Mitigation, Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change,* Metz, B, Davidson, O, Swart, R, and Pan, J. (eds.), Cambridge University Press.

IPCC (2002). *Climate Change 2001, Synthesis Report*, Cambridge University Press.

Markandya, A. and Halsnæs, K. (eds.) (2002). *Sustainable Development and Climate Change.* Earthscan, forthcoming.

Workshop programme

Wednesday 24 October

9.00 – 10.00	**Registration**	
10.00 – 11.00	**Opening session**	
	Jacqueline Aloisi - UNEP	Opening & welcome
	Melinda Kimble – UN Foundation	UNF perspectives and activities on sustainable development & climate change
	Emilio Lebré La Rovere, UFRJ, Brazil	Rationale for the sustainable development & climate change focus
	John Christensen - UCCEE	Workshop objectives and agenda
11.00 – 15.30	**Session 1: Sustainable Development and Climate Change**	
11.00 – 11.15	Overview presentation:	
	Ogunlade Davidson - EDRC, South Africa	IPCC perspectives on sustainable development and climate change
11.15 – 12.30	Presentations by the FCCC negotiators from all participating countries	
12.30 – 14.00	**Lunch**	
14.00 – 14.30	Presentations by FCCC negotiators, continued.	
14.30 – 15.30	Discussion moderated by John M. Christensen - UCCEE	
15.30 – 16.00	**Coffee Break**	
16.00 – 18.00	**Session 2: National development priorities and environmental implications – Synergies and tradeoffs**	
16.00 – 16.30	Overview presentations:	
	Kirsten Halsnæs, UCCEE, Denmark	IPCC perspectives on the costing aspects of synergies and tradeoffs
	Junfeng Li, ERI, China	China's experience with synergies and tradeoffs between development and energy-environment priorities
16.30 – 17.00	Presentations by national experts from development and energy institutions	
17.00 – 18.00	Discussion moderated by Tom Heller – Stanford University	
19.30 –	**Dinner hosted by UNF**	

Thursday 25 October

9.00 – 11.00	**Session 3: Business sector perspectives on sustainable development & climate change**	
9.00 – 9.30	Overview presentations	
	Challenges and opportunities for business	Jintaek Whang – SGERC, South Korea Wendy Poulton – ESKOM,South Africa
9.30 – 10.00	Presentations by national business sector representatives	
10.00 – 11.00	Discussion moderated by Carlos Suárez - Bariloche	
11.00 – 11.30	**Coffee break**	
11.30 – 12.30	**Key issues from the Sessions and their links to the objectives of the workshop**	
11.30 – 11.50	Sustainable Development and Climate Change	Kirsten Halsnæs – UCCEE, Denmark
11.50 – 12.10	National development priorities and environmental implications – Synergies and tradeoffs	Ogunlade Davidson – EDRC, South Africa
12.10 – 12.30	Business sector perspectives on sustainable development and climate change	Tom Heller – Stanford University, USA
12.30 – 14.00	**Lunch**	
14.00 – 16.00	**Panel discussion**	
16.00 – 17.00	**Closing session**	
	Melinda Kimble	
	National FCCC negotiator	
	John Christensen	

List of participants

Name, Organisation, Country

John M Christensen, UCCEE, Denmark

Kirsten Halsnæs, UCCEE, Denmark

Anne Olhoff, UCCEE, Denmark

Myung-Kyoon Lee, UCCEE, Denmark

Arturo Villavicencio, UCCEE, Denmark

Jacqueline Aloisi de Larderel, UNEP DTIE, France

Mark Radka, UNEP DTIE, France

Xiaodong Wang, UNF, USA

Melinda Kimble, UNF, USA

Bert de Vries, RIVM, The Netherlands

Mukul Sanwal, UNFCC, Germany

Emílio L. La Rovere, Federal University of Rio de Janeiro, Brazil

Thomas C. Heller, Stanford Institute for International Studies, USA

Ogunlade Davidson, Energy and Development Research Centre, University of Cape Town, South Africa

Junfeng Li, Energy Research Institute of State Development Planning Commission, China

Jintaek Whang, Samsung Global Environment Research Center, South Korea

Gao Feng, Treaty and Law Department of the Ministry of Foreign Affairs, China

Jia Guide, Treaty and Law Department of the Ministry of Foreign Affairs, China

Lu Xuedu, Dept. of Rural and Social Development, Ministry of Science and Technology,China

Festus Luboyera, South Africa

Farhana Yamin, FIELD, UK

Mohammad Soltanieh, Department of Environment, Teheran, Iran

Mohammad Salamat, Iran

Carlos Suárez, Institute of Energy Economics, Foundation Bariloche, Argentina

Elliot Diringer, Pew Center on Global Climate Change, USA

Wendy Poulton, ESKOM, South Africa

Shashi Shekhar, Ministry of Power, India

P.V. Jaikrishnan, Ministry of Environment and Forests, India

C. C. C. Viswanath, Ministry of Environment and Forests, India

J.R. Bhatt, Additional Director, Ministry of Environment and Forests, India

Jai-Chul Choi, Counsellor, Korean Mission to OECD

Statement of Mr. Salamat, Chief Negotiator, UNFCCC

The agenda of this workshop which focuses on integrating sustainable development objectives and climate change concerns at national and international levels seems to be quite relevant in light of the current status of the multilateral discussions on these issues. I hope that the presentations and the discussions, which will be made at this workshop, would help advance understanding of some of the aspects of these issues.

Climate Change concerns may only be integrated into the national development strategies of countries if it is viewed from a perspective of sustainable development. It seems that the environmental pillar of sustainable development drew more attention and absorbed more resources of the international community in the aftermath of the Rio Summit, as compared to the other two pillars, that is economic growth and social development, although the global environmental deterioration exacerbated during this period. A number of multilateral environmental agreements have been developed at Rio and since Rio with rather good environmental targets and objectives, yet short of development perspectives and concrete sustainable development visions with necessary means of implementing them. The global climate change process has not been an exception in this regard.

The approaching ten-year review of the Rio Conference-the World Summit on Sustainable Development (WSSD) – is once more providing the international community with an opportunity to highlight the paradigm and concept of sustainable development, which is the most important Rio heritage. This could help ensure that the other two pillars would gain the necessary weight in the global debate. It could also help ensure that that multilateral environmental agreements reached in Bonn in July earlier this year have moved the global climate change debate a significant step forward bearing in mind the very uncertain and cloudy circumstances we were all encountering prior to the Bonn meting. These political accomplishments, historically very crucial as they are, renewed the hope and dynamism in the ongoing multilateral debate on climate change. Their importance is due to the fact that the international community, having succeeded in finishing a job left unfinished in the Hague, ensured to survive a decade-long torturous multilateral process on a global concern.

The Bonn Agreements are equally important from a sustainable development perspective. Because they ensured that the long-awaited development related provisions of the UNFCCC, which were so crucial to developing countries, would be implemented by the new mechanisms and decisions that were adopted in Bonn. These mechanisms include: A comprehensive framework for capacity building in developing countries; Mechanisms for technology transfer; Implementation of Articles 4.8, 4.9 and 3.14; Adaptation; Three new funding arrangements entitled Special climate change, Adaptation and LDCs fund. Developing countries have always been arguing that these provisions of the Convention, which had been left, unimplemented thus far, are development and in fact sustainable development aspects of climate change.

However, much remains to be done. We still need to agree on some of the details of the decisions taken in Bonn. We need, for instance, to agree on modalities for burden-sharing among developed countries of financial resources to be provided by them to the three new funding arrangements established by the Bonn agreements.

As regards to developed countries, the Bonn Agreements are important due to the fact that they accommodated most of the development – in other words – sustainable development – demands of the developing countries, including with regard to the Kyoto Protocol Mechanisms and LULUCF. The notion of cost-effectiveness, which Annex-I parties have been advocating for a long time during the debate has been adequately accommodated in the Agreements, Sinks have been widely included in the Annex-I Parties overall possible measures. No specific cap has been imposed on the three mechanisms – that is CDM, JI and ET. The level

of levy put on CDM projects for adaptation measures is negligible. SINKS in CDM have been included. All these policies were accepted in the Bonn Agreements in response to the long argued economic concerns by Annex-I Parties.

In a nutshell, and generally speaking, the Bonn Agreements have put back climate change issues into their appropriate context, which is sustainable development. Therefore, no attempt in one way or another to change the delicate balance stuck within the Bonn Agreements or to alter the focus of attention drawn at COP-6, Part 2 should be made.

What all parties should endeavour at COP-7 in Marrakech is to complete the development of the legal language for the political agreements reached in Bonn, which would enable Parties to the Convention to commence the process of ratification of the Kyoto Protocol through their domestic procedures.