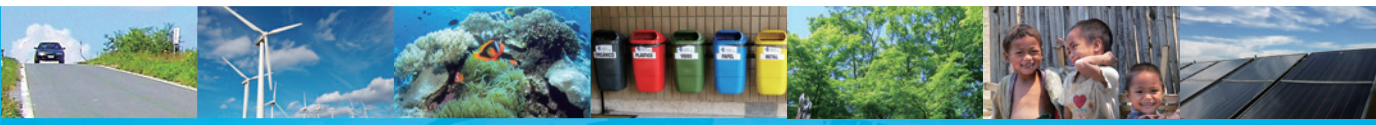
Provisional Version as of October 2009

Forum Report

ISAP 2009

International Forum for Sustainable Asia and the Pacific: ISAP

26 - 27 June 2009



Towards Copenhagen: A New Development Pathway to a Low-Carbon Sustainable Asia and the Pacific

Institute for Global Environmental Strategies

IGES

ISAP2009

International Forum for Sustainable Asia and the Pacific: ISAP

Contents

Event Outline

Raising hot issues in the region

ISAP2009, as the inaugural event, focused on "Towards Copenhagen: A New Development Pathway to a Low-Carbon Sustainable Asia and the Pacific," raising hot issues such as low-carbon economy, biodiversity, green consumption, REDD, biofuels, co-benefits and capacity development. The forum provided a platform to share the latest research results and actively discuss challenges and potential measures.

500 participants from diverse sectors

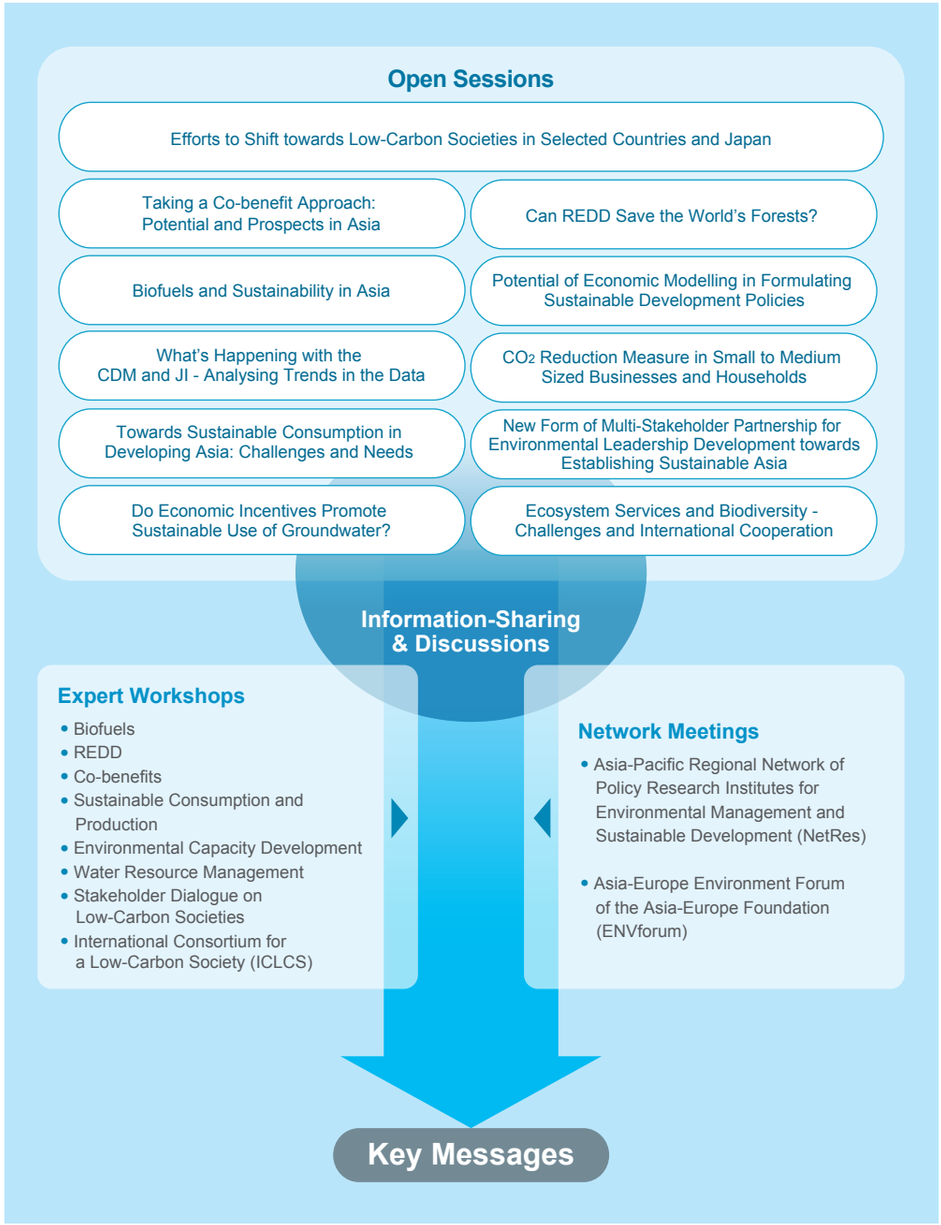
ISAP2009 held eleven Open Sessions, eight Expert Workshops and two Network Meetings with about 500 participants including more than 100 individuals from overseas for two days in total. Front-line experts and representatives from businesses, international organisations, governments and NGOs attended to discuss issues from diverse perspectives.

Key Messages to promote the sustainability agenda

Based on the presentations and discussions at ISAP2009, insightful observations and innovative suggestions were extracted from each session as "Key Messages". These key messages will convey the directions towards a new path to low-carbon development and promote the sustainable agenda in the region.

Date	26 - 27 June 2009 (Fri./Sat.)
Venue	Shonan Village Center and IGES Hayama Headquarters (Hayama, Kanagawa, Japan)
Organiser	Institute for Global Environmental Strategies (IGES)
Supporters	Ministry of the Environment, Japan / Kanagawa Prefectural Government / Hyogo Prefectural Government / Kitakyushu City / Hayama Town / National Institute for Environmental Studies (NIES) / United Nations Environment Programme/Regional Office for Asia and the Pacific (UNEP/ROAP) / United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) / United Nations University (UNU) / Asian Institute of Technology (AIT) / The Energy and Resources Institute (TERI)
Number of Participants	26 June: 313 persons, 27 June: 219 persons (500 persons over two days in total)

ISAP 2009 at a glance



Executive Summary

1 Open Sessions

Opening Session

The session began with opening remarks from Prof. Hironori Hamanaka (Chair of the Board of Directors, IGES), followed by remarks from Mr. Kazuhiko Takemoto (Vice-Minister for Global Environmental Affairs, Ministry of the Environment of Japan) and Mr. Yoshihiro Ono (Vice-Governor of Kanagawa Prefecture, Japan). Moderated by Ms. Charmine Koda, a journalist and Member of Board of Directors, IGES, there were then two keynote speeches: Prof. Nay Htun (State University of New York, Stony Brook) spoke about a "Low-Carbon Society for Sustainable Asia and the Pacific" and Prof. Peter Pearson (Director, Imperial College, Centre for Energy Policy & Technology (ICEPT)) presented his views on "Research Frontiers for Low-Carbon Energy Systems: Some Reflections on UK Transition Pathways." *1 Prof. Htun pointed out that the Asia-Pacific region plays a key role in developing sustainable societies and illustrated three milestones of great transformations to achieve this: delivery of an effective and relevant global agreement on climate change, low-carbon infrastructure, and tropical forest conservation and restoration. Prof. Pearson in his keynote speech highlighted the dangers of designing a future by following only one country and expanded on the necessity to learn from the experiences of a number of countries, including the UK, in the development of a low-carbon society. In addition, Prof. Pearson gave suggestions on the importance of simultaneously creating visions, strategies, and policies for low-carbon energy systems.

The first panel session featured a discussion on "Efforts to Shift towards Low-Carbon Societies in Selected Countries." Dr. Eric Kaler (Provost and Senior Vice President for Academic Administration, State University of New York, Stony Brook) pointed out that, with the Obama Administration taking office, there has been a shift in US policies towards climate change issues that are based on science and, in particular, on energy policies. Dr. Kaler provided some information about "Lighting the Way: Toward a Sustainable Energy Future," an InterAcademy Council (IAC) report funded by China and Brazil, which illustrates the framework of the scientific consensus for global energy development. Prof. Xia Kunbao (Member of the Board of Directors and Advisor, All-China Environment Federation) delivered a report on the importance attached to the development of low-carbon economies by China and the development of national laws, enactment of energy consumption reduction plans, establishment of research institutions, and cooperation with international agencies to achieve low-carbon development.

The next panellist, Dr. Ritu Mathur (Associate Director, Energy Environment Policy, The Energy and Resources Institute (TERI)), expounded on the National Action Plan and other measures taken by the Indian Government which promotes development and use of solar energy, improving energy efficiency and reforming energy markets. She also emphasised the importance of cooperation with the business sector and communities, and raised issues that must be addressed such as technology transfer, finance and leveraging. Dr. Hoi-seong Jeong (Former President, Korean Environment Institute and President, Korean Environmental Policy and Administration Society) spoke on the Korean Government's vision of low-carbon economies and green growth to promote synergy between the environment and growth. Under this vision, he stressed the importance of responding to climate change, energy self-reliance, the creation of a new paradigm for national development, and improving environmental conditions and the quality of life. Dr. Shuzo Nishioka (Senior Research Advisor, IGES and Senior Visiting Researcher, National Institute for Environmental Studies (NIES))

explained that Japan has the technological potential to reduce its CO_2 emissions by 70% compared to 1990 levels, while continuing to satisfy projected energy demand. In addition, Dr. Nishioka spoke about mainstreaming low-carbon societies in urban development based on the idea that a large number of Asian countries are in a good position to achieve low-carbon development. Dr. Nishioka also gave an introduction on the International Research Network for Low Carbon Societies (LCS-RNet)*2 , which was established in April 2009.

During the second panel discussion, the representatives of key stakeholders in Japan exchanged ideas and opinions from their respective positions on the topic of "Efforts to Shift towards Low-Carbon Societies in Japan." Mr. Hiroaki Takiguchi, Director, Office of International Strategy on Climate Change, Climate Change Policy Division, Ministry of the Environment, Japan introduced the three principles identified when determining Japan's mid-term target of a 15% reduction of GHG emissions from the 2005 levels by 2020 and illustrated four pillars of the government's role to facilitate a shift to a low-carbon society (institutional arrangements, intangible assets, tangible assets, and nature conservation). Dr. Mikiko Kainuma (National Institute for Environmental Studies (NIES)) indicated the strategic approach required to achieve a 70% reduction of the 1990 levels by 2050, and pointed out the importance of improving public awareness to realise a low-carbon society.

Mr. Reiji Hitsumoto of the City of Kitakyushu introduced the city's approach in simultaneously improving the environment from pollution and attaining economic growth. Mr. Masayuki Sasanouchi of Toyota Motor Corporation spoke about the perspective and ideas of businesses towards a low-carbon society, including the necessity of technological innovation in order to achieve emission reductions. Mr. Tetsunari Iida of the Institute for Sustainable Energy Policies (ISEP) outlined Japan's environmental and energy policies and suggested a paradigm shift in today's environmental and energy policies in order for Japan to meaningfully achieve reduction targets.

Thematic Sessions

In the afternoon on the first day of ISAP, a series of thematic sessions was held to discuss major topics facing Asia and the Pacific today.

The climate change session pointed out that co-benefit approaches were essential for formulating sustainable development policies in Asia where developmental needs such as improvements of air

pollution in urban areas, energy security and efforts to reduce GHG emissions are intimately linked to each other.

The forest conservation session, focussing on the issue of REDD (Reducing Emissions from Deforestation and Forest Degradation), discussed the latest progress in international negotiations, national preparatory frameworks for REDD in different countries, the risk of implementing REDD in the absence of appropriate policies and its future prospects.

The market mechanism session included reports on the current status of the Clean Development Mechanism (CDM) and Joint Implementation (JI), as well as the prospects of both mechanisms based upon the analysis utilising the CDM and JI database, developed by IGES. Information was also shared with participants on the main issues and current status in international negotiations under the United Nations Framework Convention on Climate Change (UNFCCC).

The economic analysis session featured discussions on the latest research outputs of IGES, such as environmental and regional cooperation policies in Asia that used regional environmental policy impact assessment models to achieve poverty reduction and reduce negative effects on the environment; impact of cross-border energy infrastructure investment on the regional environment, society and climate change; and accounting national emissions embodied in international trade.

The session on biofuels emphasised that it is important to integrate biofuel policies with energy, agriculture and other policies in Asia, while considering the environmental and socio-economic profiles of different countries in the region.

The session on business and the environment introduced a new initiative called, the “Uchi-Eco Diagnosis(UCHI-ECO)” , which consults on analysis of factors and reduction measures for CO_2 emissions in households and small- and medium-sized businesses. Discussions were also held during the session on effective measures for CO_2 reductions by diverse stakeholders such as local governments and NGOs.

The sustainable consumption and production session suggested necessary approaches that include product design, consumption patterns and product lifecycles in order to reduce the impact on ecosystems from a rapid decrease in natural resources and increased economic activity. In this context, the session also pointed out that promotion of research on identifying sustainable production and consumption patterns and information sharing in the region would be vital, as well as research on waste management and resource efficiency.

The session on capacity development and education pointed out that capacity development in the environmental field -- in particular, environmental leadership to establish a low-carbon society -- is a pressing need to facilitate action to address global environmental problems. The session also introduced the activities of the preparatory meeting of the “Environmental Consortium for Leadership Development (EcoLeaD)” that was initiated by the Ministry of the Environment, Japan in March 2009, as well as information on the environmental leadership development activities being carried out in Japan, Thailand, and China in cooperation with industries, academia and the public and private sectors.

The freshwater session shared information about case studies in a few major cities in Asia that have implemented projects on the effects of groundwater conservation using economic incentives, as well as actions taken in China, Australia and India. In addition, the session reported that IGES had been identified as the hub organisation in the area of groundwater management for the Asia-Pacific Water Forum’s network of regional knowledge hubs.

In the session for biodiversity, the challenges and international cooperation towards the 10th session of the Conference of the Parties to the Convention on Biological Diversity (CBD/COP10) in Nagoya in 2010 were introduced by the Ministry of the Environment, Japan. The presentations particularly stressed the needs for further support and actions for achieving the Convention’s objectives.

2 Expert Workshops

ISAP also organised eight expert workshops in parallel with the open sessions. In the workshops, an in-depth meeting was held with the speakers of open forums to discuss frankly key issues confronting the region based mainly upon IGES’s research. At the workshop on “Stakeholder Dialogue on Low-Carbon Societies,” researchers discussed the need to share with policy-makers a clear and practical concept to facilitate the shift towards a low-carbon society from a cross-cutting perspective. The sessions also had an exchange of views on the key role played by LCS-RNet, which was established in April 2009 to promote cooperative research mechanisms and appropriate policies to share information. An expert workshop on “Multi-stakeholder Partnerships for Environmental Capacity Development towards Establishing a Low-Carbon Society” was also organised with discussions on the different approaches and initiatives for the capacity development of environmental leaders for sustainable development in Japan, Thailand and China.

3 Network Meetings

The following network meetings were also organised: International Workshop on “Innovation in policy and field actions for ecosystem management and biodiversity conservation” for the Asia-Pacific Forum for Environment and Development (APFED)*3, of which IGES is the secretariat, and the Asia-Europe Environmental Forum (ENVforum)*4 7th Round Table. Both meetings were held with an outlook towards CBD/COP10 to be held in Nagoya in 2010, and discussed “Ecosystem Services and Biodiversity”. At ENVforum, a scenario workshop was held to familiarise participants with the scenario analysis techniques used in the Millennium Ecosystem Assessment. The ENV forum discussed appropriate frameworks in COP10, and the necessity of creating inclusive policy approaches and an international cooperation mechanism at the national and international levels.

4 The Way Forward to ISAP2010

Participants held discussions and shared information on three timely topics drawing on issues including the outcomes of IGES’s research: “low-carbon development,” “sustainable consumption and production,” and “biodiversity.” In addition, through the expert workshops and network meetings held in parallel with open sessions, participants could identify future directions of research for the region and strengthen linkages with people from various fields. Participants commented that they were also able to exchange information along a wide-range of disciplines on global environmental issues, and at the expert workshops in particular, they were able to step in and listen to discussions. Invitees voiced their expectations that in the future, ISAP will become a global environmental forum for the Asia-Pacific region. It is hoped that ISAP2010 will further deepen discussions on key policy issues facing the Asia-Pacific region, attracting even more extensive participation of various stakeholders not only in Japan but also in other countries.

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*1 The keynote speeches and panel discussion at the opening session were carried out as part of a symposium on the International Research Network for Low Carbon Societies (LCS-RNet), in which IGES is participating.

*2 International Research Network for Low Carbon Societies (LCS-RNet): This is a research network that was established to promote research cooperation and information exchange to establish a vision for the creation of a low-carbon society as follow-up to the G8 Kobe Environmental Ministers’ Meeting in May 2008.

*3 Commissioned by the Ministry of the Environment, Japan

*4 Asia-Europe Environmental Forum: A programme established by the Asia-Europe Foundation, which was established at the Asia-Europe Meeting in order to promote cooperation between Asia and Europe. The programme carries out policy dialogues and trainings for various stakeholders involved in the environmental field in Asia and Europe.

Opening Session

Opening Remarks:

Prof. Hironori Hamanaka, Chair of the Board of Directors, IGES

Prof. Hamanaka opened the session by saying that since its inception in 1998, IGES has been conducting strategic, innovative and pragmatic research on policies and practical solutions to support sustainable development, particularly in Asia and the Pacific, with a view to making research results applicable to actual policy-making. Having celebrated its 10th Anniversary last year, IGES must now explore, in collaboration with its stakeholders, ways for better achieving its mission to contribute to international community, particularly Asia and the Pacific.

Low Carbon Society (LCS) - Looking towards achieving significant GHG emission reductions by 2020, Japan needs to develop and deploy on a large scale low carbon technologies, and to move toward a transition to a low-carbon society. Important point to be noted here is that in several developing countries in Asia low-carbon development are being seriously pursued, not only by governments but also by business, universities and research institutions. In this symposium, we would like to take up the issue of LCS, and consider how government, business and academia can work together to transform social structures towards a low-carbon society and achieve significant reductions of GHGs.

Sustainable Consumption and Production (SCP) – In view of the rapid growth of wastes and depletion of natural resources as industrialisation and urbanisation proceed in Asia and the Pacific, we would like to deepen discussion on what actions should be taken to achieve SCP, bearing in mind the social, economic and cultural diversity of the region. Also, we would like to discuss environmental leadership development toward establishing LCS.

Loss of Biodiversity – The question is whether it can be slowed. With the upcoming COP10, the Convention on Biological Diversity in Nagoya in 2010, we would like to have discussions on actions to fill the gaps between policies to slow the loss of biodiversity and their actual performance, as well as on international cooperation to be pursued for this purpose.

Introducing the above issues which will be covered in related sessions of ISAP meeting, Prof. Hamanaka asked participants to actively participate in discussions, and hoped that they would take this opportunity to enhance partnerships and build networks among themselves.

Guest Remarks 1:

Mr. Kazuhiko Takemoto,

Vice Minister for Global Environmental Affairs, Ministry of the Environment, Japan

Mr. Takemoto offered his congratulations to IGES, which celebrated its 10th anniversary last year. It is expected that ISAP would be a trigger to take IGES into the next decade. The Ministry of the Environment of Japan, Kanagawa Prefecture, UN Environment Programme, and many other institutions have been supporting IGES and he hoped that this support would continue into the future.

He stated that climate change, which is one of the major themes of the forum, is the most critical issue the world faces today. The Japanese government has published its cabinet decision on an action plan for a Low Carbon Society (LCS) to include concrete measures such as green tax system, innovative technology development and its diffusion, as well as promotion of actions by individuals such as implementation of changes in business/life style. This can be marked as the first step towards an LCS.

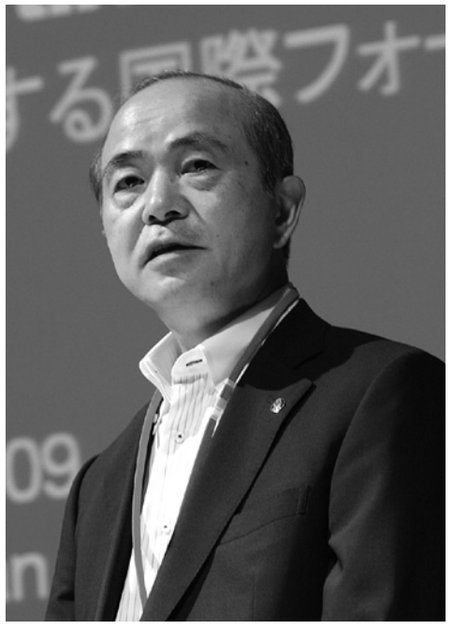
In consideration of an international target to halve GHG emissions on global scale by 2050, the Aso administration announced Japanese mid-term targets in June, which showed Japan's commitment to make every efforts to take the lead in a low-carbon revolution. Japan will also continue contributing to reduce emissions by transferring its advanced energy-saving and environmental technologies to developing countries whose efforts are to be another key to solve climate change.

Biodiversity is another main theme of this forum. Japan has committed itself to the success of COP10 of Convention on Biodiversity. The enhancement of conservation and sustainable use of biodiversity must be given priority across the whole world. Possible measures and international cooperation to face this issue are expected to be discussed in the forum.

Thus, focussing on the hot agenda including initiatives towards a LCS, co-benefit approach, forest sinks and biodiversity, the forum is hoping to provide the findings and opinions open to the public through deep discussions among relevant experts and researchers.

Guest Remarks 2:

Mr. Yoshihiro Ono, Vice-Governor of Kanagawa Prefecture



Mr. Ono welcomed participants to Kanagawa, the prefecture that won out in the competition to host IGES in the Shonan International Village. Since then, Kanagawa has extended its contribution to the global environment through supporting IGES.

Kanagawa launched its Cool Renaissance campaign in January 2008 aiming for GHG emissions reduction, and has put in place initiatives for 13 leading projects, including promotion of lifestyle/business style change and Eco-Drive to encourage drivers to be more eco-friendly. The promotion of Electric Vehicles (EV) is also one of the projects. In collaboration with industry, academia, and government, Kanagawa has put forward the EV Diffusion Promotion Policy which aims to have 3,000 units on the road within about 5 years after EVs become commercially available. There are generous financial support measures offered, including subsidy of JPY700,000 per unit by the prefectural government that is in addition to the one provided by the central government, as well as tax benefits and discounts for parking fees and highway fees. Kanagawa has also set up subsidy schemes for households to introduce solar power equipments, which support JPY35,000 per kilowatt up to a maximum of JPY120,000 in total, in addition to the one from the municipalities.

Kanagawa Prefecture is also involved in international collaboration to promote solar rechargeable lanterns in India, with a project called “Lighting a Billion Lives” launched by Dr. Rajendra Pachauri, Chair of the IPCC. Contributions have been offered from local companies, and lanterns have already been sent to India.

In these ways, Kanagawa promotes diverse measures against global warming showing itself as an environmentally advanced prefecture.

GHGs emitted in Asia and the Pacific have global effects. Asia Pacific countries must cooperate to show the pathway to a Low Carbon Society and Sustainable Development. ISAP is expected to be a platform for knowledge sharing for these issues.

Keynote Speeches:

Moderator: Ms. Charmine Koda, Journalist

Keynote Speech 1:

Low-Carbon Society for Sustainable Asia and the Pacific

Prof. Nay Htun,
State University of New York, Stony Brook

Prof. Htun started by stating that achieving a sustainable Asia-Pacific will significantly contribute to global sustainability. The context, parameters and the understanding of sustainability and sustainable development is expanding. It can consist of large areas such as energy, environment (biodiversity, water, soil and forest), economic aspects and ethical/societal determinants. Climate change is at the very centre of sustainability and could be seen as the mother of all changes.

There are many telling indicators of diversity, complexity, vulnerabilities, challenges and opportunities in the Asia-Pacific region. For example, the region has a large population, coastal mega-cities, as well as having the most island states, most rainforests etc. Particularly in the Asia-Pacific region, there are two very important indicators - a population under 15 years of age (with high expectations for sustainable livelihoods, systems, education and healthcare) and an ageing population, which has experience and knowledge, but is also very vulnerable to climate change. All these indicators and more will be affected by climate change and how we use or do not use energy. Within the expanding impacts of climate change, the role of carbon is key.

Increasing resource energy efficiency and productivity is extremely important. He introduced the McKinsey Global Institute Report “The Climate Challenge – the fierce urgency of now” – a report from the symposium by the Royal Society of London, with Nobel Laureates, experts and US Energy Secretary. The report mentioned that by 2020 there needs to be a 10-fold rise in economic output for every tonne of GHG emitted. The report believes this rise is manageable in terms of cost and benefit (similar to the Stern Review estimates). It is well worth investing to gain more energy productivity, and the report urges governments at all levels as well as the scientific community, to join with business and civil society to seize hold of this historic opportunity to transform our carbon-intensive economies into sustainable and equitable systems.

There are three milestones of great transformation: 1) delivering an effective and just global agreement on climate change (at COP15 in Copenhagen, at least as a step in the process), 2)

delivering a low-carbon infrastructure, and 3) delivering tropical forest protection, conservation and restoration. Without effective management and control of tropical deforestation, there will be no management and control of climate change.

Transforming system efficiency and productivity must be the next great wave. Instead of taxing labour, we must look at how to promote resource productivity. We need to focus on sectors but must go beyond tinkering with sectors. We need to look at how to systemically transform systems. The ecosystem, transportation and infrastructure system, built environment system must all be looked at in an integrated manner.

A report by the Center for American Progress Economic Plan for the Next Administration (in 2007) says that there needs to be major transformation in increasing vehicle fuel efficiency, boosting production and availability of low-carbon alternative fuels and investing in low-carbon transportation infrastructure. It has been called a carbon revolution, and history and economics give confidence that this can be done.

The top five priorities which represent a large share of the opportunities to curb global energy demand and CO_2 emissions include; new industrial capacity to best practice in China, replacement of least efficient power generation capacity globally, global standards for new buildings in China, improvement of US residential energy efficiency, removal of road transportation subsidies – these "low hanging fruits" can be added up and show how to reduce energy demand and where CO_2 emissions reduction can come from. There needs to be a common understanding, not only in the US and OECD countries, but also China, India and many other countries in the Asia-Pacific region. There has been call for a Global Green Deal, after the recent financial crisis which can be seen as an opportunity for systematic innovation and revolution. Some examples are social conscience building, moving in 10 to 15 years towards an equal civilisation, long-term goals on different pathways with different actions, many of which are being implemented already.

The transformation of industry would mean restructuring, technology upgrading, energy saving and pollution abatement, and phasing out outdated capacity of production. Some of these concepts lead a paradigm change and the expanding context of sustainability. We need more of the 3R to add up 4th R – "Rethink" the system. This will lead to revolution, transformation and innovation.

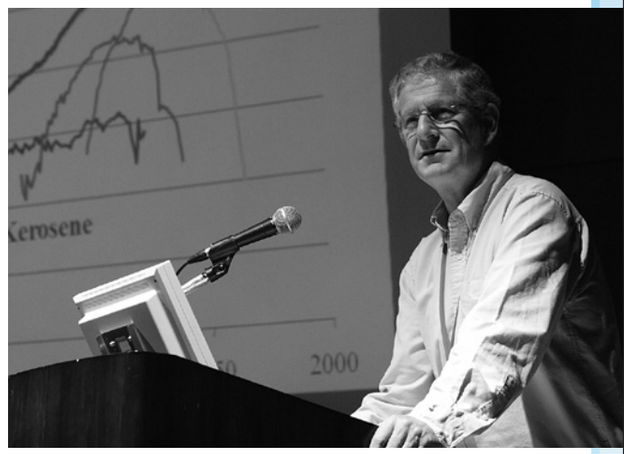
In the Asia-Pacific region (and in other regions), a low-carbon society is linked to a sustained society on environmental, economical and social levels, and is a platform for a more secured society.

In conclusion, Prof. Htun stated that we must think beyond the current revolution. The first revolution was the Industrial Revolution. We are now in the second revolution, the Carbon or Green Revolution, and we are moving towards a third revolution, the Bio Revolution. The diverse, dynamic Asia-Pacific region plays an important role in the carbon revolution.

Keynote Speech 2:

Research Frontiers for Low-Carbon Energy Systems: Some Reflections on UK Transition Pathways

Prof. Peter Pearson,
Director, Imperial College, Centre for Energy Policy and Technology



Prof. Pearson explained the key challenges for the UK pathways, based on the study of the UK's history of transitions, although he gave caution to the audience not to presume that other countries would follow the example of a single country.

Some key research and policy challenges from a UK perspective are: Can we create strategies for an energy system that is low-carbon, resilient, just and affordable? It is necessary to aim to do all three of these things at once. Can we build a low-carbon energy system that can assist in recovery from the credit crunch? A number of technologies that we want for a LC future system cannot immediately be rolled out to provide jobs that the economic recovery requires. Can we learn from past transitions and policies? Can we develop and deliver better technologies on both supply and demand side? Can we understand and affect the changing behaviour of key energy system actors? There needs to be a balance of the market, government policy and intervention, and actions by people.

Looking back the history of energy transitions in the UK, from the 16th century to the 19th century, Britain went from a traditional agricultural economy with limited flows of energy, into a new regime using fossil fuel stock (coal) for bigger energy flows, along with new innovations and other institutional, social and political changes. In the 18th century, coal and new steam technologies (beam engines, rotary steam engines) emerged. Steam power assisted in the UK development and diffusion of technology, due to advanced mobility (the engines could be moved to where they were needed) and efficiency. Thus the factory system was developed. Railways and ships developed national and international transport and markets. The growing energy needs along with this change were satisfied with the use of coal, which peaked in the 1930s. Then, coal use declined (due to concerns about resource depletion), to be replaced with petroleum. Prices matter with an inverse relationship between energy intensity (rising trend) and real energy prices (downward trend).

New technology diffusion took time to develop, for example electric light took about 40 years to become economically competitive compared to gas. It can take time for the benefits to emerge. Modern transitions can be much faster than historical ones, however, it still takes time to build new infrastructure, particularly in mature industrial societies, to overcome the lock-in situation of older technologies and turn over the old capital stock. The benefits of the energy system with lighting is an example, where costs have been lowered and quality of services have increased over several centuries, moving from the use of candle light with dirty tallow, animal fat and whale oil, to gas light, kerosene, up to the dominant electric light. This meant a rise in the quality of life. Energy innovations

have profound effects on human development and welfare. However, there can be inertia in the systems, with first mover advantage in carbon-based energy which can lead to path dependence, e.g. textile industries in UK were the first to adopt steam, but were the last to adopt electricity.

Regarding the response to the costs of energy transition, such as health problems from pollution and acidification of the air, the UK was slow to act, but eventually there was the Clean Air Act in 1956. As more recently in 2008, the UK created a new Department to combine Energy and Climate Change issues, and has legally binding GHG target of 80% by 2050. However, there is evidence that government policy can make a difference.

What the future is for low-carbon energy systems? Previous revolutions were about manufacturing – textiles, iron and steam in 18th century, and then in the 19th century – electricity, chemicals, petroleum and mass production. Improved technology, the combination of energy and information and communication technologies e.g. in smart grids, might help break the link between energy services, fuel demands and emissions. It could help enhance macro level productivity. We might see energy and Information and Communication Technology (ICT) as General Purpose Technologies (GPT) that can take us to another industrial revolution. GPT have two key features such as technological dynamism (efficiency and low costs), and innovational complementarities (to find new ways to use the technologies). However it takes time to raise productivity so patience is needed.

UK Energy Research Centre is an interdisciplinary, independent virtual centre spread across the UK. One of its major achievements is the Energy 2050 project. The project focused on two goals– firstly, an 80% cut in emissions by 2050 and ensuring that energy is delivered reliably, and secondly, trade-offs. The messages from the project report were that a resilient LC UK energy system is technically and economically feasible at an affordable cost. A key trade-off is between reduced demand or decarbonisation on the supply side. Although new and improved technologies are vital, there needs to be more R&D investment with a balance between the private and public sectors. Technology take-up depends on policy and consumer behaviour.

Lastly, citing transition pathways to a low-carbon energy system focusing on electricity, Prof. Pearson explained how patterns of governance shift balance in the triangle formed by actors in government, liberalised markets and civil society. Civil actions can in fact change society from the bottom up. Perspectives on energy system transitions involve interactions for example, between fuels and energy converting technologies, between infrastructures, environment and most importantly, people that must require more focus than fuels and technologies.

Questions for Speakers:

Ms. Charmine Koda, as a moderator, posted the question - “Given the diverse aspects of Asia and the Pacific, can low-carbon be endorsed by the region? Is the urgency shared by all countries?”

Prof. Htun commented that the Asia-Pacific region recognises the urgency. The general public knows, for example, that there is something happening with the weather, but the public is not sure what it can do, or if it is responsible. “Low-carbon” is understandable by simple methodologies such as “switch off the light”.

As far as giving advice to Asia, Prof. Pearson pointed out that there was a danger of oversimplifying the energy challenge vision. There should be an emphasis on resilience and justice of the system.

Everyone has to pay – we all need to recognise the resource impacts and social/environmental costs. Internationally, industrialised countries can offer assistance. However, each country in the region will have to find its own perspective with regards to LCS.

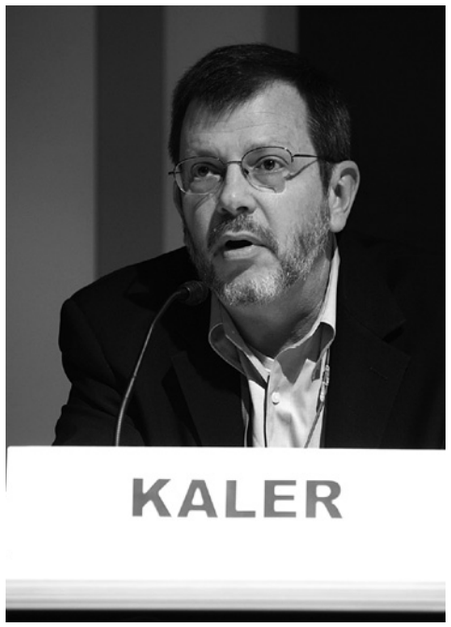
Panel Session 1:

Efforts to Shift towards Low-Carbon Societies in Selected Countries

Moderator: Ms. Charmine Koda, Journalist

Efforts to Shift towards Low-Carbon Societies in Selected Countries

Dr. Eric Kaler,
Provost and Senior Vice President for Academic Administration,
State University of New York, Stony Brook



Dr. Kaler started by pointing out that US President Obama has brought a dramatically new way of looking at climate change and there is now a new emphasis on science-based analysis and policy, specifically on energy policies include energy and greenhouse gases (GHGs) with cap and trade, clean coal technologies, and aggressive and realistic fuel efficiency standards. President Obama pushed through a stimulus package in response to the credit crisis, including energy savings, smart grid technologies, renewables development, and investment on clean energy technologies and a large budget on research.

A report called “Lighting the way - towards a sustainable energy future”, funded by Brazil and China, and chaired by US Energy Secretary Steven Chu identified several conclusions as follow.

- Meeting the basic energy needs of the poorest people is a moral and social imperative.
- Energy efficiency must be improved and the carbon intensity of the world economy must be reduced.
- Technologies for capturing and sequestering carbon is important for cost-effective management
- Competition for oil etc. increases geopolitical tensions.
- Nuclear power, renewables and biofuels are important ways to address energy shortfalls.
- Cost-effective storage and energy carriers must be developed.
- The science and technology community has a critical role together with the public to reduce carbon footprint.

Low-Carbon Development in China

Prof. Xia Kunbao,
Member of the Board of Directors and Advisor, All-China Environment Federation

Prof. Xia pointed that low-carbon (LC) development is a new concept in China, but has now got the attention of the government and general public. China has two laws related to low-carbon societies (LCS) to promote cleaner production and to promote a circular economy. There is also a National Climate Change Program implemented in 2007, introducing policies and measures to address climate change and contribute to the development of LCS. This has been implemented over the past two years with fairly good results. There is also government plans to reduce energy consumption, increase renewable and increase forest cover. He introduced research and new institutions on LCS. China is participating in UNFCCC, such as CDM projects, and willing to cooperate with other countries.

Efforts to Shift towards Low-Carbon Societies (LCS) in India

Dr. Ritu Mathur,
Associate Director, The Energy and Resources Institute (TERI)

Dr. Mathur presented on efforts to shift towards LCS in India. She set the context for India in terms of its unique social, economic and development dimensions of sustainable development and climate change issues. Because of stress factors and the vulnerability of the population, many are deprived of basic facilities and amenities (electricity, water etc.). Energy intensity and the human development index are closely related and energy needs must be met sustainably.

India’s National Action Plan on Climate Change with eight missions relating to mitigation and adaptation sets out priority areas in addressing climate change issues. There have also been several programmes and policies from the viewpoint of development but with climate co-benefits and reduced energy intensity across entire energy flow.

Various initiatives including Lighting a Billion Lives (LaBL), and corporate efforts to contribute to solar power development, improving R&D, technology provision to address LC options in India. Communities are also responding with examples of clean and efficient fuel use, markets for clean end-use products, and green buildings. So there are actions not only by government, but by businesses and individuals.

In terms of international collaborative actions, India has a large share of CDM projects in renewable and energy efficiency. India is a partner of the Asia Pacific Partnership on Clean Development and Climate, to promote development, deployment and transfer of clean and efficient technologies. Partnerships of about 20 cases are mainly public-private partnership. There are still barriers to the huge challenges – technical transfer and absorption, financial issues, implementation models and R&D.

Dr. Mathur stressed a need for an early agreement on post 2012 regime to avoid the gap between the first and further commitment periods to motivate climate change and development co-benefit activities, and bring about investment in clean energy. She looks forward to international cooperation on facilitating technology and financial flows.

Low-Carbon Economy and Green Growth in Korea

Dr. Hoi-seong Jeong,
Former President, Korea Environment Institute;
President, Korea Environmental Policy and Administration Society

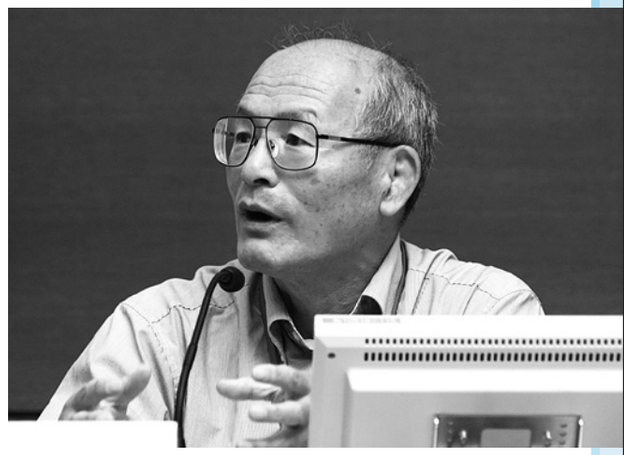
Dr. Jeong presented on low-carbon economy and green growth in Korea. The current government announced its vision on low-carbon green growth in 2008. There needs to be synergic development between environment and growth, in order to separate economic growth and environmental degradation, to formulate a grand vision (incorporating energy-environment issues, green job creation and a more competitive national economy, and land management and life style change) and to develop and share consensus among stakeholders.

There are several strategies and major policy tasks, including responding to climate change and becoming self-reliant in energy, creating a new motivations for national development (development of green technologies and industries etc.) and improving the environmental conditions and the quality of life.

Introducing the episode of controversies and disputes over the construction project of canals for GHG mitigation and a river water quality, he stressed the difficulties and importance in setting strategies, means and achievements.

Efforts to Shift towards Low-Carbon Society: Japan

Dr. Shuzo Nishioka,
Senior Research Advisor, IGES; Senior Visiting Researcher, National Institute for Environmental Studies (NIES)



Dr. Nishioka presented the history of LCS related policies in Japan from 2007 to the current time. In Japan, in recognising LC is not only a matter of the economy, Prime Minister Fukuda used the terminology of Low Carbon 'Society'. Setting up the International Research Network for Low Carbon Societies (LCS-RNet) was proposed and accepted at G8 Environment Ministers Meeting in Kobe, with IGES named as the secretariat. In 2009, Prime Minister Aso introduced the Low Carbon Revolution to recover from the current financial crisis, and then in June, he announced Japanese Mid-term target. So Japan has a good start towards COP15.

In Japan, research supports these policy decisions, for example, the report of the National Institute for Environmental Studies (NIES) showing the possibility to reduce CO_2 emission by 70% by 2050. It also proposes that Japan needs technological, industrial, infrastructure and social innovations to achieve the potential reductions. In evaluating options for mid-term targets, six levels of reduction targets using the integrated assessment models were proposed and discussed. The Prime Minister then decided on its target level based on this evaluation process.

Research has just begun in collaboration amongst IGES and other research institutions on whether Asia is in a good position to shift to LCS, with the research hypothesis of positive answer by the application of leapfrogging (with low-carbon technologies).

He then sets out the objective of LCS-RNet with the value-added of a good information exchange. Research faces a challenge, because the society which we are aiming for is quite different from the high energy consuming societies of the industrial revolution. There needs to be a forum to promote understanding of LCS dialogues among researchers, society and industries. Therefore the LCS-RNet was proposed by G8 Environment Ministers Meeting and thus with a good connection between policy and research. There are already ten research institutes from six countries in LCS-RNet with IGES serving as the Secretariat. In Japan, the research is assisting the policy issues.

Questions for Speakers:

Ms. Koda, as the moderator of the session, posed the question, "What are the next steps of the Network?"

There was a call for more research institutions to join the network to encourage more developing countries to make their own paths towards LCS by their own capacity, as well as assisting so that they can choose. This was echoed by others. The goal is to enable exchange of best practices and influence policies in a cooperative and intelligent way. The need to transfer technology and financing to developing countries was also pointed out. This is both a challenge and an opportunity.

Panel Session 2:

Efforts to Shift towards Low-Carbon Societies in Japan

Moderator: Ms. Charmine Koda, Journalist

Efforts to Shift towards Low-Carbon Societies in Japan – Policy Context

Mr. Hiroaki Takiguchi,
Director, Office of International Strategy on Climate Change, Ministry of the Environment, Japan

Mr. Takiguchi from the Ministry of the Environment, Japan, presented on government efforts to move towards LCS in Japan. First, there are three principles (participation of all major emitters in future regime, combining environment and economy, and achieving long-term targets) for Japan's mid-term targets announced on 10 June (to reduce emissions by 15% from 2005 levels, by 2020). Furthermore, for the path to long term emissions reduction, and in order to achieve 70% reductions by 2050, it is necessary to increase the annual reduction rate from 1% to 4.5 %. While it is necessary to reduce emissions as quickly as possible, it is also necessary to implement social changes at the same time. On the other hand, the governments' role towards LCS must include four pillars (institutional arrangement, enhanced intangible and tangible asset, and nature conservation). Finally, Mr. Takiguchi stressed that a sustainable society must be created from three components, namely LCS, sound material-cycle society, and a society in harmony with nature.

Efforts to Shift towards Low-Carbon Societies in Japan – Local Government Initiatives

Mr. Reiji Hitsumoto,
Director for Eco-Model City Affairs, Environment Bureau, Kitakyushu City

Mr. Hitsumoto from Kitakyushu City introduced efforts towards LCS in Kitakyushu City. First, he looked back on efforts in Kitakyushu that achieved both environmental improvements and economic growth from the emergence of pollution issues in the 1960s. Learning from those experiences, Kitakyushu has been promoting international environmental cooperation with Asian countries

through the Asian City Network and Eco-towns. Furthermore, in July 2008, Kitakyushu City was selected as a model environmental city for sustainable development towards LCS. There are four practical approaches that are being implemented by Kitakyushu City to achieve both CO_2 emissions reductions (50% reduction by 2050) and economic growth. The first one is a promotion of LCS by including the concept in designing urban development, e.g. the development of Higashigata (Green Village). The second one is to develop low-carbon industries through technology and product development. The third approach is to promote capacity building for a LCS through eco-museums, eco-housing as well as the introduction of solar power systems at elementary schools. The fourth approach is to create an intercity network for environmental cooperation aiming for sustainable development in Asia by knowledge transfer from Kitakyushu City through the Asia LCS Centre.

Efforts to Shift towards Low-Carbon Societies in Japan – Context of Industries

Mr. Masayuki Sasanouchi,
Senior General Manager, CSR & Environmental Affairs Division, Toyota Motor Corporation

Mr. Sasanouchi from the Toyota Motor Corporation explained positions and views of businesses regarding moves to a LCS. First, he presented a map showing the burden-sharing for developed and developing countries. The map indicated that, in order to achieve emissions reductions of 50% by 2050, developing countries still have to reduce their emissions by 60%, even if developed countries could reduce emissions by 100%. Therefore, technological innovations are vital to achieve such results. The Kaya equation (CO_2 emissions formulated from carbon and energy intensities with amount of activity per emissions source) well explains the position of industries which promote a sectoral based approach in order to reduce carbon intensities through technological development. In addition, comprehensive approaches in designing the measures are important, e.g. an assessment of the emissions through the whole product lifecycle, and corporate strategies and policies based on cost benefit analysis taking into account both the cost for CO_2 emissions reductions and the environmental cost.

Toward New Paradigm of Energy & Environmental Policy From Mode1 to Mode 3

Mr. Tetsunari Iida,
Executive Director, Institute for Sustainable Energy Policies

Mr. Iida from the Institute for Sustainable Energy Policies gave a presentation on Japan's environmental energy policies from a Japanese political context. First, the current world-wide boom of renewable energy diffusion can be characterised as energy diversification. As a result, the world market for renewables has expanded to about JPY 15 trillion at present. Indeed, the targets-setting (by policies) can give a boost to renewable energy diffusion. However, there has been an absence of the political initiative to shift to a more diverse energy-mix in Japan. This is the reason why Japan has simply continued to rely on thermal power generation to meet an increasing energy demand, and the cause of a delay in taking the necessary measures for emissions reductions. Furthermore, due to the Japanese political structure, macrolevel model analysis are not fully utilised in policy-making, so as a result, policies are not effective enough in making concrete progress. For Japan to achieve its reduction target, there needs to be a new approach of knowledge-based policy-making combining a knowledge community and local communities. In this way, it is necessary to make a paradigm shift of current environmental energy policy-making.

Efforts to Shift towards Low-Carbon Society in Japan – Research Context

Dr. Mikiko Kainuma,
Chief, Climate Policy Assessment Research Section, Center for Global Environmental Research, National Institute for Environmental Studies (NIES)

The final panelist, Dr. Kainuma from NIES, talked about measures needed to achieve a 70% reduction by 2050 compared with 1990 levels. The methodology applied for the research firstly drew imaginary societies achieving the reduction target in 2050, and then back-casting analysis was done to come up with 12 practical ways to achieve such societies. She pointed out the necessity to bring in policies that offered incentives for measures associated with cost, in order to implement each of the measures. As steps towards a LCS, three measures are vital, namely public awareness raised, for example, by offering incentives, improvement of knowledge on technologies on both the supply and demand sides, and also having public participation, not just political leadership.

Discussion

Ms. Koda, as a moderator, asked Mr. Sasanouchi if he takes the challenge of LCS as a risk or a chance. He indicated the fact that about 180 global companies are taking part in the WBCSD (World Business Council for Sustainable Development) may be an evidence that those companies view LCS as a business chance e.g., through the participation in Emission Trading in energy sector. However, he stressed that his company Toyota would like to find its own way in taking a lead in manufacturing as a business chance.

Respective Sessions

26 June 2009 13:45-15:05

Taking a Co-benefit Approach: Potential and Prospects in Asia

A Co-benefit approach is important in developing Asia because it can reduce the costs, accelerate the timing and enhance the effectiveness of climate actions.

Multi-benefit policies face several barriers and these need to be better understood by organisations promoting a co-benefit approach.

Urban air quality can be improved by policies that reduce short-lived warming agents such as black carbon. These policies should receive more attention in Asia.

Preferential treatment for projects and programmes with co-benefits is one option that could help promote co-benefits under a future climate change regime's market mechanisms.

Communication between the climate, air pollution and development communities in Asia could be facilitated by establishing a co-benefit forum.

Speakers Profiles

Moderator

Charmine Koda
Journalist

Panelists

Tokuya Wada
Director, Office for International Cooperation, Environmental Management Bureau, Ministry of the Environment, Japan

Cornie Huizenga
Vice Chairman, CAI-Asia

Michael Walsh
ICCT

Eric Zusman
Policy Researcher, Climate Policy Project, IGES

Katsunori Suzuki
Professor, Kanazawa University

Yuji Mizuno
Manager, Market Mechanism Project, IGES

Objectives

Averting a climate crisis will require that developing Asia begins mitigating greenhouse gases (GHG) emissions in the near future. The chief objection to taking climate actions in developing Asia is their costs. Investing in climate actions can divert resources from more imminent development priorities. A co-benefit approach could help allay these cost concerns.

Such an approach involves identifying policies that mitigate GHGs while alleviating poverty, improving air quality, and addressing other development needs. In theory, these additional development co-benefits can offset the costs of climate actions. In practice, there remain a number of obstacles to capturing co-benefits in developing Asia. This session will review the potential and prospects for a co-benefit approach in developing Asia.

Following a presentation on the initiatives launched by the Ministry of Environment, Japan (MoEJ) to promote co-benefits, there will be a discussion of policies with significant co-benefits in developing Asia. Further remarks will explore institutional barriers to capturing co-benefits in developing Asia, examine regional cooperation on air pollution co-benefits and look at the linkages between co-benefits and the climate change regime's Clean Development Mechanism (CDM).

Session Summary

Tokuya Wada, Director, Office for International Cooperation, Environmental Management Bureau, Ministry of the Environment of Japan began the session by stating that the Ministry of Environment, Japan's (MOEJ) co-benefits approach emphasises pollution control. As developing Asia faces many emerging pollution problems, the MOEJ intends to focus its co-benefits approach on three target areas (air quality management, wastewater treatment, and waste management) in line with post-2012 climate negotiations. He mentioned that a support scheme for realising co-benefits projects by domestic private firms has been in place since 2008. The scheme provides financial support to cover half the initial costs incurred in the new CDM co-benefits projects. Two projects, one in Malaysia (waste management with methane collection and leachate prevention) and the other in China (water quality management), began last year under this support scheme. The projects have received USD 3 million in total disbursement. Bilateral cooperation on co-benefits has been launched with Indonesia and China from 2008 to 2010. In Indonesia, opportunities for co-benefit projects have been explored, and two model cities have been selected as pilot sites. Likewise in China, a potential site has been selected for model co-benefits projects, and a Ministry of Environmental Protection (MEP) study has been conducted to explore co-benefits opportunities to be included in the upcoming 12th Five-Year Plan. The promotion of mitigation activities in developing countries will play a significant role in the future climate regime. Establishing a linkage between co-benefits approach and MRVs and NAMAs is crucial. MOEJ also intends to explore a co-benefits approach at the regional level, and in this regard, MOEJ looks forward to establishing a regional cooperation framework such as co-benefits forum.

Next, Cornie Huizenga, Board Member, Clean Air Initiative for Asian Cities began a presentation by explaining a co-benefit approach which involves taking policies that mitigate GHGs at the same time that they reduce conventional air pollutants. The approach is considered important to Asia because it can reduce the slope of the increase in GHG emissions and bring forward the time that GHG emissions will start to decline in absolute terms. It will also make it easier to achieve long term GHG reduction goals. The policies with the greatest potential to deliver co-benefits include energy efficiency, green buildings, renewable energy, clean fuels and technologies. Co-benefits have received a great deal of attention from international organisations, including the Clean Air Initiative-Asia (CAI-Asia), International Council for Local Environmental Initiatives (ICLEI), Overseas Environmental Cooperation Center (OECC), and the Institute for Global Environmental Strategies (IGES). There has also been some discussion of co-benefits in the recent negotiation text over the future climate regime. Yet for the time being co-benefits have not been integrated at the policy level; co-benefits remain more a concept than a practice. In the future, there is a need for stronger networking, international cooperation, and implementation of projects. One promising avenue for making co-benefits more of a practice is the Stockholm Process initiated under the Global Atmospheric Pollution Forum (GAPF). The GAPF has called for: 1) urgent actions on non-CO_2 pollutants to improve public health and gain time while long-term CO_2 measures are put in place; 2) follow up to COP 15 in detailing co-benefits as part of CDM and NAMAs; 3) conduct a global assessment of black carbon; 4) formulate a wider integration strategy for air pollution reduction and climate mitigation; 5) and generate baseline data at the sector level for better decision-making.

Michael Walsh, Chairman of the Board of Directors, International Council on Clean Transportation began by stating that the transport sector will be an important area for a co-benefit approach. Vehicle fleets have increased rapidly in Asia, and will soon pass Europe in absolute terms. As a result, there has been a dramatic rise in air pollution as well as adverse impacts on public health in the region. Motorisation is also contributing to climate change. To deal with both sets of problems, a comprehensive approach consisting of clean vehicles and technologies, transportation and land use planning measures, and appropriate maintenance is needed. Fuel efficiency standards in California (US), the EU, and China are one of several signs of progress. However, the vehicle population is increasing so fast that it could offset per vehicle efficiency gains in Asia. Another important realisation is that carbon dioxide (CO_2) is not the only cause of climate change. Other pollutants such as black carbon (BC), ozone, methane are playing an important role. BC is perhaps the most important of

these short-lived warming agents. It could be particularly problematic in India since diesel vehicles are a major source of BC and are not subject to stringent pollution control standards. Besides diesel, he emphasised that there are also many challenges such as technical difficulty in measuring co-benefits, engaging key sectoral interests, financing actions, incentivising multi-benefit policies, developing capacity for implementing the policies. There are also limits on capacity as illustrated by the significant difference in people working on vehicle pollution in China's Ministry of Environmental Protection (MEP) and the United States Environmental Protection Agency (US EPA).

Eric Zusman, Policy Researcher, Institute for Global Environmental Strategies (IGES), Japan then made several comments. He began by commenting that there have been two groups interested in co-benefits. The first, international organisations, have advocated a co-benefit approach because they realise it is one of the few ways that developing countries can begin to mitigate their GHGs.

The second, researchers, have estimated co-benefits because they are able to demonstrate the value of reduced air pollution and other short-term benefits from policies that also reduce GHGs. Yet there have still been few indications that either group has left the impression on policies in Asia. There are many reasons for the limited progress. Among the most important is that most of the policies that would deliver co-benefits are made through a collective decision making process. The process typically involves government agencies that disagree over policy ends and means and local governments that also have their own divergent interests. Thus policy results are likely to be quite different from those advocated by international organisations promoting a co-benefit approach or by researchers estimating co-benefits. To have a more significant impact on policy, it is important to think about institutions. Institutions will be needed to hold agencies more responsible for the design and the implementation of policies with co-benefits. This could be accomplished with the creation of public oversight boards that make agencies accountable for the achievement of benchmarks linked to co-benefits. It could also be strengthened with a future climate regime that formally recognises the pledge and achievement of NAMAs with co-benefits.

Kasunori Suzuki, Kanazawa University, Japan stated that there has been a long history of co-benefits projects, dating back to the late 1990s when the Activities Implemented Jointly (AIJ) clearly demonstrated co-benefits between climate change and air pollution in Eastern Europe (benefits for human health). These projects also demonstrated that it was possible to reduce costs through an integrated or a co-benefit approach. Many efforts in Europe suggest the importance of recognising synergies between different air pollutants (especially short-lived species such as methane, ozone and black carbon) and air pollution reduction strategies.

But in Asia there are a number of challenges to building effective regional and sub-regional air pollution networks. There has nonetheless been some modest progress creating such networks in the region. For instance, the Acid Deposition Monitoring Network in East Asia has helped to forge intergovernmental cooperation on air pollution; established a network of policy makers and experts; and harmonised methodologies for monitoring. Among the more promising recent developments is the creation of the Asia-Pacific Atmospheric Partnership (APAP). APAP was designed to serve as an umbrella organisation for ongoing regional and subregional air pollution activities. Its chief objectives are to determine common goals; exchange information and expertise; identify future challenges; share information with regional networks outside of Asia; and develop a formal or informal plan for continuing cooperation and addressing common challenges in the region. The creation of a co-benefits forum in Asia could generate even more momentum.

The final presentation was by Yuji Mizuno, IGES, Japan. He commented that a number of issues have gained attention in recent discussions over a future clean development mechanism (CDM). Discussions have focused on improving efficiency of approval procedures for CDM projects and reducing more GHG emissions than the current project-based CDM. Discussions have not focused on supporting national development needs or other environmental benefits. Japan has proposed promoting co-benefits of the CDM under international climate negotiations. But the reality is that host country governments are responsible for determining whether a project contributes to sustainable development. Therefore all projects should generate some co-benefits. The problem is that the projects with the greatest co-benefits also tend to be the least economical. Current discussions to scale up the CDM to the sectoral level and create a sectoral crediting mechanism may offer greater support for sustainable development. Preferential treatment for co-benefits types of CDM projects under the UNFCCC rule may offer a more direct solution.

Questions and Answers

The questions and answers focused chiefly on measurement issues. Some participants noted that there are general agreements on the approach for measuring co-benefits (cost benefit analysis), but the actual tools for specific cases vary. Other participants noted that measurement is a way that Japan can contribute to a co-benefit approach; quantitative methods to control pollution have been developed in Japan and could be used to measure, report and verify (MRV) co-benefits. Another participant focused on the measurement of black carbon. Current estimates of black carbon's global warming potential (GWP) are not only significant but also vary significantly. This is the primary reasons it has been difficult to bring black carbon under a post-2012 regime.

26 June 2009 15:20-16:40

Can REDD Save the World's Forests?

Emissions reduction from deforestation and forest degradation must be a part of the future global framework to mitigate climate change.

Policy contradictions (inside and outside the forest sector) must be corrected to effectively reduce deforestation and forest degradation.

Without significant policy and tenure reforms, there is a risk that REDD may further marginalise forest dependent communities, increase conflict over forest resources, and result in human rights violations.

REDD has to address the needs and interests of local communities to achieve long-term reductions in emissions.

REDD must be performance-based to provide enough stimulus for compliance.

Capacity building is vital in developing countries for them to successfully participate in REDD.

Speakers Profiles

Introduction

Henry Scheyvens
Manager, Forest Conservation Project, IGES

His current research spans forest law, forests and climate, and legality and sustainability certification. He represents IGES on the Steering Committee of the Asia Forest Partnership.

Key Presentations

Nobuyuki Muto
Forestry Agency of Japan

Mr. Muto is the Deputy Director of the International Forestry Co-operation Office of the Forestry Agency of Japan. Within the Agency, he is in charge of the REDD issue.

Fitrian Ardiansyah
WWF-Indonesia

Mr. Ardiansyah is the Program Director for Climate and Energy, WWF-Indonesia. He is an official delegate of the government of Indonesia in the negotiations on REDD and LULUCF at the UNFCCC. Mr. Ardiansyah is also a member of the Indonesia Forest and Climate Alliance and a former executive board member of the Roundtable of Sustainable Palm Oil (RSPO).

Moderator

Hideyuki Mori
Vice-President, IGES

Panelists

Nobuyuki Muto
Forestry Agency of Japan

Fitrian Ardiansyah
WWF-Indonesia

Amanda Bradley
Pact, Cambodia

Before joining PACT-Cambodia as country director of the Community Forest Programme (PACT is an international organisation with the mandate of building capacity of local leaders and organisations) Ms. Bradley worked for Community Forestry International. Ms. Bradley has more than 15 years work experience in Asia, most of which she has gathered in Cambodia. As one of the main project developers of the REDD initiative in Oddar Meanchey, Ms. Bradley coordinates PACT's interaction with the government of Cambodia and local stakeholders.

Henry Scheyvens
Manager, Forest Conservation Project, IGES

Objectives

The session's main objective was to provide an update of the REDD negotiations at the international level, as the UNFCCC heads towards a decision on REDD in Copenhagen in December of this year. The session also sought to share information on the progress towards national REDD readiness frameworks and REDD demonstration activities in Asia-Pacific countries, in particular in Indonesia and Cambodia. A further objective of the session was to explore the challenges facing the development of national and sub-national level REDD and possible ways forward.

Session Summary

During this session the speakers discussed several issues considered key for the effective implementation of Reduced Emissions from Deforestation and Forest Degradation (REDD) initiatives.

The speakers agreed that the international community cannot afford to ignore the contribution of deforestation and forest degradation to climate change. It is a generally accepted fact that human induced deforestation and forest degradation contribute roughly 20% of all anthropogenic CO_2 emissions. Therefore, a mechanism like REDD – where the international community rewards those countries that demonstrate the avoidance/reduction of deforestation and forest degradation – is a relevant tool for climate change mitigation.

Participants noted that for REDD to be implemented successfully there is an urgent need to address policy issues like population growth and poverty, conflicting policies (like those driving land use change for the production of agricultural commodities as well as large scale infrastructure and energy development), unclear land tenure and weak governance. Also, REDD initiatives need to devise transparent benefit sharing mechanisms, provide information in an understandable fashion to local stakeholders and seek implementation through their 'free prior informed consent'.

The session noted that different from past forest conservation efforts and initiatives to improve forest management, REDD is interesting from a policy perspective because it is conceived as a performance-based instrument. This means that any payments related to REDD should be contingent upon the credible demonstration of avoided deforestation and reduced forest degradation.

Individual countries must be able to demonstrate the reduction of deforestation and forest degradation, which is contingent not only on the establishment of credible reference emission levels, but also on their capacity to monitor and control the displacement of emissions in the present (leakage) as well as in the future (permanence). Capacity building is needed in developing countries interested in participating in REDD (monitoring, consulting processes with key stakeholders, implementation strategies, etc.). The costs of capacity building will be strongly influenced by the implementation paths that different countries may choose, that is whether a country decides to implement REDD on a national basis, or if REDD is implemented through a sub-national (project) approach or a combination of both.

The participants emphasised that there are risks associated with REDD. In particular, if countries try to implement REDD without undertaking the necessary policy reforms (within and outside the forest sector) this will undermine the credibility of REDD. Likewise if REDD fails to properly address local communities' needs and interests, it is likely it will result in unfair benefit sharing, marginalisation, human rights violations and conflicts over forest resources. The combination of these shortcomings has the potential to undermine REDD and render it useless. These problems are not new to many Asia Pacific countries and the caveat is clear that REDD – implemented in the wrong circumstances – may deepen existing problems rather than contribute to their solution.

26 June 2009 16:55-18:30

Biofuels and Sustainability in Asia

Environmental, social and economic implications of biofuels vary widely both within and between countries.

Biofuel policies should be integrated into a wider range of policy areas including energy, agriculture, science and technology, and coordination among stakeholders and ministries should be enhanced.

Uncertainties exist regarding sustainability impacts, economic viability, the rate of technological progress and the probability of continued high volatility in oil prices. Priority should be placed on long-term R&D investments while avoiding early targeting of specific technologies or large-scale short-term economic promotion measures.

Measuring and assessing the environmental, social and economic sustainability of biofuels is an on-going challenge, partly due to the above uncertainties. Initiatives to develop biofuel sustainability standards could help to meet this challenge, taking into account differences in the views of various stakeholders as well as differences in local conditions.

Speakers Profiles

Moderator

Tetsunari Iida
Executive Director of the Institute for Sustainable Energy Policies (ISEP), Japan

Panelists

Mark Elder
Principal Researcher, Manager of the Biofuel Project, IGES

He has been leading research projects on biofuels, economic integration and environment, transboundary air pollution, and local initiatives. Other research interests include renewable energy and waste/recycling. He received a Ph.D. in political science from the Department of Government, Harvard University. He joined IGES from September 2006.

Surya P. Sethi
Principal Adviser for Energy, Planning Commission, the Government of India

His current position is Principal Adviser (Energy), Planning Commission, the Government of India, serving the Prime Minister's Energy Coordination Committee. He has 35 years of work experience in some 30 countries worldwide in the field of energy, infrastructure, capital markets and multiple industrial sectors. He previously acted as India's core negotiator in climate change negotiations and presented India's case at the Intergovernmental Panel on Climate Change (IPCC), the United Nations Framework Convention on Climate Change (UNFCCC), the CSD dialogue at the UN, the preparatory and follow up meetings of the G-8 dialogue, the E-7 Group and a number of bi-lateral Energy and Climate Forums with the US, EU, UK and Japan.

Saryono Hadiwidjoyo
Director, Oil and Gas Downstream Activities, Ministry of Energy and Mineral Resources, the Government of Indonesia

He is the Director of Oil and Gas Downstream Development under the Directorate General of Oil and Gas of the Department of Energy and Mineral Resources of the Republic of Indonesia. His office is responsible for ensuring the availability of reasonably priced fossil fuel and gas nationwide among other important tasks. He is also in the forefront in raising awareness to reduce fossil fuel consumption by means of conservation and diversification of energy sources that is why he is one of the key persons knowledgeable of Indonesia's biofuel polices and projects.

Masayuki Sagisaka
Deputy Director, Institute of Science for Safety & Sustainability, National Institute of Advanced Industrial Science and Technology (AIST)

His current position is Deputy Director, Institute of Science for Safety & Sustainability, National Institute of Advanced Industrial Science & Technology (AIST), Japan. His specialties include sustainability assessment of biomass utilisation (current research), environmental impacts analysis for mining, materials processing and local area development by life cycle assessment methods (current research), energy systems analysis, gas diffusion and the safety measures, and mine safety monitoring. His previous position was Chief, Energy Analysis Division, Energy Resources Department, National Institute for Resources and Environment (NIRE), Japan.

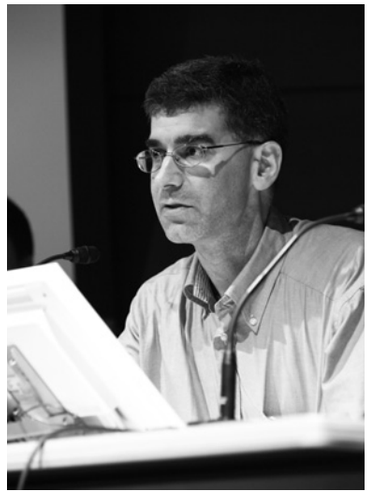
KK Philip Kang
Economic Affairs Officer, Energy Security Section, Environment and Development Division, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

His current position is Economic Affairs Officer with the Energy Security Section, Environment and Development Division at the United Nations Economic and Social Commission for Asia and the Pacific, Bangkok, where he has served for 5 years. His portfolio includes energy security, bioenergy and energy efficiency as they relate to socio-economic development issues. He has researched the linkages between biofuels and food security in Asia and the Pacific region with a particular interest in sustainable development aspects of biofuels. He has served with the United Nations for 10 years including assignments to UNDP Seoul, UNDP Turkey and the United Nations Transitional Administration in East Timor (UNTAET) dealing with numerous topics including environment, energy, rural development and programme management. His academic degrees are from Georgetown University (BA) and the University of Chicago (MA).

Objectives

To hold a discussion on sustainability issues relating to the use of biofuels in Asia between policy makers (including representatives from the governments in developing countries and an international organisation) and research institutes that are currently conducting biofuel-related studies in the region.

Session Summary



The introductory presentation was made by Dr. Elder, presenting IGES's preliminary findings and main questions to be raised in the session. While multiple benefits are expected from biofuel utilisation, there are some questions about to what extent these benefits can be achieved and concerns about their sustainability. He pointed out that it is common for countries to place a higher priority on energy security and economic development in comparison with environmental goals. He highlighted two major concerns, first, land use change and its subsequent potential negative impacts such as food price increases and deforestation which could negatively affect climate change, and second, potentially high financial costs to governments to support biofuel promotion. He also discussed difficulties that may face a few commonly proposed solutions for biofuel sustainability issues, such as using "wastelands" to grow non-food crops and reliance on more advanced second generation biofuels. Following a discussion of the potential advantages and difficulties of initiatives to develop biofuel sustainability standards, Dr. Elder concluded the presentation with a few main questions to be discussed in the session.

Dr. Sethi emphasised that the issue of the sustainability of biofuels in India needs to be considered in the overall context of energy and energy policies in India, and he highlighted the dire conditions that India is facing, in particular, that large numbers of people with a very low standard of living have limited availability/access to basic factors of production (energy, land, and water). He pointed out that sustainability issues associated with biofuels are very specific and unique to the local conditions, and that life-cycle assessment (LCA) of GHG reduction potential of biofuels needs to be country and region specific. He commented that the sustainability of biofuels should be determined on the basis of the extent of their contributions to GHG emissions reduction and energy security, effects on food security, and their economic viability. Employment creation, poverty reduction, and rural development should not be the main objectives of biofuels, since these objectives could be more effectively achieved by other means. He said that biofuels could be sustainable if they are produced and used in a localised and decentralised

manner, but that large scale projects need a thorough analysis of their potential impacts, including net energy balance, impacts on global and local ecosystems, livelihoods of indigenous people, migration, land holdings, and food and water security. Regarding current biofuel policy discussions, he expressed concerns about how potential inappropriate government intervention, especially subsidies, could lead to significant problems. For example, subsidies for a specific commodity might distort the market, lead to shortages of water and other resources, reduce food security, and might create profits for only a limited number of stakeholders. The importance of supporting R&D for alternative forms of biomass as well as other forms of renewable energy was also pointed out. Dr. Sethi concluded that current biofuel promotion is driven by a desire for a guilt-free fuel, and more emphasis should be put on reducing energy consumption.

Mr. Hadiwidjoyo presented an overview of Indonesia's energy and biofuel conditions and policies in the context of the global energy situation, and discussed current developments in Indonesia's biofuel policies. Similar to the case of India, the issue of energy security is being emphasised by the Indonesian government, and Presidential regulations to diversify and conserve energy are already in place. The biggest challenge identified is the lack of competitiveness of renewable energy since all three types of oil (gasoline, diesel and kerosene) receive subsidies. In order to promote the use of biofuels, the Indonesian government introduced mandatory blending of biodiesel, bioethanol and pure plantation oil (plant-origin oil). In addition, the government is considering other economic measures such as tax break for value-added tax for the biofuel industry and subsidies for biofuels.

Dr. Sagisaka presented the activities of the ERIA (Economic Research Institute for ASEAN and East Asia) Working Group on "Sustainable Biomass Utilisation in East Asia" and a few examples of study results. The Working Group consists of researchers from seven Asian countries (India, Indonesia, Japan, Malaysia, Philippines, Singapore and Thailand) and provides policy recommendations to ERIA with a sound scientific basis. The Working Group has developed sustainability indicators based on the triple bottom line (to optimise environmental, social, and economic performance), and is employing them in pilot studies. The three main indicators of focus are the human development index (HDI), life cycle assessment (LCA), and gross value added (GVA). One example of an HDI study showed that biodiesel production from jatropha in Andhra Pradesh, India contributed to a slight increase in HDI.

Mr. Kang presented the various activities conducted by the UNESCAP and discussed the issues of biofuels and energy security from the wider prospective of the Asia-Pacific region. After an introduction to UNESCAP's overall agenda, he discussed energy security issues and their adverse impacts on the Millennium Development Goals (MDGs) in the region. Quoting findings from various UNESCAP activities, he summarised the main potential benefits of biofuels as well as the potential negative impacts. Mr. Kang concluded his presentation with main points to be considered for the future energy security and biofuels including consensus building on biofuel utilisation in the region, standard and regulatory framework development, and a need for a full life cycle assessment (LCA) for regulating and certifying sustainable biofuel production.

In the panel discussion, questions were raised regarding what factors explain how Brazil's experience with biofuels is different from India and Indonesia, and the future prospects for second generation biofuels in India and Indonesia. Dr. Sethi explained that there are large differences between the countries in terms of natural resource endowments and length of time that the biofuel industry has been promoted. In particular, he emphasised the importance of water availability, noting that Brazil has much more water per capita than India, which has an overall shortage of water. Mr. Hadiwidjoyo mentioned that Indonesia is considering ethanol production from waste residues of palm oil production.

The other three panellists emphasised the following points: (i) results of life cycle assessment also demonstrate that the sustainability of biofuels depends on local conditions and policies (Dr. Sagisaka), (ii) governments need to pursue renewable energy promotion, including R&D, regardless of oil price fluctuations, and continue discussing standards (Mr. Kang), and (iii) there is no set of one-size-fits-all policies for sustainable biofuels because of wide variations in local conditions across countries, and discussions on sustainability will contribute to shaping biofuel policies (Dr. Elder). Lastly, Mr. Iida, the moderator, summarised the session. He emphasised that sustainability of biofuels requires paying attention to specific local economic, social and environmental conditions. He also pointed out the need to understand the complexity of the issues from the macroscopic point of view, and the need to deal with uncertainties in the future development of the second generation biofuels.

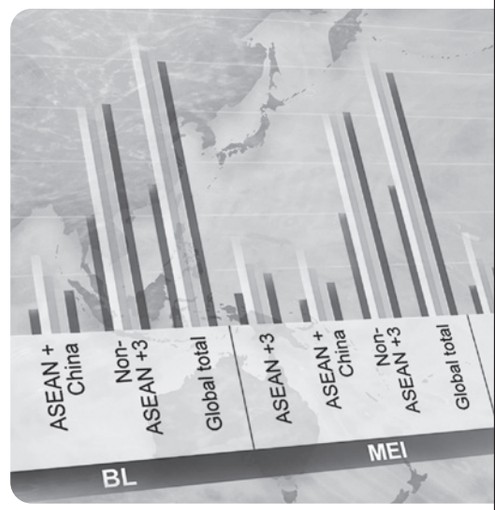
26 June 2009 13:45-18:00

Potential of Economic Modelling in Formulating Sustainable Development Policies

Integrated policy impact assessment greatly facilitates formulating and implementing SD policies.

Economic modelling, such as computable general equilibrium (CGE) model, environmentally extended national accounting, or Input-Output model, can play a significant role to conduct such an assessment.

Poverty alleviation in developing countries is the primary objective of sustainable development, and integrated policy impact assessment is expected to identify comprehensive impacts of poverty alleviation policies for their better formulation.



Consumer and producer countries must reconsider sharing the responsibility of nationally responsible GHG emissions, with respect to emissions embodied in international trade.

Elaboration of both methodology and data is necessary to fully exploit the potential of economic modelling as a tool to conduct integrated policy impact assessment.

Speakers Profiles

Panelists

Satoshi Kojima
Senior Researcher and Manager of Economic Analysis Team, IGES

His research work focuses on quantitative policy analysis of sustainable development policy in East Asia, including the study on promotion of sustainable development in the context of regional economic integration, and international impact analysis as a part of the LCS2050 project. He graduated from the University of Tokyo with a Master's in Engineering. After 7 years of engaging in water and environment-related official development assistance (ODA) projects in several countries including Indonesia and Hungary, he studied environmental economics at the University of York in the United Kingdom. After receiving a Ph.D. in Environmental Economics, he joined IGES in 2005. He published a book "Sustainable Development in Water-stressed Developing Countries: A Quantitative Policy Analysis" published by Edward Elgar Publishing in 2007.

Anindya Bhattacharya
Researcher of the Economic Analysis Team, IGES

His specialisation area is energy policy and economics and especially the regulatory reform process of the power sector in the developing countries. He is also instrumental in various quantitative analysis and economic modelling of energy and environmental policies. He has more than 7 years of experiences in this sector working with various international, national and private sector companies in the Asia Pacific region. He obtained his bachelor's degree in Physics and an MBA in Public System management from University of Calcutta, India and worked for more than 2 years with the World Bank and UNESCAP in various consulting work before obtaining his MS in Applied Economics with a specialisation in Resource Economics from West Virginia University, USA in 2003. He joined IGES in 2007.

Xin Zhou
Senior Policy Researcher and Co-manager of the Economic Analysis Team, IGES

She gained a Ph.D. from Nagoya University. Before she joined IGES, she was senior research fellow and Director of Environmental Policy Research Division at the Policy Research Center for Environment and Economy in China. Her main research areas include environmental policy analysis for China and environmental economics based on quantitative approaches, such as input-output analysis, optimisation, life-cycle analysis and integrated assessment, etc. She was project manager of many research works funded domestically in China or by international organisations. Her publications include seven books or chapters and about twenty peer-reviewed journal articles. She was twice awarded the national prize for distinguished scientific research by the Chinese Government and other prizes given by the Ministry of Environmental Protection in China.

Manfred Lenzen
Professor, Integrated Sustainability Analysis (ISA), School of Physics of the University of Sydney

He is involved in many research activities conducted at ISA, including Triple Bottom Line Reporting / Sustainability Reporting, Life Cycle Assessment, Ecological Footprint Analysis, Industry Sector Studies and Economic Systems Research. His major research achievements include consumption-based analysis for energy, ecological footprint and international trade using input-output analysis. Together with his colleague, he proposed the methodology on shared producer and consumer responsibility for an application using input-output analysis. He has made many contributions to international journals, such as Ecological Economics, Energy Policy, Journal of Industrial Ecology, Journal of Cleaner Production, Economic Systems Research, Applied Energy, and Renewable Energy, etc. He is the editor of Economic Systems Research, the journal of the International Input-Output Association.

Hans Lofgren
Senior Economist in the Development Economics, Prospects Group, World Bank

His work is focused on the development and application of MAMS (Maquette for MDG Simulations), a tool for economy-wide, country-level analysis of medium- and long-run development policies, including strategies for reducing poverty and achieving the Millennium Development Goals (MDGs); as of May, 2009, MAMS has been or is being applied to 35 countries as part of World Bank country analysis and collaborative work with other institutions. He joined the World Bank in June 2004. Prior to this he was a Senior Research Fellow at the International Food Policy Research Institute (IFPRI). He holds a Ph.D. in Economics from the University of Texas at Austin.

Objectives

The importance of a regional/international dimension of environmental and development policies has increased in accordance with a more globalised society. In the world trade regime, potential trade barriers due to environmental measures and policies have been intensively discussed, while the 1992 UN Conference on Environment and Development (the Rio Earth Summit) took up the issue of trade and environment with highlighting the potential role of international trade in poverty alleviation and in combating environmental degradation in the context of sustainable development. Against this background the demands for quantitative economic analysis on these issues from decision makers/policymakers are increasing despite that the complex nature of these issues makes clear-cut quantitative analysis very challenging.

This session will introduce recent research efforts to tackle this challenge and to deepen discussions on the way forward.

Session Summary

As opening remarks, Dr. Kojima briefly explained that the mission of Economic Analysis Team was to ensure sound environmental policy and economic policy towards sustainable development through quantitative policy analysis or policy assessment based on economic analytical tools, and that this session was organised along this mission and it aimed to present the achievement so far and to learn from and exchange opinion with two distinguished guest speakers.

Following the opening remarks, Dr. Kojima made a presentation on integrated policy impact assessment for trade, environment and regional cooperation based on computable general equilibrium (CGE) modelling. He introduced his definition of Sustainable Development (SD) as alleviation of the present poverty without losing key ecosystem functions underpinning human well-being such as hydrological cycle, nutrient cycle, etc. He claimed that ex-ante policy impact assessment greatly facilitates formulating and implementing SD policies, and explained the concept of Integrated Policy Assessment Model (IPAM) based on multi-regional dynamic computable general equilibrium (CGE) modelling approach as a main tool to conduct such an assessment. He briefly sketched the Regional Environment Policy Assessment (REPA) model as a prototype of IPAM.

As an example of application of REPA model to regional cooperation studies, Dr. Kojima presented the Japan Low Carbon Society (LCS) scenario study for which IGES contributed to analysis on international impacts of Japan LCS. In IGES analysis, three Japan LCS scenarios were formulated. The first scenario (LCS-1) consisted of industrial energy efficiency improvement and households' electricity saving, and the second (LCS-2) and the third (LCS-3) scenarios introduced different types of carbon pricing (carbon tax in Japan for the former and regional emission trading among ASAN+3 countries for the latter) into LCS-1. For LCS-2 and LCS-3, carbon price was endogenously determined such that prescribed emission reduction target will be met. The target for Japan is 30% reduction from 1990 level by 2020, while under LCS-3 emission quotas were allocated to each member reflecting its development level. LCS-3 was designed to demonstrate potential of regional cooperation to utilise Japan LCS Scenarios for regional CO_2 emission reduction without severe negative impacts on other

countries. The results showed that LCS-1 reduces CO_2 emissions significantly but did not achieve the target of 30% CO_2 reduction from 1990 level. All LCS scenarios raised Japanese GDP from BAU, but whether it is the case or not may depend on cost parameter (productivity loss due to abatement) settings. International impacts of LCS-2 on real GDP were almost negligible. LCS-3 achieved significant regional CO_2 emission reductions but in terms of real GDP only, the winner was Japan. LCS-2 and LCS-3 slightly increased global poverty headcounts, particularly under LCS-3 probably due to negative economic impacts of carbon pricing in developing countries. Dr. Kojima concluded that this study demonstrated potential of multi-regional dynamic computable general equilibrium (CGE) model for integrated policy assessment for sustainable development, particularly focusing on trade, environment and regional cooperation, but it also revealed the remaining challenges to develop full Integrated Policy Impact Assessment model.

Major comments on this presentation were (i) how to elaborate policy cost parameters, and (ii) the current ideas for developing full IPAM. Dr. Kojima explained the current plan of field survey for addressing the policy cost data issue, and some ideas related to (ii) such as reflection of resource constraint and explicit treatment of government.

As another example of regional cooperation study, Mr. Bhattacharya presented a study on environmental and economic impacts of cross border energy infrastructure in Asia. The Asian energy scenario is unique in nature. On the one hand, it has huge energy resources which are still untapped, but it also has the huge unmet demand for energy to fuel its economic growth and development. As energy needs and their supply points are located in different areas in Asia, it creates the opportunity to develop cross border energy infrastructure projects and subsequently to trade energy among the energy surplus and deficit countries within the region.

Mr. Bhattacharya first explained the regional scenario of various Cross Border Energy Infrastructure (CBEI) projects and their anticipated impacts on the economy, environment and society as a whole. He mentioned that as all these projects are highly capital intensive and for very long periods of time/for long term, it is the prerogative of the governments to analyse the impacts from multi-dimensional aspects. In this context he mentioned that although there are certain attempts to estimate various impacts of such investments in this region, there are also some gaps which need to be filled to see the overall picture of such CBEI projects. It is apparent that the CBEI projects are not very helpful in terms of gaining overall global environmental benefits except for some localised air pollution benefits but he emphasised that there are some positive impacts on society in terms of employment generation and poverty reduction, which policy-makers should not ignore. However, he mentioned that as the CBEI projects helps the countries to reduce their future energy sector investment needs, these surplus funds can be utilised in other priority sectors for the betterment of the quality of human life as co-benefits of such investments. Nevertheless, Mr. Bhattacharya's presentation emphasised the effort of the regional governments to strike a balance between the energy security issue, economic feasibility, environmental and social sustainability altogether, which is indeed a daunting task, and to have a successful cross border energy infrastructure investment. Finally in the second part of his presentation he mentioned about an experiment conducted on two

separate cases of proposed CBEI projects to simulate the impacts on economy, environment and society as a whole in terms of poverty head count reduction through skilled and unskilled labour payments to corroborate the findings of the study in general.

Major comments received on this presentation include i) what is the mechanism of the government to get the required finance for such cross border energy infrastructure investment, ii) what is the scope of such cross border energy infrastructure projects- does it include physical transfer of energy, and iii) what is the rate of success of such cross border projects in the present context of political situation in Asia.

Dr. Zhou made a presentation on national CO_2 emissions accounting adjustment for trade. She started with the hidden impacts embedded in internationally-traded goods and services and their implications for global climate change, especially carbon leakage from Annex I to non-Annex I countries and the equity issue among exporting and importing countries.

She introduced two types of methodology for accounting embodied emissions, i.e. input-output analysis and life-cycle analysis. She then introduced a study on accounting national responsible emissions for ten selected Asian and Pacific countries/regions (Indonesia, Malaysia, the Philippines, Singapore, Thailand, China PRC, Taiwan, Republic of Korea, Japan and USA) based on three calculating schemes and their comparison with the current IPCC methodology based on territory responsibility. Three schemes are full consumer responsibility, shared producer and consumer responsibility and emissions embodied in bilateral trades.

Results shows that emissions embodied in international trade among ten countries were significant, and carbon leakage is happening in a non-negligible way. In addition, USA, Japan and ROK had a trade deficit of CO_2 and other countries had trade surplus. She then emphasised the importance of considering the hidden impacts associated with international trade by the UNFCCC. Neither full producer responsibility nor full consumer responsibility appears persuasive to policy makers and shared producer and consumer responsibility would be more realistic.

Comments were given such as (i) how to determine the sharing ratio between producer and consumer; (ii) how the degree of sectoral aggregation will influence the results of national responsible emissions; and (iii) how will this new accounting method be applied.

In connection with the previous presentation, Prof. Lenzen made a presentation on shared responsibility, a method proposed by him and published in several international journals. He started some facts of bilateral trades between UK and China and between US and China and China's top climate change negotiator's viewpoint on responsibilities for China-made goods that consumed by other countries.

He introduced the mechanisms of full producer responsibility and full consumer responsibility and their limitations in policy making. He then introduced the methodology of sharing responsibility between upstream producer and downstream consumer along the supply chain and how it works with

international trade using input-output analysis.

Questions were given, e.g. (i) what is the relation between shared responsibility and carbon tax; (ii) how to determine the sharing ratio; and (iii) in the shared scheme, who is the price making agent and who is the price taking agent, etc. Answers to these questions include that shared responsibility works according to the same mechanism as carbon tax and the sharing ratio could be determined through negotiations between the supply side and demand side of each transaction or between exporting and importing countries.

Dr. Lofgren presented his paper based on the use of a CGE based model named MAMS (Maquette for MDG Simulation) to analyse the policies for MDG in developing countries. At the beginning he explained the background of this model and its wide applicability in various countries especially for the analysis of the main pillars of the millennium development goal like poverty, primary school education, under-five's mortality rate, water and sanitation access. After mentioning about the model structure which is basically a recursive dynamic type in nature with upgrading stocks of population, factor input, TFP growth and GDP growth Dr. Lofgren discussed about the key policy tools of his study which he used further to observe the economy wide impacts by providing exogenous shocks on them. He discussed the results of this model based on the Dominican Republic case study. He mentioned that this study has four different types of scenario shocks like baseline, domestic tax based MDG, foreign borrowing based MDG and trade-off between other human development and infrastructure investment and MDG. Finally, he discussed the results of this simulation for the case study country to demonstrate the strengths of this MAMS model to analyse various alternatives of the MDG scenarios and trade-offs between HD and infrastructure spending. Major comments on this presentation were (i) whether MDG goals were reflected to utility function, and (ii) limitation due to recursive dynamic specification. Dr. Lofgren replied that the MDG goals were treated as independent assessment indicators without reflection to utility function, and that recursive dynamic specification lacked influence of future expectation on the current decision which may not cause serious problem.

26 June 2009 15:20-16:40

What's Happening with the CDM and JI? - Analysing Trends in the Data

Little progress has been made on improving regional distribution of CDM project activities.

Time required for CDM procedures is getting longer, which imposes a burden on project developers in terms of time, work and money.

Transaction costs need to be reduced taking into consideration of the size of CDM projects at present. Further simplification of the process is also necessary.

Review process causes significant delays in registration of CDM projects. An increasing number of projects are reviewed at the request of the CDM Executive Board (EB), for reasons related to additionality.

Improvements need to be made on judgments of the EB. Benchmark values should be set for such projects that are likely to be requested a review. The status of registration of a country or a region should also be taken into consideration.

Frameworks and procedure of major JI host countries to implement and manage JI schemes have almost been completed, though determination of, and credit issuance from JI projects have not made much progress yet.

Speakers Profiles

Panelists

Keisuke Iyadomi
Researcher of Market Mechanism Project, IGES

He is involved in the CDM capacity building activities in China, Cambodia, Lao PDR and Viet Nam. He is also author of IGES CDM Project Database, IGES CDM Project Data Analysis, IGES ERs Calculation Sheet for Grid Emission Factors, ACM0010, ACM0014, AMS-III.D. and AMS-III.H., and CDM Country Fact Sheets for China and Cambodia, He has a Master's degree in international environmental policy from the Monterey Institute of International Studies and a Bachelor of engineering in Systems Management from Nagoya Institute for Technology.

Kazuhisa Koakutsu
Researcher and the Sub-manager of Market Mechanism Project, IGES

He has been involved in the CDM capacity building activities in India, Philippines, and Indonesia since 2004. He is the author of the IGES Review and Rejected CDM Database, IGES Review and Rejected CDM Data analysis, and CDM Country Fact Sheets for the Philippines. He has a Master's degree in energy and environmental policy from University of Delaware and a Bachelor of arts in economics from Hosei University.

Nozomi Okubo
Visiting Researcher, Market Mechanism Project, IGES

She is involved in the CDM capacity building activities in India and Thailand. She is also the author of IGES JI Database and IGES Registry Data. Before entering IGES, she was working for Institute for Sustainable Energy Policies, a Tokyo-based non-governmental organisation that focuses on policy approaches to promote sustainable energy in Japan. She has a Master's degree in energy and environmental policy from University of Delaware and a Bachelor of science in landscape ecology from University of Tokyo.

Yuji Mizuno
Manager of Market Mechanism Project, IGES.

He has been engaging in international and domestic policy making related to market mechanisms such as the CDM, green investment scheme, domestic emissions trading and carbon offset. Since 2003, he has been conducting CDM capacity building activities for several developing countries in Asia. He is the author of the CDM in charts series, which is one of the most circulated materials for understanding the CDM. He now belongs to Japanese delegation for international negotiations under the UNFCCC, and participates in the debate for future market mechanism.

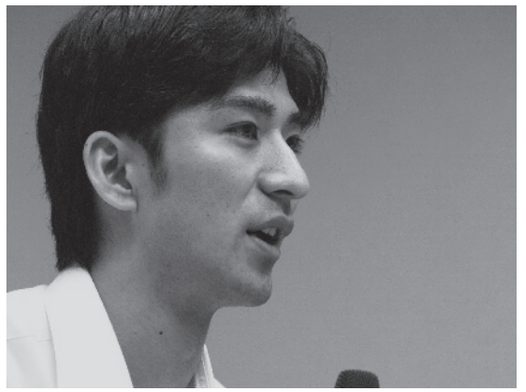
Objectives

IGSE Market Mechanism Project (MM Project) has been conducting CDM capacity building activities since 2003 to support CDM project development and to provide information and tools for the CDM in several host countries in Asia. It has also developed various databases related to the Kyoto Mechanisms and updates them periodically. Through its experiences in CDM capacity building as well as accumulation of CDM data and information, MM Project has developed its original views on CDM reform, which would reduce uncertainties and risks related to CDM projects and therefore promote CDM projects.

MM session "what is happening with the CDM/JI?" intends to provide the audience with up-to-date information on the current status of CDM and JI as well as the prospects of both mechanisms based on the databases of CDM projects, review and rejected CDM projects, and JI projects. It also provides an overview of the main issues being discussed in international negotiations under the UNFCCC.

Session Summary

In the session four researchers of MM Project made 10 or 15 minutes presentations followed by 5-minutes Q&A sessions. General discussion was held at the end of the session.



As the first speaker, Mr. Keisuke Iyadomi, researcher of MM project, presented the current status as well as the prospect of the CDM. After sharing general information on registered CDM projects from IGES CDM database, he highlighted difficulties that CDM project developers face because of delay in the registration of a project. On average, it takes as many as over 1,000 days from the start of public comment until the first issuance of the credits from a project during which time a project developer may not earn any income from the project but has to bear administrative costs and work. This delay is attributed to the review process conducted by the EB, and increasing number of projects is requested for a review. Mr. Iyadomi concluded his presentation by stating that projects to be reviewed should be reduced by improving the way of evaluating additionality, and that overall simplification of the process and reduction of transaction costs is also important.

In Q&A session one participant questioned whether the comments from the EB are not appropriate. Mr. Iyadomi explained that some projects, although they may not be without additionality, have been registered as CDM projects in the past. In addition, Mr. Iyadomi commented that some of the EB's comments are not substantial. Another participant questioned about documents required to prove additionality of a proposed power generation project other than the one to show income from power sales. Mr. Iyadomi answered that, in some cases, a document not directly related to the CDM is required such as a domestic regulation.

Mr. Kazuhisa Koakutsu, researcher and sub-manager of MM Project, presented on review and rejected CDM projects based on findings from IGES Database. Mr. Koakutsu first explained what

review is and its basic process; added that it is a process that may impose time and additional work on project developers. Then, he provided an overview of the review and rejected projects in terms of host country and project type and for what reasons those projects were requested review. Reasons related to additionality account for the majority, among which additionality of investment is the increasing reason in the last couple of years. Mr. Koakutsu pointed out that it depends on the assumption of economical factors to evaluate whether a project is additional in terms of economic standpoint. Since sometimes it is difficult for project developers to prove by themselves the appropriateness of the assumptions, the EB tends to raise doubts in this regard. Mr. Koakutsu listed possible measures to reduce reviews, such as setting benchmark values for such projects that are likely to be requested a review, and considering the status of registration of a country or a region to evaluate additionality.

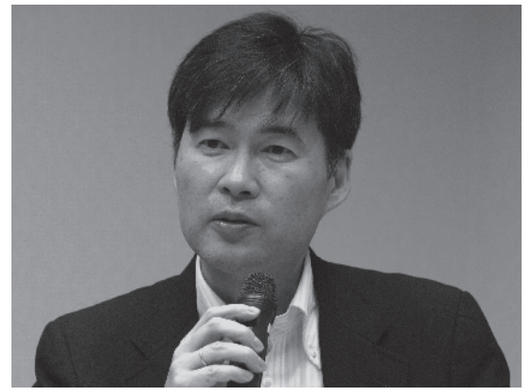
In Q&A session, questions were raised on such issues as; how to explain barriers to the EB, whether all the information on the reasons for review is made public, and whether the EB checks assumptions of baseline in evaluating the issuance of CERs. Mr. Koakutsu answered that barriers are often explained by proving that financial institution is not willing to lend money for the project, that some EB meetings are closed and so not all the information is made public, and that the EB basically only checks monitoring in evaluating the review of CERs issuance.

Ms. Nozomi Okubo, visiting researcher of MM Project, talked about another Kyoto Mechanism, Joint Implementation (JI). She first briefed the audience about the basic of JI scheme and its difference from the CDM, and two different tracks (Track 1 and Track 2) to register a JI project. Then she showed the status of JI project development and registration, participant countries, and status of credit issuance from registered JI projects. Frameworks and procedure of major JI host countries to implement and manage JI scheme have almost been completed, though registration of, and credit issuance from JI projects has not made much progress yet.

In Q&A session, the first question asked whether JI is easier to implement than the CDM, and how JI is evaluated as a Kyoto Mechanism.

Mr. Yuji Mizuno, in place of Ms. Okubo, answered this question. He explained that among three Kyoto Mechanisms – Emission Trading (ET), the CDM, and JI– the CDM and JI have high transaction costs as each project has to be evaluated, while ET has low transaction costs because of the large amount of credits handled at one trading. Regarding the difference between the CDM and JI, allowances of Annex I countries increases under the former scheme while it remains the same under the latter. Considering the substantial issue of what kind of emission reduction amount is transferred under each mechanism, international ET and JI are similar mechanisms and the CDM a different one.

The second question was about the potential of Russia in JI. Ms. Okubo explained that although its big share of Track 2 JI projects in pipeline, Russia has not given host country approval to any of its Track 2 projects. One possible reason of this stagnant situation would be the unstable political situation of the country, by which department or person in charge of JI changes quite often.



Mr. Yuji Mizuno, manager of MM Project, made a presentation on up-to-date status of international negotiations from SB30 held in Bonn in June. He first mentioned that discussions on CDM/JI had made little progress due to the time constraint but would take place in the next UNFCCC meeting to be held in August. Mr. Mizuno explained that the main issue discussed at SB30 is future commitments of developed countries under the Kyoto Protocol. Japan submitted its proposal of a “new protocol” in which the U.S. and developing countries are to make commitments in some way. Developing countries, on the other hand, want the Kyoto Protocol to remain unchanged except the emission reduction targets of developed countries inscribed in the Protocol. Mr. Mizuno also showed how the amount of emission reduction changes depending on the base year and compared the situations between Japan and EU.

In Q&A session, one participant asked Mr. Mizuno to provide his view on what will happen to the CDM in post-Kyoto scheme. Mr. Mizuno stated that he believes the CDM would continue until 2020, though how it would do so depended on negotiations. He mentioned, however, that he expects CDM activities to decrease in the future because the goal discussed at the current negotiation is the global reduction, which the current CDM would not be able to achieve.

After the presentations, general discussion was held and the speakers and participants talked about whether it is appropriate to consider a delay in CDM procedure as a burden or what causes a financial loss. The participant who raised this issue drew an example from his experiences of working in the World Bank, which he said often prolongs the period of project appraisal. He thinks such delay in any kind of project development is inevitable. To this opinion, Mr. Iyadomi expressed his view that it is still important to simplify procedure to avoid prolonged evaluation period which would take away incentives of project participants, especially in LDCs. Mr. Mizuno explained that a CDM project is different from financial loans in that the former can earn CERs only after it goes into operation and reduces GHG emissions, while the latter can earn investment money and enables construction. Therefore, a delay in a CDM project evaluation has more serious impacts on the project by delaying the income generation.

27 June 2009 9:30-11:20

Towards Sustainable Consumption in Developing Asia: Challenges and Needs

Consumption and material flows take place within a global system of economics and trade, with most Asian countries now depending on exports to remain competitive. The path to sustainable consumption must address the challenges of the current global system.

Downstream end-of-pipe approaches need to be shifted to upstream preventive approaches.

Efficiency improvements alone tend to generate "rebound effects" that result in increases in aggregate energy / resource utilisation.

Planning and policy making should be implemented to encourage "radical innovation" to support "socio-technical systems transformation" (in the key sectors of food/agriculture, energy and transport/mobility), and scale up sustainable social innovations on the micro level (e.g. life-style experiments at community level) to the macro level.

Contemporary understanding of prosperity and quality of life needs to be redefined, and there also should be a shift of emphasis from product and process improvements ("green" consumerism) towards human and societal well-being, including health and security.

Sustainable consumption (SC) must be positively framed, with development of a common and shared vision for the region. This is an essential step towards which all key stakeholders can aspire. Setting clear and measurable sustainability targets to monitor the progress towards this vision is vital.

To promote SC effectively, one of the keys is to devise a national coordinating function. This can be achieved by designating a strategic govermental body as SC policy coordinator to ensure that SC is integrated as a cross-cutting theme in all national development strategies.

Speakers Profiles

Moderator

Monzurul Huq
Long-term Tokyo Correspondent of the Bangladeshi Daily Newspapers Daily Star and Prothom Alo

Panelists

Magnus Bengtsson
Manager, Waste and Resources Project, IGES

Before joining IGES in 2007 he was a post doctoral research fellow at the University of Tokyo. He received his degree from Chalmers University in Sweden for a thesis on Life Cycle Assessment and value issues in sustainability assessments.

Lewis Akenji
Researcher, Waste and Resources Project, IGES

He recently joined IGES. Before that he was based in Budapest with the Central and Eastern European Network for Sustainable Consumption where he coordinated the establishment of the CEE sub-regional multi-stakeholder platform of collaboration for sustainable consumption policy. He has been Editor-in-Chief of *Conscious Consumer* magazine and International Relations manager of the Association of Conscious Consumers.

Pattamawadee Suzuki
Associate Professor and Dean of the Faculty of Economics, Thammasat University, Bangkok

She received her PhD from Kyoto University in 1992. Her research focuses on rural & agricultural development and sufficiency economy.

Sylvia Lorek
Head of Sustainable Consumption Research, Sustainable Europe Research Institute (SERI), Austria

She has been working as a researcher and policy consultant for sustainable consumption since 1993. With a diploma in household economics as well as macro economics, she is well prepared for the analysis of the contexts in which the scientific and societal discourses about sustainable consumption take place. Before heading the Sustainable Europe Research Institute in Germany, she worked at the Wuppertal Institute. Her research interests in sustainable consumption go hand-in-hand with societal engagement, such as being on the board of the Fair Trade labelling organisation in Germany.

Maurie Cohen
Associate Professor of Environmental Policy and Sustainability in the Department of Chemistry and Environmental Science, and Director of the Graduate Environmental Policy Studies Programme at New Jersey Institute of Technology

He holds a PhD in regional science from the University of Pennsylvania and serves as the Editor of the journal *Sustainability: Science, Practice and Policy*.

Objectives

Developing Asia is experiencing rapid industrialisation, urbanisation, and changes in lifestyles. The result is various environmental burdens on the region caused by increasing production, expanding construction and traffic in urban areas, increasing waste from durable consumer goods such as electronics and cars, food, and packaging. In Europe, the US or through UN processes, policies focusing on lifecycles of products have been developed along the concept of sustainable consumption and production. However, these issues associated with consumption must be discussed in a different context when it comes to societies with large socio-economic disparity.

This session explored the meaning of sustainable consumption as it pertains to Asia and the Pacific by inviting speakers who have been researching the field from the EU, the US as well as Asia. The session also discussed how IGES as an environmental policy think-tank can contribute to this field of policy research.

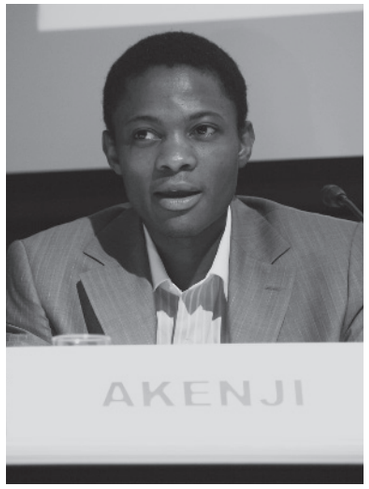
Session Summary

Magnus Bengtsson began by pointing out that Asia experiences rapid economic development and faces a double challenge of sustainable consumption; meeting the material needs of the poor while at the same time changing the consumption patterns of the wealthy. Growing amounts of natural resources are consumed in the rapidly expanding economies, while almost 1 billion people are living in poverty. The current research of IGES related to resource consumption focuses on waste management and resource efficiency. However, to radically reduce the use of natural resources and the pressure of economic activities on ecosystems, it is necessary to give more attention to the upstream part of products' life-cycles including product design and consumption patterns. IGES is therefore now in the process of repositioning its research and will lay more emphasis on the development of more sustainable production and consumption patterns in this region.

From the point of view of policy research, it is important to analyse the various ways in which governments can influence consumers' behavior (through education, information, taxes etc.) and the production strategies of the private sector (through economic instruments, procurement standards, voluntary agreements, bans etc.) and to evaluate the effectiveness of such policy interventions. However, as a strategic regional institute IGES also needs to formulate critical questions related with alternative development pathways, quality of life and human well-being. In this respect, the research of IGES should identify institutional and structural barriers to sustainable consumption and production and to suggest ways of overcoming such barriers.

Lewis Akenji then gave his presentation "Towards Effective International Sustainable Consumption Policy: Beyond the Marrakech Process", stating that in the 16 years since the UN Earth Summit highlighted production and consumption patterns as a major cause of environmental deterioration, and six years after this message was reinforced at the World Summit for Sustainable Development, consumption and production patterns are still either unsustainable or getting worse. While there's a

fast growing consumer class in parts of Asia, there are also areas where basic needs still need to be met. The Marrakech Process is a global effort to develop a 10-year framework of programmes that support national and regional initiatives to shift towards SCP. The participation of Asia and Pacific countries is still limited in the international policy process. Japan, Republic of Korea or any country could start an international Task Force on the Asia Pacific region, and lead the development of a regional strategy to change consumption and production patterns.



There have been several lessons learnt over the last decade of trial-and-error in SCP policy. How SCP is framed, its presentation to stakeholders will determine whether it is accepted or rejected. It therefore needs good communication and positive examples. It is very important to involve stakeholders in the policy process, not just to increase possibility of feasible policy options but also to gain legitimacy. Some governments sit in the office, draw up plans and just send them out, and are then surprised when they are not implemented. To strengthen SCP, it should be taken high up the hierarchy in the government, to give it a good position from where to serve as a cross-cutting issue and one of the overarching objectives of sustainable development. An integrated approach should be taken, looking also at the complexity of the system rather than just focusing on consumers and downstream approaches. National focal points on SCP should be developed.

Regional collaboration is very important, including collaborative research, exchange information and best practices, regional frameworks of support for implementation of national policies and action plans.

Pattamawadee Suzuki then talked about Sufficiency Economy and Sustainable Consumption: Experiences of Thailand and pointed out that it is good that the organisers of ISAP included SCP as a major theme of this conference because it is an increasingly important area but not always talked about in the region. Sufficiency Economy is a concept based on Buddhist values to seek the middle path (not extreme) to a self content. The concept is different from self-sufficiency. It was proposed by the King of Thailand and has received attention since the economic crisis in 1997. “Sufficiency” means moderation, reasonableness, and immunity from internal and external shocks. To achieve this, a careful, prudent application of knowledge is essential. It can be applied at all levels of society from individual through community up to national development.

The concept emphasises the importance of wisdom, to change individual behaviour through shifting thoughts and awareness and by depending on external economic institutions. Therefore, it aims to achieve moderate consumption and production as well as an economy with diversity and balance.

According to Buddhist economics, the middle path leads to moderate consumption. For example, too much food intake can result in health problems both in the short and the long run; on the other hand, too little consumption will lead to nutrient deficiency that can be harmful to physical and mental health. Similarly, too much accumulation of material wealth will bring more pain as a result of cravings. With moderate consumption there is enough to share with those in need. As such excessive production is not needed, which will reduce “consumption” of resources as a whole.

The Thai government has tried to institutionalise the concept by developing policies under the National Economic and Social Development Board (NESDB), through a Sufficiency Economy Institute in 2007, by incorporating it into the 2008 constitution and a sufficiency economy development fund in 2009. The NESDB approach focuses on education, and researchers undertake action-oriented research in the actual community.

Sylvia Lorek, gave her presentation on Sustainable Consumption: The Challenges. She stated that when one mentions sustainable consumption, it is understood in many different ways. Some understand resource consumption, others consumption in economic terms such as private and public consumption and yet others simply think of household consumption. But sustainable consumption shall be discussed from the point of view of resource consumption, otherwise there is a risk of getting lost on important but marginal issues, such as changing light bulbs at home. Sustainable consumption is efficient resource use in order to meet needs and improve human well-being. It involves a chain of sourcing efficiency, production efficiency, product efficiency, service efficiency and efficient human well-being.

Sustainable consumption must give attention to social aspects, not just the environmental and economic aspects. The conventional approach to intervention has focused too much on the consumption of commodities. First it was narrowly interpreted as sustainable production, and then life cycle analysis (especially after the world summit in 2002).

Recently there is a global effort called the Marrakech Process which has moved towards greening the markets. While such interventions are necessary, they are not sufficient; they only build a weak sustainable consumption approach. Instead of a “good life” it seeks a “better life”. Weak SC relies on the economic growth paradigm of development, which has been proven to be problematic. The conventional discussion on SCP has a weakness in terms of optimistic reliance on technological innovation. Too much focus on efficiency would not solve the rebound effect of the increasing consumption.

To overcome this weakness, research on SC is needed to focus on effective contribution to human well-being, efficiency in service industry, and social aspects of consumption. It is necessary for research to develop clear sustainability targets and indicators. Collaborative research should bring across the urgent need for strong SC, and transform social innovations at a micro level to a macro scale.

Next, Maurie Cohen commented that policy making on SC has been focused on decoupling economic growth and resource and energy utilisation, using mostly technical tools, especially life-cycle analysis. There has been awareness-raising through education of consumers, as well as voluntary initiatives and partnerships, sustainable public procurement, etc. for developing countries, with the focus on poverty alleviation, technology transfer, or knowledge sharing. However, policy research should focus not on these "weak" policies on SC but rather on policies to generate fundamental changes towards strong sustainability.

There is new interdisciplinary research that underpins the need for strong SC. Looking at the ecological footprint model, weak SC is insufficient in meeting the global biophysical demands associated with increasing population growth, socioeconomic inequality, and greenhouse gas emissions. There are not enough resources to consume along the same destructive material development path as industrialised societies. As demonstrated by economic and sociological research, individual happiness not necessary link directly to material consumption. A graphical representation of per capita income of a country plotted against subjected well-being of its people shows that people in rich countries like Japan, France, Spain, are not happier than those in low per capita income countries like Philippines, Brazil or Ghana where basic needs have been met. Social psychological research has questioned the popular wisdom that wider consumer choice increases well-being, and concluded that endless options as we have today on supermarket shelves rather overwhelm consumers and lead to paralysis. Research in international political economy highlights the need for a new economic paradigm. Especially for countries that are export-oriented, as is the case in Asia-Pacific, the United States will be unable to serve in the future as "the engine of the global economy" as its consumers will no longer be able to afford to absorb the surplus production of its trading partners.

Therefore SC research must help move policy from weak to strong SC thus: recognising efficiency improvements alone tend to generate "rebound effects" that result in increases in aggregate energy/resource utilisation; facilitating planning and policy making to encourage "radical innovation" to support "socio-technical system innovation"; moving from an emphasis on product and process improvements ("green" consumerism) toward human and societal well-being; redefining contemporary understanding of prosperity and quality of life; connecting material consumption with work-time and current interest in "work-life balance"; transcending lifestyles based on consumerism and the acquisition of energy/resource intensive material goods.

Discussion: Key statements in Q&A responses

It was agreed that to achieve a sustainable society, we need to show there is no option other than through SC. This involves demonstrating that it is not necessarily about making sacrifices. What we need is an approach to promote the well-being of people/society. Throughput history society has always sought tools for change. The objective of SC research is to find the appropriate tools to bring socio-technical changes, in order to avert a future crisis.

Regarding models of economic growth, there is concern that a moderate life may lead to slow production, and that a sufficiency economy can slow or damage the economy. However, the objectives and goals of development need to be reconsidered to include sustainability. By moderate consumption, resources which go into excessive material consumption can be used for necessary services such as health, etc. By doing so, theoretically, the economic system can be sustainable.

However, there is still no economic model or analysis which is not based on the idea of growth. What still needs to be done is not just aim at reducing economic growth but not putting materials into consumption.

As far as lessons learnt, it was suggested to try to re-interpret SC by revealing challenges in association with institutional framework. The recent financial crisis is a result of US-style over consumption, and exporting countries in Asia are depending on western consumers to sustain economic growth here. Research needs to help find alternative paths to development.

In addition, policy and research in SC should not put too much time and emphasis on marginal issues such as eco-label and energy-efficient electric bulbs. We should focus on how to make fundamental changes and shifts.

It was pointed out that regional collaboration is crucial. It is important to establish multi-layered collaboration among stakeholders, to generate positive connotations and examples, to communicate that SC is not boring and unattractive. In order to be more attractive SC needs to incorporate a wide range of values including health, safety, security, and avoidance of regional conflicts. Improvement of social relations and work-life balance should also be emphasised. Governments play a vital role by establishing proper rules of the game for a transition to sustainability but they need support from the citizens. A strong civil society and the fostering of a well-informed and responsible citizenry are indispensable for a shift to sustainability and should be promoted not only at the national level but also in the region.

A final comment was that in regional cooperation, it is important first to establish a common vision for and by the region for the next 50 to 100 years, which all stakeholders can clearly understand and identify with. Then set concrete steps and measurable targets within a clear strategy of how to achieve such a vision. Through collaborative research organisations like IGES can play a role in formulating alternative policies and pathways to that new paradigm, and in demonstrating the need to shift from marginal and downstream approaches to core structural changes. Positive, action-driven collaboration within sectors, across sectors, involving all sectors is imperative to shifting all of society towards a sustainable path.

27 June 2009 11:30-12:50

New Form of Multi-Stakeholder Partnership for

Environmental Leadership Development

towards Establishing Sustainable Asia

"Environmental Leaders" with various special talents or skills who have the capacity to solve a diverse set of issues are needed for the creation of a sustainable society.

Practical training should be incorporated into higher education, as a supplement to the traditional form of education which focuses on lectures. This is because many kinds of human skills are essential in the development of environmental leaders.

Environmental human resources should be strengthened to match social needs through cooperation with industries, academia, and the public and private sectors.

Innovation in technology, industry, social systems, policies and various fields need to be promoted through the development of environmental leaders in higher education.

Development of environmental leaders through multi-stakeholder partnership is effective in putting the above-mentioned issues into practice.

Improving the organisational capacity of institutes / organisations involved in the development of environmental human resources, such as educational institutes, is vital to promote environmental leaders who can play an active role in various fields of society. To achieve this, it is essential to strengthen networks among existing initiatives.

Consortia with industry, academia, and the public and private sectors are important as incubating organisations to strengthen partnership ties.

Promotion of multi-stakeholder partnerships with industry, academia, and the public and private sectors, will mobilise the development and use of environmental leaders and will contribute to the greening of businesses and social systems.

Speakers Profiles

Moderator

Charmine Koda
Journalist

Panelists

Ken Morishita
Secretary-General, Environmental Consortium for Leadership Development (EcoLeaD); IGES Fellow

Hidefumi Imura
Professor, Nagoya University

S. Kumar
Professor and Dean, School of Environment, Resources, and Development, Asian Institute of Technology

Fengting Li
Professor, Vice Dean, College of Environmental Science and Engineering,
UNEP-TONJI Institute of Environment for Sustainable Development

Yoshihiro Natori
Senior Research Fellow, United Nations University

Itaru Yasui
Professor Emeritus, University of Tokyo

Objectives

Environmental capacity development has been recognised as one of the important policy strategies to tackle environmental and socioeconomic challenges not only in Asia and the Pacific region, but also in the whole world. To establish low-carbon society, several processes such as technological innovation, social structural change, as well as lifestyle shift are necessary, and environmental human resource development is essential. The Japanese government has recently put special focus on university education, in corporation with various social stakeholders to nurture environmental leaders both within Japan and countries in Asia and the Pacific. As a part of the policy implementation, in March 2009, the preparatory group for the “Multi-stakeholder Consortium for Environmental Leadership Development” was launched.

This session will introduce the newly established “Multi-stakeholder Consortium for Environmental Leadership Development” while sharing examples of the multi-stakeholder partnership in the field of environmental capacity development in higher education, such as cases in Japan, China, Thailand, and overall partnership development efforts in Asian region.

The discussion will focus on overall national and regional policies on environmental human resource development, as well as experiences and challenges for the multi-stakeholder partnership development. By sharing the different cases, the session hopes to establish and strengthen the further collaboration opportunities.

Session Summary

Capacity development in the field of environment is recognised as an important subject in forming a sustainable society, not only in countries in the Asia-Pacific region that are facing various environmental and socio-economic problems, but also in the whole world. In particular, to bring about the creation of a low-carbon society, technological innovations, the development of social systems, and changes to individual lifestyles are required, within which development of environmental leaders who can initiate various social shifts is a pressing need. In order to develop environmental leaders within Japan and also in the other Asian countries, in recent years the Japanese government has put capacity development in higher education through multi-stakeholder partnership as one of its prioritised policies related to establishment of low-carbon society. As a part of policy implementation, a preparatory meeting of the “Environmental Consortium for Leadership Development,” spearheaded by the Ministry of the Environment of Japan, was launched in March 2009.

Moderated by Ms. Charmine Koda, this session provided an outline of the newly-developed consortium and shared cases on approaches in the development of environmental leadership carried out in cooperation with business sectors, academia, and the public and private sectors in Japan, China, Thailand, and the entire Asian region. By examining related policies in each Asian country and across the region, and by sharing the experiences and problems faced in the development of environmental leaders in

a form of multi-stakeholder partnership, this session aimed to construct and strengthen the network of approaches in Asian countries.

At the start of the session, Ms. Charmine Koda explained that environmental leaders will have a variety of fields to exercise their abilities, such as technology development, technology transfer, supply chain management, academic research, policy implementation, inheriting traditional Asian value that put emphasis on harmony with nature, promoting voluntary activities at local, national, and regional levels.

Following that the introduction by Ms. Koda, Mr. Ken Morishita, Secretary-General of Environmental Consortium for Leadership Development provided details on the establishment and activities of the preparatory meeting. Mr. Morishita indicated the importance of the consortium as a forum for information exchange for the development of environmental leaders at universities in Japan, in response to the currently inadequate state of school-to-school cooperation and linkages both within and outside universities. Mr. Morishita also explained that Green MBAs and T-shaped environmental leadership development programmes are expected to be promoted to facilitate the development of elements necessary for environmental leaders.

Next, Professor Hidefumi Imura of Nagoya University gave an explanation on “Global Environmental Leaders Programme”, under the presentation titled “towards the establishment of the Chubu Consortium for Environmental Leaders Development”. According to Professor Imura, this programme is characterised by the following: (1) approaches to identifying solutions to problems, (2) cross-faculty cooperation, (3) networking with internal and external organisations, and (4) developing international human resources. Educational activities that link up with businesses, local governments, and NPOs in the Chubu area on masters’ degrees and fieldwork are a part of this programme. Professor Imura explained that the establishment of the Chubu Consortium for Environmental Leaders Development was formulated to facilitate smooth implementation of these regional linkages.

Next, Professor S. Kumar who is serving as Dean of School of Environment, Resources and Development at Asian Institute of Technology (AIT) introduced multi-stakeholder activities carried out in AIT. Dean Kumar reported that joint masters’ programmes are being carried out with other universities in a number of areas related to the environment and sustainable development, such as disaster preparedness, mitigation and management, and energy and the environment, as well as joint international research. In addition, Dean Kumar elaborated the main issues on the importance of developing partnerships, namely a long-term vision, adequate funding, dissemination of outcomes, and capacity of personnel to carry out activities in the development of multi-stakeholder partnerships.

The next presentation was made by Professor Fengting Li, Associate Dean of College of Environmental Science and Engineering, UNEP-TONJI Institute of Environment for Sustainable Development. He explained the Tonji University’s efforts in developing partnerships for international master’s degree programmes. Courses are comprised of cross-cutting subjects in natural science and social sciences aiming towards the development of environmental leaders to create a sustainable society. The course subjects include environmental ethics, environmental sociology, environmental science, environmental economies and circular economies, and language training and so forth. Professor Li described that the programme implements various leadership programmes, such as programmes for people in charge of environmental projects/programmes not only in Asia, but also in Africa, through the participation of students and teachers from all parts of the world. Professor Li stressed that China is a country which achieved rapid economic development in a short period of time, and simultaneously promotes environmental protection and international cooperation. A number of international organisations and educational institutions both within and outside the country have great expectations of the programmes at Tonji University as an institute located in China.

The last presentation was carried out by Mr. Yoshihiro Natori, Senior Research Fellow of United Nations University Institute of Advanced Studies. Mr. Natori gave an introduction on the activities of ProSPER. Net, a network of 18 advanced educational institutions in the Asia-Pacific region, which was established with an objective to integrate the curriculum of graduate schools under the theme of sustainable development. Mr. Natori explained that at present, the three major joint programmes being carried out are (1) curriculum development and delivery of the school of public policy and sustainable development, (2) integration of “sustainable development” in business school curricula, and (3) training on sustainable development for educators and researchers.

Following the presentations by the panellists, Professor Itaru Yasui, Professor Emeritus of Tokyo University delivered remarks on how the Environmental Consortium for Leadership Development should proceed its activities. Professor Yasui indicated that the consortium is effective as a forum to conduct discussions on the basic ideas regarding the various concepts of “sustainability,” and that the consortium should act as a platform to provide opportunities and a place to exchange information and experiences, as well as facilitate face-to-face communication.

Questions were then taken from the floor, during which an opinion was expressed about the potential to establish a consortium that could connect students who are inclined towards the environment as a career, as currently it is very difficult to find employment even though students have taken part in environmental programmes at universities.

Professor Imura responded to this question by saying that the trial runs of the International Environmental Leaders Programme at Nagoya University and the Chubu Consortium for Environmental Leaders Development are designed to tie into employment in close coordination with regional society. However, adjustments or alterations to the programmes are essential due to the special characteristics of environmental studies that are comprised of cross-cutting subjects in science and the social sciences, as well as differences in the quality of international programmes, student levels and majors, and the existence of language problems.

The advantage to developing environmental leaders through the organisation of a consortium is to strengthen the overall coordination among individual organisations. Further, since business and industrial sectors play major roles in the development of a sustainable society, activities to strengthen cooperation with private sectors are important in the consortium. With the consent opinion of the panellists that it is necessary to consider the advantages for businesses to join the consortium, the session verified that endeavours should be made to create and strengthen new networks.

27 June 2009 14:00-15:00

Do Economic Incentives Promote Sustainable Use of Groundwater?

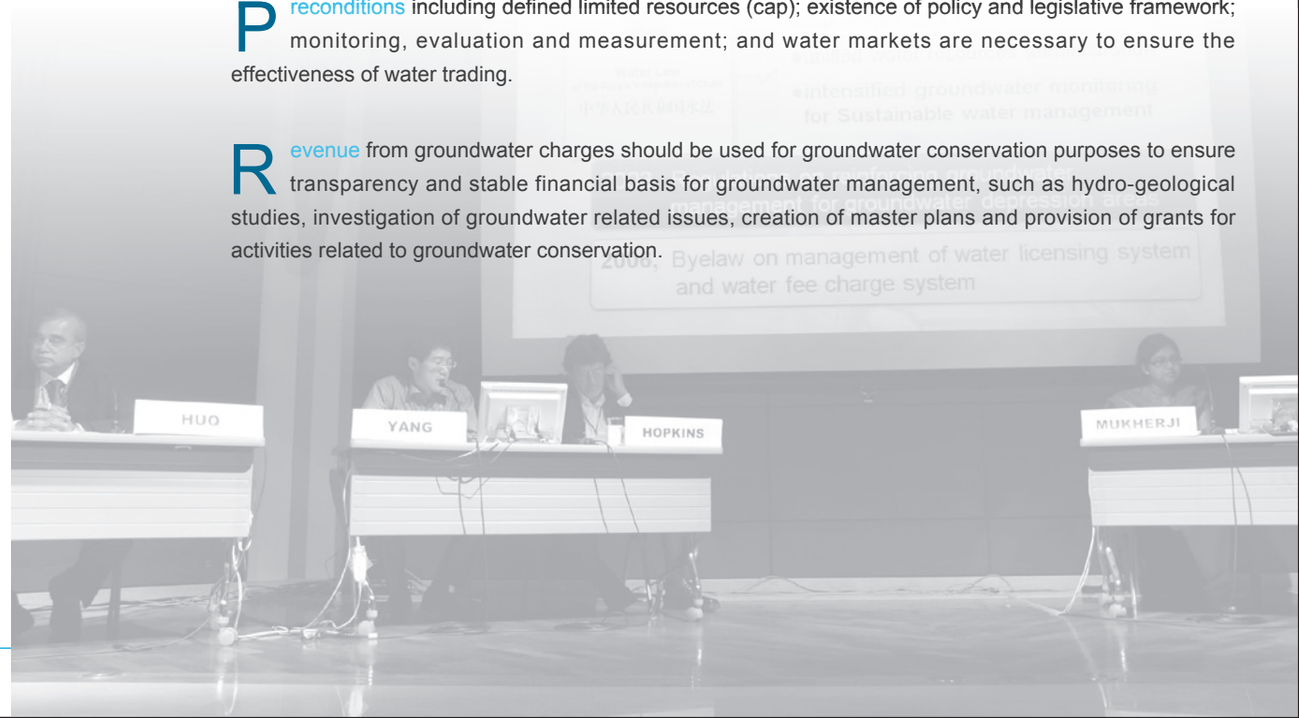
Willingness to treat water as a commodity backed by substantial political will is important.

Economic instruments (such as groundwater pricing, tax, water markets etc) are very effective tools to control groundwater over abstraction and overuse. In order to successfully implement these tools, it is recommended that they are combined with other policy instruments.

Groundwater pricing schemes should consider the water availability, water demand and willingness or ability to pay in the particular area. For example, groundwater price can be set higher for private use than public use, and higher in over-exploited aquifers than developing aquifers.

Preconditions including defined limited resources (cap); existence of policy and legislative framework; monitoring, evaluation and measurement; and water markets are necessary to ensure the effectiveness of water trading.

Revenue from groundwater charges should be used for groundwater conservation purposes to ensure transparency and stable financial basis for groundwater management, such as hydro-geological studies, investigation of groundwater related issues, creation of master plans and provision of grants for activities related to groundwater conservation.



Speakers Profiles

Moderator

Monzurul Huq
Long-term Tokyo Correspondent of the Bangladeshi Daily Newspapers Daily Star and Prothom Alo

Panelists

Jianqing Yang
Deputy Director, Centre for Groundwater Monitoring of Ministry of Water Resources of China

Richard Hopkins
Chief Executive Officer, The International Centre of Excellence in Water Resources Management (ICE WaRM)

Aditi Mukherji
Researcher, Social Scientist, International Water Management Institute (IWMI)

Yatsuka Kataoka
Project Manager, Freshwater Project, IGES

Objectives

This session aimed at discussing how the economic instruments can promote sustainable consumption of groundwater by taking some examples from the Asia and the Pacific region. The economic instruments discussed were pricing the groundwater resource itself, indirect pricing of groundwater such as pricing electricity to pump groundwater, groundwater trading and introducing groundwater preservation charges etc.

Session Summary

Dr. Jianquing Yang discussed on sustainable groundwater management in China. With a brief background on water resources of China, Dr. Yang highlighted the problems due to groundwater overexploitation such as decrease in groundwater level, drying up of river channel, land subsidence, groundwater pollution and saline water intrusion. Dr. Yang mentioned that the government had introduced water use fee since 1980 and the water law of 2002 reinforced its legitimacy. Later in 2008 water charge system was stipulated based on level of economic development and condition of available water resources in the region. He explained the criteria of charging water in Shandong Province and these are: higher price of water for private use than public use, higher price of groundwater than surface water, groundwater price is twice in the groundwater depleted areas, water price is higher in more developed area than developing area. In Weihai city of Shandong province the groundwater price is CNY1.6/m^3 in groundwater depleted areas as compared to CNY0.8/m^3 in non-depleted areas. As a result of this there is a decrease in groundwater withdrawal, recovery of groundwater levels and local environment. At the end of presentation, Dr. Yang emphasised that the current water price in China is low when an increase in water demand is considered and there is an urgent need to increase the price of water particularly for the amount of water that exceeded quota management.

Dr. Richard Hopkins presented about the economic instruments for (ground)water management in Australia. With a brief notes on water in Australia, Dr. Hopkins discussed the preconditions for water trading. These preconditions are: defined limited resources (cap), existence of policy and legislative framework, measurement and science, connectivity and infrastructure and water markets. In Australia, there has been a good progress in surface water trading but there are several issues in groundwater trading such as groundwater and surface water connectivity and complexity of its physics and management, exclusion of large ‘fossil water’ in

aquifers, credits and debits for aquifer/river transfers, water quality issues and measurement and science requirements. Dr. Hopkins concluded the presentation with the thoughts that the most important is willingness to treat water as an economic good, need of substantial political will and water markets can serve as a complementary tool for sustainable water management.

Dr. Aditi Mukherji discussed electricity pricing and groundwater use in India. With the case of two Indian states, Dr. Aditi explained the electricity sector reforms and their impact on groundwater users. Under Jyotigram experiment, Gujarat state segregated domestic and commercial electricity feeders from agricultural feeders. The domestic and commercial electricity feeder used to get high quality electricity supply for 24 hours in a day while agriculture feeders used to get power supply only for 8 hours in a day. This reduced pumping and also helped ease subsidy burden on the government. In West Bengal, the government metered all electric tubewells and imposed a Time of the Day tariff. The main effect of metering was efficient use of groundwater and the shrinkage in the size of informal groundwater markets. However in both the states it was found that small and marginal farmers loose access to groundwater due to electricity sector reforms and a key challenge is to manage externalities of groundwater use using economic incentives without significantly harming livelihood options of poor people.

Ms. Yatsuka Kataoka presented a groundwater changes in Bangkok as a case of groundwater management in Asian cities. Ms. Kataoka highlighted the key problems such as land subsidence, water level drawdown and difficulty associated in groundwater extraction due to over extraction of groundwater in Bangkok. Ms. Kataoka explained that the department of groundwater resources (DGR) introduced a groundwater charging system in addition to other regulatory measures to control the excessive extraction of groundwater. In addition to groundwater charge, DGR introduced a new and additional charge called as 'groundwater preservation charge' and the revenue from this preservation charge is supposed to be used only for groundwater conservation purposes such as hydro-geological studies, investigation of groundwater related issues, creation of master plans and provision of grants for activities related to groundwater conservation. The higher price of groundwater motivated the users to reduce their groundwater abstraction and use more water from public water supply system and there was a reduction in groundwater use since the groundwater charge was raised in 2000. At the end, Ms Kataoka mentioned that the next challenge of Bangkok's groundwater management is to promote sustainable use of groundwater rather than control of groundwater use just for land subsidence mitigation.

Discussion Summary

In Australia the total water use was not significantly affected as a result of user right separation from land and water. However it was recognised that value of water is higher than the crops.

In two states of India, it was found out that the small and marginal farmers loose access to groundwater after electricity supply reforms. Therefore the question was raised whether it is possible to remove subsidies in electricity and establish public water supply system. Dr. Aditi mentioned that it is not possible to remove subsidies in electricity as it is a political agenda. However public investment in tube well and water supply is possible in both the states of India.

It was asked that whether the pumping capacity (5 house power(hp) instead of 1hp) affects the rate of pumping of groundwater in two states of India. Dr. Aditi explained that the pumping capacity affects in alluvial aquifers, higher the pumping capacity higher discharge of groundwater. However the discharge will not be affected in hard rock aquifers. Therefore metering is only one mechanism to monitor and ensure the correct charging of water use.

27 June 2009 15:20-17:20

Ecosystem Services and Biodiversity
– Challenges and International Cooperation

Evaluation of biodiversity and ecosystem services must be improved to provide incentives for actions aimed at conservation and sustainable use.

Integrated ecosystem approaches need to be reinforced to improve wildlife and habitat conservation and human well-being.

Pursuing a nexus of biodiversity and ecosystem service conservation, and food and energy production is vital.

Communication strategies should be improved to reach out a wide range of stakeholders at the national and international levels.

Good practice analysis and disseminating such information needs to be developed more widely to promote replication of such good practices.

Exploring the development and application of innovative funding is essential, and partnership building mechanisms at the national and international levels are considered useful.

Speakers Profiles

Opening Remarks

Tsunao Watanabe
Director of the Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment, Japan

Keynote Remarks

Kazuhiko Takeuchi
Vice Rector of the United Nations University

Moderator

Charmine Koda
Journalist

Panelists

Zakri Abdul Hamid
Director, Centre for Global Sustainability Studies Universiti Sains Malaysia

Ahmed Djoghlaf
Executive Secretary of the Convention on Biological Diversity

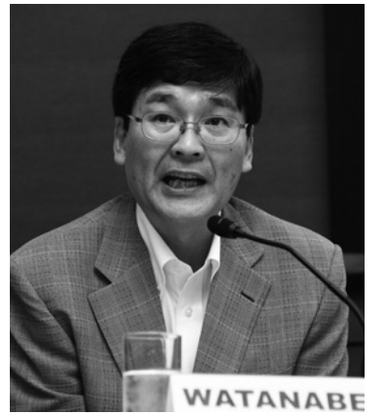
Tanveer Arif
CEO, Society for Conservation and Protection of Environment (SCOPE)

Masanori Kobayashi
Coordinator, Programme Management Office, IGES

Discussant

Cielito Habito
Professor and Director, Ateneo Center for Economic Research and Development

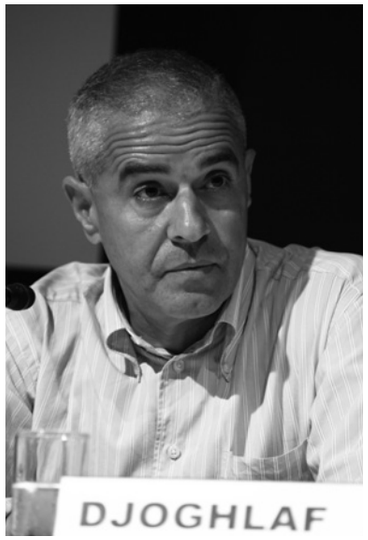
Session Summary



Mr. Tsunao Watanabe, Director of the Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment, Japan, delivered the opening remarks for the Open Panel Session on “Ecosystem Services and Biodiversity – Challenges and International Cooperation”. He stressed that the panel discussions were expected to contribute to advancing the preparatory work for the 10th session of the Conference of the parties to the Convention on Biological Diversity, so called CBD/COP10, in Nagoya, Japan, in October 2010.

Prof. Kazuhiko Takeuchi, Vice Rector of the United Nations University, Deputy Executive Director, Integrated Research System for Sustainable Science, and Professor, Graduate School of Agricultural and Life Sciences, University of Tokyo, Japan, delivered the keynote speech. He focused on the issue of rebuilding the relationship between humans and nature in Asia and CBD’s post-2010 target. He outlined a vision for creating sustainable society noting that Japan is leading in 3R initiatives and should now also take the lead in creating low-carbon society and nature-harmonious society. Overall the speech centered on Japan’s Satoyama Initiative and the possible dissemination of its concept to the international community, in particular to Asia and the Pacific. Emphasis was placed on the need to work together to achieve a sustainable society by combining traditional and modern ways of life. Prof. Takeuchi concluded by proposing a Global No Net Loss.

The panel discussion following the keynote speech was moderated by Ms. Charmine Koda. Dr. Zakri Abdul Hamid, Director, Centre for Global Sustainability Studies Universiti Sains Malaysia, presented on key aspects and challenges of the 2010 Biodiversity Target. Initially, he introduced the Convention on Biological Diversity and the 2010 Biodiversity Target noting that the 2010 Target has been the most important decision of the COP. He then observed that the current nature loss bigger issue than current banking crisis. Quoting the Millennium Assessment Framework, he underlined that “unprecedented additional efforts would be required to achieve, by 2010, a significant reduction in the rate of biodiversity loss at all levels”. He strongly argued for revising the target in a way that by 2020 a demonstrable and significant reduction of the current rate of biodiversity loss at the global, regional and national level and by 2050 a reverse in the loss of biodiversity at the global, regional and national level can be achieved.



Mr. Ahmed Djoghlaf, Executive Secretary of the Convention on Biological Diversity reflected on the CBD, COP10 and beyond. Re-emphasising that ecosystem services are in jeopardy even though irreplaceable, he outlined the various international efforts related to biodiversity and ecosystem conservation. In particular, the role of the Convention on Biological Diversity was highlighted in this regard. He also noted that it is possible to recognise an increased political support for achieving the Convention's objectives. Additionally, he also presented on the four primary goals of the International Year on Biodiversity and COP10, (1) progress assessment on the 2010 biodiversity target, (2) shaping the post-2010 biodiversity agenda, (3) establishing and international regime on access and benefit-sharing, (4) initiating dialogue on steps for the post-2010 period by heads of states. Finally, he expressed the hope that in 2010, Nagoya will enter history in the environmental movement as Kyoto did in 1997.

Mr. Tanveer Arif, CEO, Society for Conservation and Protection of Environment (SCOPE), Pakistan, introduced ways of biodiversity conservation based on the example of the APFED Showcase project directed at pursuing the indigenous community of District Tharparkar, Pakistan, to protect wildlife. Outlining the background of the project, he stressed that even though their project is located in a declared wildlife sanctuary, hunting is common place and biodiversity significantly threatened.

Due to their functioning as guides for hunters, the indigenous community had been identified as crucial for any biodiversity conservation efforts. Mr. Arif underscored that in this case only through effective social mobilisation, advocacy and awareness rising and development assistance directed at the indigenous community, the project could be successful. He concluded by emphasising that as a result of their efforts, indigenous communities are now protecting the wildlife and help to sustain local ecology.

Mr. Masanori Kobayashi, Coordinator, Programme Management Office, Institute for Global Environmental Strategies, focused on APFED lessons and findings on biodiversity conservation and ecosystem management. He underlined that only by linking biodiversity conservation with poverty alleviation and health issues,

by empowering communities for more sustainable ecosystem management, by creating and diversifying income generating activities for alternative livelihood, by utilising innovative and international schemes and by facilitating a community based multi-stakeholder collaboration, biodiversity loss can be successfully tackled. Further, he noted that policy mix development, financing mechanisms, technology, passion and incentives are crucial factors for success.

Discussions

Prof. Dr. Cielito Habito, Professor and Director, Ateneo Center for Economic Research and Development of the Philippines and APFED Member recapitulated a number of issues that are key to promoting effective policy measures and actions aimed at biodiversity conservation and sustainable ecosystem management with a view to provoking discussions of which key elements can be summarised as follows:

Mainstreaming

Biodiversity needs to be mainstreamed in sustainability policy processes at the national and international levels. Communication strategies need to be bolstered and the proclamation of 2010 as International Year of Biodiversity should be capitalised upon.

Valuation of biodiversity and ecosystem services

To create better incentives for biodiversity and ecosystem service conservation and sustainable use, proper valuation of biodiversity and ecosystem services must be promoted. The report entitled "the Economics of Biodiversity and Ecosystem Services (TEEB)" provides useful perspectives for such a purpose, and in the process of its finalisation, inputs from Asia must be encouraged.

Integrated and ecosystem approach

Integrated and ecosystem approaches remain a vital method for effective biodiversity and ecosystem service conservation. The protection of a rare or endangered wildlife species may look like a costly operation. Yet, by taking an integrated and ecosystem approach, the actions and benefit of wildlife conservation can encompass from incubation or fertilisation of species to habitat conservation in a wider scope thereby generating long-term and spacious benefits.

Nexus with sustainable development

Biodiversity and ecosystem service conservation and sustainable use need to be promoted as an integral part of overall endeavors to achieve sustainable development. Food and energy production is an essential element in sustainable natural resource management while sustainable alternative livelihood development in rural areas remains to be important to reduce rural poverty, urban migration, and urban poverty.

Policy initiatives

Various policy initiatives must be advanced at the national and international levels to strengthen activities for biodiversity and ecosystem service conservation and sustainable use. The Satoyama Initiative, the global network of transboundary conservation areas and the Coral Triangle Initiative are some of such policy initiatives to promote policy measures and activities aimed at biodiversity and ecosystem service conservation and sustainable use.

Expert Workshops

Stakeholder Dialogue on Low Carbon Societies

Bridging Efforts in Japan with International Initiatives

Background

Solving the climate change problem will require not only technology deployment, but behavioural changes in the context of socioeconomic, political, and cultural values. In contrast to prevailing approaches that are target driven and largely focused on mitigation, the notion of a low carbon society (LCS), which integrates the various aspects of technology, finance and capacity, is gaining traction among policymakers around the world. However, as yet no clear vision of what makes a LCS has been developed and shared amongst policy-makers and other stakeholders. Researchers and policy-makers realise there is a critical need to develop the LCS concept and collaborate around the world. Starting in 2006, the first workshop of the Japan-UK Low-Carbon Society project took place. Since then several more workshops have taken place and participating researchers to this project from various places in the world have studied this subject, and developed roadmaps and visions of what LCS would look like in their own economies. Motivated by the success of this joint project, the International Research Network for Low Carbon Societies (LCS-RNet) was initiated by the Environmental Ministers Meeting of the G8 (May 2008). Earlier this year in Trieste, Italy, researchers of the LCS-RNet gathered for the first time and identified the research areas and themes. They also discussed the strategic planning of the network activities for the next five years. At the ISAP meeting in Japan this year, IGES provided an opportunity of a stakeholders' dialogue for the LCS-RNet, where Japanese researchers participating in the LCS-RNet and Prof. Nay Htun who are leading International Consortium for Low-Carbon Society, (ICLCS) furthered discussions with an emphasis on Asia and on promoting a collaborative framework to exchanges ideas among researchers.

Opening Remarks:

Mr. Hiroshi Ono,

Director, Global Environment Research Office, Global Environment Bureau, Ministry of the Environment, Japan

Mr. Ono began his presentation by expressing his belief that while policymakers are beginning to develop an awareness of the significance to realise Low Carbon Society (LCS), the fact of the matter is that many policymakers today do not have firm vision of what a LCS looks like and do not know what changes are needed to make a successful transition to LCS in both developed and developing countries.

As such there is a current need for the scientific community to provide policy makers with clear and visible means to move towards a LCS. In this respect research is needed among different fields to provide scientific views/information and a basis for developing the LCS future. Thus, LCS-RNet was launched in 2009 with the primary objective to promote research information exchange, as well as to facilitate achieving LCS over the world through interaction amongst policy-makers, civil society and business. Because researchers on their own cannot create a LCS, we must develop a worldwide structure for this interaction. In this context, initiatives like LCS-Rnet need support from policy-makers. The output of such research and interaction is expected to be policy relevant rather than policy prescriptive. As such, stakeholder dialogues at the initial phase of the LCS-RNet are important.

Although the launch of the LCS-RNet is based on the agreement at the last G8 Environmental Ministers Meeting (May 2008), we do not want to limit the network to the G8 countries. It is important for LCS-Rnet to be open to developing countries, particularly emerging economies.

Keynote Speech 1:

International Research Network for Low-Carbon Societies LCS-RNet

Dr. Shuzo Nishioka,

Senior Research Advisor, IGES; Senior Visiting Researcher, National Institute for Environmental Studies (NIES)

Dr. Nishioka opened his presentation with a brief history of Low Carbon Society-related policies in Japan since 2007, highlighting the roots of Japanese LCS developing through the concepts and visions of past Japanese Prime Ministers such as Abe and Cool Earth 50. Prime Minister Fukuda spoke of a Low Carbon Society in his speech to Diet in May 2008, the G8 Environmental Ministers Meeting (G8 EMM) held in Kobe in May 2008.

At that G8 EMM, the establishment of the LCS-RNet was proposed and accepted as an international network for the world research communities for the sake of the recognised necessities of transition of current socio-economic structures towards low carbon societies (LCS) to solve the issues around the climate change. Dr. Nishioka recounted the Kobe G8 meeting chair's summary by stating the objectives of contributing value-added to research, promoting understanding of LCS dialogues between researchers and other shareholders, and contributing to the international policy process. With those objectives, the LCS-RNet is expected to assist efforts in all involved countries to grasp the clear vision of their own LCS, as it is a new concept and many countries do not yet have guidance for transitioning towards LCS. Although the LCS-RNet was initiated by the G8 EMM, the network should be independent as its concept is that of a non-binding innovative network.

The LCS, in particular at these early stages, is academic-driven and multidisciplinary. With this understanding of the newness and comprehensiveness of the research on LCS, new kinds of scientific methodologies need to be established to integrate various disciplines to help science-based policy-making, as well as to support technological innovations. In this light there is a critical need to promote better understanding among stakeholders, as LCS is not only a matter for people working in the energy sector, but also city planners, land-use planners, and behaviour scientists among others. Of utmost importance throughout the development of a LCS is the involvement with other stakeholders than just researchers.

So far as the key research elements and next steps for the LCS, attention must be paid to building awareness outside of the scientific community. In addition, a LCS in the context of sustainable development could be achieved by leapfrogging to low carbon development in developing counties by utilising the low carbon technologies transferred from developed countries, but the most important is how these technology can be integrated into the existing social system and economic structure.

While France, Germany, Italy, UK, Republic of Korea and Japan have made a commitment to LCS-RNet, we are still missing three major countries, i.e. the United States, Canada and are awaiting a response on participation from Russia.

Discussion

In the response to a question on how the expansion of the LCS-RNet can be achieved, a planned annual meeting of the LCS-RNet was introduced. The LCS-RNet is currently asking people to join the network and to participate in the annual meeting. Information of the meeting will be circulated widely (e.g. through the website).

Keynote Speech 2:

International Consortium for Low-Carbon Society (ICLCS), Established July 2008

Prof. Nay Htun,
State University of New York, Stony Brook

In terms of the role of energy and carbon, we need to look at some major negative impacts for the global society such as global warming, damage to the ecosystem, and socio-economic development issues such as food security, human health, as well as increasing disasters. Of particular concern are the impacts of climate change on all these issues. At this time, energy and climate change are at the heart of everything, with carbon as a central figure in all this.

Focusing on carbon provides us with something to be measured, which is very important because if it can be measured, it can be managed. Measuring our carbon footprint can make climate change and carbon issues real in everyday life, which in turn can lead us to manage our impact through seeing the outcomes of our actions. It is important that we can see the changes, for example, in an electricity bill. This can lead to greater openness as we have a clearer understanding of our actions and impacts. We need to look at the carbon mitigation issues from a broader perspective, much broader than just technology or economics. Hence, the construct of Low-Carbon Society (LCS) was born.

The parameters of the concept of LCS and the speed at which recognition and perception of LCS is evolving in recent years is something worth noting. In the earlier stage, technologies achieving low carbon emissions were the centre of the focus. The concept was broadened to cover the economy as a whole, the so-called low carbon economy. Then people started to speak a concept of low carbon societies to cover society as a whole.

The G8 invited the research community to create a network, an invitation which was an important indication to countries to draw pathways for LCS, not only for the research community itself, but also for civil society. Now is our chance to address the challenge of creating a common understanding of where we want to go, and this opportunity can influence the current policy process while political leaders are asking for it. With such varied input, all parties are moving towards the same goal of a low-carbon society. In addition LCS could be a part of the bridge between G8 and non-G8 countries, together with civil society.

Of course, clarification of the LCS should not only be in international discussions. There is a need to articulate LCS within countries which will require coordinating mechanisms to work with seven pathways including technology, finance, economics, partnerships, social changes, education/capacity, and policy. These pathways can be taken by sharing knowledge and experiences, disseminating policy and technical briefs, joint research, developing education and training programmes and mobilising resources.
These mechanisms will allow the network members to address other challenges such as the atmospheric brown cloud (ABC) which is a critical climate issue. In addition this coordination and dialogue will contribute to the reduction of disasters and destruction from natural occurrences such as displaced persons and environmental damage; this is the purpose of a LCS.

We must support this transformational change, and not continue with business as usual. For practical reasons we must consider the economics of these changes. Governments need to make decisions on an informed basis. To really change, the costs are extremely high so we must consider where the money going to come from.

A major question is how to bring together as many stakeholders as possible. This requires a network with the ability to coordinate and organise with finesse.

Finally, Prof. Htun introduced the new initiative of ICLCS as a collaborative mechanism assisted by E-TKF (E-Transformational Knowledge Facility). He closed his presentation describing the need to tackle the most pressing issue of global climate change with the “fiercest urgency of now”.

Discussion

A participant asked about new fuels, stating that even if we switch to new fuels there will still be particles, so how to respond to this? Prof. Htun responded that while technology progresses to account for particles and other pollutants additional problems that have not originally been considered as issues for technology may arise. For example wider highways connecting suburbs and cities allow for faster vehicles which can lead to rubber particulates from the tires causing health problems regardless of the type of fuel used in the car. These situations can be greatly resolved through social and political processes such as better city planning and technological developments.

Roundtable Discussion 1:

Visions, Concepts, Principles of LCS

Lessons from the Japan-UK Low-Carbon Societies Research Project

Dr. Junichi Fujino,
Senior Researcher, National Institute for Environmental Studies (NIES)

Dr. Fujino asked the question of what exactly is a Low-Carbon Society (LCS). Many definitions exist based on the local situation, but he finds there are some basic principles.

- Behaviour change and the impact on LCS, including city design.
- Alignment of sustainable development with LCS.
- Necessary financing to mobilise cities to LCS.
- Acknowledgement and addressing of the negative impacts of LCS and the barriers therein.

Dr. Fujino explained the lessons learnt from the Japan-UK Low-Carbon Society research project.

In February 2006, the governments of Japan and UK launched the innovative joint research project on sustainable low-carbon societies with participation from a diverse group of some 20 countries. The project identified the necessary elements for realising LCS such as 1) actions for sustainable development, ensuring all group development needs and 2) making an equitable contribution to stabilise atmospheric concentration of GHG to avoid climate change through deep cuts in global emissions.

The project aims to review country-level GHG emission scenarios based on the understanding of the necessity for deep cuts of GHG by 2050, formulating win-win strategies to align sustainable development and climate change objectives, and identifying gap between goals and the current reality.

The project has held three symposiums and workshops. Discussions at the second workshop focused on the need for bold and innovative measures such as long-term policy signals, as well as changes in human behaviour and lifestyle. It was also concluded that existing technologies can make a major contribution, but emerging technologies will also contribute in the medium- and long-term. At the last workshop, issues on behavioural change, sustainable development, investment, and opportunities and barriers were highlighted.

Although the political target of global reductions of GHG was agreed at the Heiligendamm Summit in 2007, there still remains the initial question of how the deep cuts can be achieved, and this is the reason why we need to unite science and policy, through dialogue.

One Japanese scenario study project concluded that a 40% reduction should be carried out on the demand side, while the remaining 30% should be on the supply side to achieve 70% CO_2 emission reductions by 2050 compared to 1990 levels. However, without presenting concrete measures to combine such options, it would not be possible to make an actual impact to the post-2012 climate negotiations. For such a purpose, issues around technologies and any positive and negative aspects must be evaluated. Barriers must also be eliminated before implementation can be carried out to build a safe and sound society with appropriate land uses.

Dr. Fujino concluded his presentation by pointing out that climate change is an issue that exists through generations. Even if we eventually could achieve deep cuts, the impact of climate change will only start to show up years later, so there is a serious gap between generations over the possible result to be felt. Thus, Dr. Fujino reiterated the remark made by Prof. Htun earlier, namely “a sense of urgency to act now” for developed countries. Such countries need to go straight to a LCS as there is no time to allow for increases in CO_2. Developing countries would pursue moving to a LCS, possibly using leapfrogging by technology.

Discussion

It was pointed out that one of the major messages for Dr. Fujino was that the LCS must offer people a higher quality of life. After which the discussion was opened to the floor and was followed by a number of issues raised by the participants.

Concern was expressed about the current framework having adequate transparency and accountability for research. In addition it was noted that there will be great difficulties in moving away from current practices like using coal. Transformation is not simply about new technologies but changing behaviour. Researchers should consider why these changes are difficult.

More broadly, participants wondered if the LCS concept is too abstract, and although it may be sufficient for modelling, it needs also to be realistic and find what is possible in practice. There are good intentions behind LCS, but these can be very difficult to grasp so focus should be put on other parts of the problem apart from technology and society – namely, finance. In addition, quality of life cannot be sacrificed easily in the short-run during transition, which is something to consider for policy-makers.
It was also discussed if LCS was appropriate for less-developed countries. LCS could be acceptable for newly emerging countries, but it is yet to be understood and decided for other countries. When issues around LUCF are involved in LCS, the importance of developing countries is set to increase. Research on market mechanisms, institutional capacities, enforcing capacities in developing countries are called for. With the special focus on developing countries, adaptation and mitigation must come together because problems are inevitable. Mitigation is working, but unless there are giant leaps in technology, adaptation is going to be the most important way forward.

If we are to convince policy-makers, businesses, and civil society, there needs to be a combination of back-casting and bottom-up approaches. Dr Fujino responded to this, based on his experience applying a back-casting model approach in Japanese projects on LCS, by pointing out the need for dialogue between conservative models and optimistic model researchers to develop more realistic ones.

Finally, the political vocabulary of LCS will be critical. It will only have force when politicians use it, in the same way that only after politicians started to use the phrase “sustainable development”, did it become a real concept for policy. Likewise, the debate in the 1990s on sustainable development did not stop us from helping the environment, and lack of clarity should not stop us from working on LCS.

Roundtable Discussion 2:
How to Make the Developing Path towards a LCS?

Low-Carbon Development in Asia: Diverse Pathways toward a Common Goal

Dr. Kentaro Tamura,
Sub-Manager, Climate Policy Project, IGES

Dr. Tamura introduced the IGES component of its research plans for the S-6 Project. Three pilot countries, Indonesia, China and India, will be studied to assess opportunities, potentials and limitations of developing Asia for LCS. This roundtable articulated research questions in the context of moving towards LCS. Firstly, research on the role of domestic institutions including financing will be carried out to consider what is the equitable and sustainable growth-path for countries of the region. Analysis on development patterns and how technology leap-frogging could be facilitated will also be one of the main research areas. Thirdly, studies will review and identify traditional practices and Asian values that foster low-carbon development.

The first research component introduced was the power sector with the example of Indonesia’s

power sector, in which key drivers for promoting a distributed energy system are examined. The second research component is the agriculture sector, where the major question is to understand the capacity, and traditional values and practices of Asian agriculture to contribute to LCS.

The LCS concept should be carried out in the context of social equity in order to foster long-term collaborations. Modelling using the AIM programme can help to provide insights in the conditions needed to attain both LCS and social equity.

The research is expected to answer the questions about whether Asia is in good position to move towards LCS, and what hindrances there may be, such as political institutions.

Discussion

The question; “Is Asia in a good position for LCS?” was put to the floor.

Two issues were discussed in relation to this topic – technology and finance and how to handle these in relation to developed and developing countries, and necessary research topics in this area.

Financing was discussed mainly as an issue for developed countries. However, with regard to political institutions to encourage technology transfer, developing countries may have to improve their roles.

ODA cannot be expected to provide investment and funding for innovation and technology. On the other hand, leapfrogging cannot be achieved by simply transferring technology from one country to another. While, what about maintenance? How do we get a workforce ready to support a new technology? Here, ODA has a role to play in LCS; in the area of capacity-building. The challenge is how to combine available sources and characteristics of funding from ODA and institutions such as World Bank/ADB, and public/private investment, and then sequence these resources in an intelligent way.

Some participants felt that technology transfer should mainly be done by businesses. Import products bring in new technology from developed to developing countries. Licensing is also an option, as is capacity building to develop new facilities in developing countries. To support this, policy can be developed to make favourable tax and import conditions, to protect property rights, and put the onus on developing countries to ensure security and sustainability of the investment.

In addition it is not feasible to depend on importing technology because each country will have its own unique local conditions. Developing countries should develop their own technologies suitable for their respective economic and political environment. Developing countries must create favourable conditions for developed country companies to do business. There needs to be assistance in importing low-carbon alternatives with market driven ideas based on sufficient government policy. In some cases the technology can be developed at the local level rather than top down through transfer, thus helping ensure locally relevant and sustainable technology created within the framework of the local infrastructure.

Regarding the negative cost option, questions were raised as to why it even exists. The answer may be institutional barriers, which developed countries should help developing countries to overcome. But with technology transfer, cost is just one issue; capacity and infrastructure are also barriers as was mentioned before. In addition, many Asians have a high savings rate with significant investments in the West. Consideration should be given to how these savings are being used, especially externally compared to investing in domestic development.

As for technology, it is easy to say that leapfrogging is a solution, but there are many challenges to address within this construct. For example many photovoltaic projects failed as there was no system or programme developed to support the technology. Although various researches on technology transfer exists, there needs to be more research on political institutions and regimes to assist it, and further analysis on countries’ negative cost to remove obstacles for private businesses to transfer technologies.

One of the participants warned that the current general concern puts too much focus on technology as a solution. This situation was also referred to as the “Technology Dependence Syndrome”. Technology is not a panacea. Particularly, we still do not have an exact image on how to use technologies, what type of technologies societies needs, e.g. for a highly aging society. To avoid being locked-in to obsolete or inappropriate technologies in future, we need to figure out the clear aim and direction to go from now on.

In light of those points, it would be necessary to differentiate terminologies of Technology Transfer and the technology leapfrogging.

There was also a concern expressed to build societies that ensure the benefits of LCS prevail in developing countries.

To the question on whether Asia is best positioned for LCS, the answer would be “Yes” given its long tradition of conservation and making wise resource decisions.

Any actions are incremental, and it could be said that we are not moving fast enough. We need to be quick enough to catch up to the urgency of social requirements to shift to LCS. We also need to integrate the time dimension of development towards LCS into research items. In the end, technology, finance, and human behaviour are key issues that must be addressed simultaneously.

International Consortium for a Low-Carbon Society (ICLCS)

Keynote Speech :

Views on a Low-Carbon Society- a USA and Stony Brook University Perspective on Research and Education

Dr. Eric Kaler,
Provost and Senior Vice President for Academic Administration, State University of New York, Stony Brook

Dr. Kaler began his presentation with a brief institutional snapshot of Stony Brook University, which is a party of the State University System of New York, and the Brookhaven National Laboratory.

Dr. Kaler spoke of the capabilities of the researchers and technological advances having been made at Stony Brook, in particular in the areas of energy and sustainability. He then described the background to current challenges for energy and sustainability, future courses of action to address these challenges, and what needs must be taken care of to support these actions from private, public, and educational institutions.

Basing his presentation on a 1998 article in Nature “Energy Implications of Future Atmospheric Stabilization of CO_2 Content”, the Kaya Identity, the IPCC “business as usual” model, and predictions on CO_2 levels by Wigley, Richels, and Edmonds from their WRE model Dr. Kaler spoke of the carbon intensity of the energy mix commonly available – wood, coal, oil, and gas. A “massive decarbonization of fuels” by 2050 is needed, in addition by 2030 we must have emissions from all energy sources that are cleaner than natural gas in order to meet. The solutions to these energy challenges are not always clear, or technology has not caught up to the need developed through understanding and insights gained through these models and projections. As a result, the research points to the way we need to go as a society for our economy and our environment. At present there are strong economic forces driving research and design on green technology leading to increases in so-called “green jobs” and other opportunities. In addition if the cap and trade mechanism being promoted by the Obama Administration comes about there will be an even greater demand for trained economists to deal with these areas. This is just one example of the type of openings and specialised areas based on traditional fields that are to come. Dr. Kaler explained that while the current phase of investment and interest in “green” or “clean” technology is similar to that of the 1990s and Information Technology in Silicon Valley with venture capitalists showing great interest, what is interesting and different in the case of clean technology is the amount of money involved. He gave the example of Google starting up for $25 million, but with green technology the costs are far greater. He then expressed two concluding points of his presentation – public and private partnerships are absolutely necessary; likewise we need to take action on education now to prepare for the future job markets. Stony Brook’s Southampton campus is well positioned to address these growing areas of interest and opportunity with a curriculum designed around environmental sustainability, public policy, and natural resource management. At Stony Brook and the Brookhaven National Laboratory in particular they are currently focusing substantial research efforts on energy storage in batteries, energy delivery through Smart Grid management and materials, biofuels, and education.

Discussion

In response to a question about clarifying what specifically is “renewable energy” in light of the discourse in Japan on what exactly is renewable, Dr. Kaler responded that as there is a massive need for renewable, the only feasible renewable energy in the long term is solar. If we accept that as true then the medium term will see a large mix of fuels – starch based (corn has been a disaster however he noted), genetically modified fuels, and nuclear which needs to play a larger role. All these options are only short to medium term bridges to ultimately relying on solar power.

When discussing solar energy it was noted from the audience that grid stability and storage are major problems for smaller countries in particular. Dr. Kaler acknowledged this and gave a comparison of the automobile industry in the early 20th century. At that time it was generally understood that the automobile would be the way of the future, but how it looked and how it would be produced was still unclear – leading to many models, many failures and the lesson that no one-size solution will be suitable for all. Many storage modalities are in play and can be developed further, we’re simply in the design and idea generation phase of development for suitable technologies.

Another participant felt that the point remains that the main issues now are cost and storage. Technology is certainly the key to resolving these issues, but from a social and political aspect we need to stop looking at countries as individual blocks. We can bring synergies by taking a regional and global perspective, rather than a country by country case.

Other participants were relatively optimistic about Asia being well placed to address energy concerns. It is not going to be easy and will take sustained long-term commitment.

Dr. Kaler noted that given the alternating patterns of development based on tax and policy structures put in place by various governments, the most important point is to have a stable policy approach.

Prof. Peter Pearson added that new investment is risky, in particular due to the “enduring value of carbon” so the government must allow for profits in the early stages – especially to stimulate sustained commitment from the private sector.

In response to a question about geoengineering, Dr. Kaler clarified that the question was about putting sulphur in the atmosphere, and that it is a frightening and largely uncontrollable experiment with great danger for rogue nations to be toying with the technology. The risks are far too high, as are the risks associated with carbon injection.

The discussion turned to Japan where the employment situation cannot absorb the number of students who studied environmental topics in economics and society. Dr. Kaler felt this is a general pattern, that scientists do the technology while others do the policy aspects. There is a substantial need for policy specialists who understand the technology but this demand is less than for technologists. Ideally, he would like to see more cross-over between the technologists and political scientists. Complacency in this area is the wrong view, especially for developing countries.

There was a call for greater efforts on persuading sharing technology between developed and developing countries. Dr. Kaler added that there is a need to finance emissions and enable a clean energy infrastructure in developing countries. In addition it was mentioned that there is no job market for clean energy students because the product for the market has not been fully developed yet.

There needs to be a market for research to contribute to for the research itself to be sustainable. There will certainly be a winner one day, but for the moment public-private partnerships and investment is the key. As with the human genome project there was a race between public and private to reach the general public first with the discovery. In that case the public sector made the first announcement, making the technology open and accessible to the public. In the same way clean energy can be made public, with a market created for it by government policy.

Panel Session 1:

Breakthrough Low-Carbon Technologies – with Focus on New and Renewable Energy

Facilitator: Dr. Paul Friley,
Energy Sciences and Technology Department, Brookhaven National Laboratory

Bio Energy

Prof. Devinder Mahajan,
Director of the Center for BioEnergy Research and Development (C-BERD),
Stony Brook University; Brookhaven National Laboratory

Prof. Mahajan introduced the Brookhaven National Laboratory, which is one of the US DOE National Laboratories, and the research done there. Biomass Feedstock, using non-food sources for biofuels such as forest and agricultural resources, is one of the focus areas in the Laboratory. The options to convert biomass into bio-energy can be biochemical or thermochemical. The thermochemical route is using a syngas platform and the challenge is total carbon utility with product specificity.

He stated that for economical biomass processing, biomass should be collected locally, produced locally and use simple processes. This is the technological challenge for R&D and there is long way to go in the area of conversion technology.

There must be links between education (training students at all levels), industry (developing energy technologies based on renewable) as well as research.

His centre, C-BERD, is industry driven, and has six main focus areas, on feedstocks, bioprocessing, new platform technologies and modelling. The themes of research are efficient biofuels production and storage, and fuel use coupled with carbon sequestration. He outlined various sample projects being conducted by C-BERD.

Prof. Mahajan then introduced an enabling approach with the goal of developing atom-economical processes. This approach combines process engineering and process chemistry, in order to maximise the product. The Liquid Phase Low Temperature (LPLT) concept of nano catalysis has huge potential in terms of lowering costs, giving more control and reducing the size of facilities.

Finally he talked about biofuels being a path to sustainable development, citing issues such as resource consideration, distributive fuel production, the need to integrate process chemistry for product flexibility and a transition to a hydrogen economy. Finding sustainable sources of energy is a global problem.

Discussion

Questions included what the effects are of removing the residue left on the fields after harvesting, since the residue actually provides important ecosystem services such as returning nutrients to the soil. Moreover, additional energy would be required to remove the residue and replace the soil nutrients, which could increase GHG emissions. There are also issues regarding how to get the biomass to the bio-refineries. Studies could be conducted in the same way they were for motor fuel – there may be 20 processes tried before finding the best way. It emerged that liquid fuels were not economically feasible, and the storage is a problem because biofuel degrades over time. There also needs to be avoidance of a food/fuel conflict.

Dr. Junichi Fujino, Senior Researcher, NIES, stated one key issue is energy efficiency improvement. He noted that NIES has coordinated research on the role of technologies to design a LCS. There are various scenarios towards 2050, highlighting the need for innovation to realise visions. They also require intervention policy and investment. He stated that high efficiency appliances reduce energy demand, and that good information on the economy and environment influences people's behaviours for a LCS. Good design of appliances is needed for good technology and policies to be accepted. The gap between these must be filled.

To make a low-carbon life a reality, policies and financing, as well as design, are necessary. Construction skills to build environmentally friendly buildings are also vital. He mentioned that sequence is important, with all options being taken in order.

Policy Considerations for Renewable Energy

Dr. Mark Elder,
Principal Researcher and Manager, Policy and Governance Team and Biofuels Project, IGES

Dr. Elder asked the question of what the best form of renewable energy (RE) is. He said that there is no universal answer, and the criteria used to determine what is "best" include GHG reduction potential, other environmental impacts and cost. There may be trade-offs between these criteria. All forms of renewable energy have some disadvantages, and local conditions may determine the most appropriate form. There is no "one-size fits all" solution and which technology is best may change over time.

He stated that we need make sure that policies designed to promote specific technologies are flexible, and we should avoid "locking in" policies. There are fears about the effects on economic competitiveness because RE is more expensive than fossil energy and so countries should agree to coordinate increases in RE targets to minimise effects on relative competitiveness. Increased trade in electricity could help increased the physical capacity to use RE by expanding access to base load power. It would also help increase energy efficiency and reduced need for local peak load capacity. However, electricity trade is limited in many parts of Asia, so grid interconnection, upgrading and maintenance would be desirable. Another issue is that many countries have good RE promotion policies on paper but often they are not effectively implemented due to various factors such as subsidies for fossil fuels, inadequate regulatory framework, lack of public and private capacity, lack of knowledge, insufficient financing, and insufficient emphasis on maintenance. Often projects are donor-driven but not self-sustaining.

He also mentioned that biofuels may have some potential to contribute to LCS, energy security, and rural development. However, there is no consensus on the extent of this potential. Moreover, there are concerns about environmental, economic, and social sustainability of biofuels, even for second generation ones, including land use, deforestation, resource shortages (such as water), and potential food-fuel conflicts, resulting in higher food prices and food shortages. The financial costs are still high, and if government support is needed, there should be more conclusive demonstration of social benefits.

Dr. Elder concluded with some thoughts on biofuels and sustainability, stating that overall, biofuels have some potential to contribute to GHG emissions reduction, energy security and rural development. Such potential depends on land use change effects and use of sustainable production methods, etc. Of course, there is a need to emphasise energy conservation and other renewable energy sources in the context of broader energy and transport policies. It is important to make sure benefits can be achieved before committing to promotion policies. He also observed that overall it has not yet been determined to what extent biofuels can contribute to the LCS.

Discussion

It was stated that because of the urgency of the situation, governments have to take risks by supporting research with policies and public money. In this case, governments are not neutral. Biofuels may well play some role in solving climate change. The use of combined fuel, using biomass and fossil fuel, is one solution, with the hope that technology can deal with the carbon emissions. It is necessary to avoid political criteria when deciding government funding, but governments need to take a long term view in cooperation with the private sector.

Panel Session 2:

Low-Carbon Multiple Benefits for Sustainable Development, Human Health and Ecosystem Services

Facilitator: Prof. Kazuhiko Takeuchi, Vice Rector, United Nations University

Low-Carbon Society and Environmental Health: China's Case

Prof. Xinbiao Guo,
Professor and Chair, Department of Occupational and Environmental Health Sciences,
Peking University School of Public Health

Prof. Guo talked about the health effects of climate change in China and stated that LCS can mitigate health effects related to climate change and bring about a good lifestyle to prevent chronic disease. Knowing that the average temperature has increased over the past 50 years, China has carried out investigations and analysis of the impact of air temperature and pollution on mortality, revealing that there has been a significant increase in mortality from air pollution. There has also been an increase in the incidence rate of infectious diseases in China, related to climate change, which is a big challenge for China. Scenario modelling has been carried out in areas of high potential for disease epidemics.

Chronic disease is also a major problem in China compared to developed countries, with cases of hypertension, diabetes and obesity all increasing, especially in urban areas, where most people do not do any exercise.

China hopes that establishing a LCS will make life more comfortable and healthy for the population. It is important to consider city planning and changes in urban lifestyle when looking towards a low-carbon society.

Discussion

In relation to the issue of black carbon and particulate matter, Prof. Guo mentioned that this was a major burden in most parts of China, and measures are being taken to decrease air pollution. Such decreases would have a positive benefit on health, with less stress on the cardiovascular system.
It is important to combine the local and global challenges, and there are co-benefits to reducing CO_2 emissions in the form of addressing local health issues.

China has a short history of monitoring, and so must establish an active surveillance system.

Low-Carbon Multiple Benefits for Sustainable Development, Human Health and Ecosystem Services

Dr. Ritu Mathur,
Associate Director, The Energy and Resources Institute (TERI)

Dr. Mathur aimed to show the relation between sustainable development and climate change. She mentioned that India currently has a large problem with infrastructure, with over 50% of the rural population having no access to electricity. There is a need to first focus on improving energy efficiency before looking at renewables. India's concerns are energy security and it is necessary to look at the options and implications of renewable energy. She introduced four scenarios: reference (business as usual), evolution (address local problems such as energy security), resolution (reflecting the Prime Minister's commitment that per capita carbon emissions would never exceed those of developed world) and ambition (setting aside common but differentiated responsibilities, to take on more stringent emissions reduction targets). She outlined issues under each scenario, such as energy consumption, energy mix, and energy security. However, even in the best scenario, there is still fossil fuel dependency. It is important to move towards renewables, but it is currently not possible for India with its current technologies. There is also a large difference in terms of CO_2 emissions, and on the economics side, transaction costs, infrastructure and R&D need to be considered.

The key results are that the resolution scenario has the highest level of savings, would lead to a lower level of fuel import dependency and prepares for de-carbonising the economy.

Some strategies include focusing on energy efficiency and DSM, planning for supply and investment in fossil fuels, opting for biofuels, and moving to cleaner transport. India needs to focus on one energy efficiency for a "win-win" situation, for example renewables, such as solar energy. There are policy and other barriers that must be broken down, and the developed countries need to bring down the cost of technology and provide international financial support for energy solutions.

Discussion

As far as the technology used for each scenario, Dr. Mathur mentioned that it must be decentralised, using mainly electricity (solar and others). There may be fluctuations in the time period model, but in any case fossil fuels would slowly taper off. Solar storage is a major issue, and coal would become economically unfeasible. In response to a comment about emissions reduction targets, it was pointed out that CO_2 emissions in India would continue growing but in the best possible manner so that development needs could be met. These are what-if scenarios, to show the benefits but to prevent deep investments that would cause lock-in or regret later. There was a comment that use of renewables would put pressure on transport and distribution systems both financially and politically. The National Action Plan is looking into promote policies and look at various options.

It was pointed out that India has a huge gap between urban and rural GDP and that in 2050, 50% of the population will still be living in rural areas. Biomass has the greatest capacity for India. It was also clarified that these ambitious models show only commercial or industrial use of biomass, not rural home use.

Low-Carbon Multiple Benefits for Sustainable Development

Dr. Mikiko Kainuma,
Chief, Climate Policy Assessment Research Section,
Center for Global Environmental Research, National Institute for Environmental Studies (NIES)

Dr. Kainuma stated that a vision is needed to achieve LCS, and that LCS has many good concepts and offers multiple benefits for sustainable development. One important co-benefit is the reduction of air pollutants. Using China as an example, she showed the drastic reduction in emissions and health impacts when policy is implemented compared to a Business as Usual model. It would also be possible to reduce air pollutants by shifting to energy forms such as electricity and hydrogen.

LCS requires local renewable resources for local demand and could improve living standards, due to increases electrification and local-scale technology development. Such technology must contribute to the economic livelihoods of local communities and integrate with the local natural resource base so as to be accepted and diffused. Training local citizens in design, assembly, delivery and maintenance of new technologies is also important, with the added benefits of poverty alleviation.

She stated that LCS infrastructure, such as transport systems, should be well designed to improve living standards, and comfortable, green building helps to reduce emissions and supports a sustainable building industry. Planning a city so that location of homes and work places are closer would also reduce emissions and improve lifestyles.

Finally, a very important aspect of LCS is enhancement of energy and food security. Substitution of gasoline with domestically produced alcohol as a vehicle fuel avoids CO_2 emissions and reduces the demand for foreign currency. Energy efficiency improvement and local renewable resources could enhance energy security. LCS promotes seasonal local food and contributes to reduce the impacts on crop productivity. Local production and consumption also cuts transport energy, and enables local farming, low-scale processing, and trading communities economically.

Discussion

The many benefits of lowering carbon intensity are beginning to be recognised but we must shift gears in vocabulary and thinking. We need to move from co-benefits to multi-benefits. For example, the benefits of health and well-being are very important. In both developed and developing countries, pollution is having an impact on health, and subsequently health is becoming a driving force to enhance environmental awareness and develop technology for CO_2 reduction.

City planning is needed to create eco-compact cities that eventually combine issues of LCS with e.g. the ageing society. If most facilities are at the city core, then older people should be encouraged to live within walking distance of the core, so no cars are needed. Friendlier cities mean more walking, with the added health benefits of reduced obesity and other related diseases.

There was a question on where to focus efforts in very poor societies, where infrastructure would be more relevant and applicable than training. In reply, it was pointed out that energy is the important issue but regional differences need to be taken into account. For example, house and stove design should be improved for certain areas (but may not be an issue in other areas). It was also pointed out that energy security is generally most important. However, rural communities may have very different priorities.

The conceptual question of whether LCS supports globalisation. Most of the business society supports globalisation up to now, but this may change.

Towards a Low-Carbon Society: Forest Management and Utilisation

Dr. Henry Scheyvens,
Manager, Forest Conservation Project, IGES

Dr. Scheyvens began his presentation on forest management and utilisation towards a LCS by noting that the concept of LCS is very new to the forest sector, indeed almost unheard of. Existing forest management instruments address some LCS concerns, but it is important to recognise that they were created for values such as biodiversity, livelihoods and sustainability, rather than to achieve LCS.

In his presentation, Dr. Scheyvens noted that deforestation is continuing at an alarming rate on a global scale. The percentage of forests managed under sustainable management plans remains low. He explained that the drivers of deforestation are many and usually occur in combinations. Papua New Guinea, where the main drivers of deforestation are logging, subsistence agriculture, plantations, mining and forest fires, was used as an illustration. Underling problems of forest management in many tropical countries are a lack of resources to effectively enforce forest laws and weak governance.

Dr. Scheyvens explained that forest loss impacts climate and, conversely, climate change impacts forests. Climate change is projected to result in storm damage, an increase in the range and abundance of pests and invasive species, and the drying of some forests making them more vulnerable to fires. All these impacts will increase forest emissions. A positive impact of climate change could be carbon fertilisation, though research on this issue is not conclusive.

Dr. Scheyvens stressed that because deforestation is responsible for about 20% of global emissions, that it is impossible to move towards LCS without addressing this issue. To achieve LCS, we need to transform our consumption of wood-based products by refusing to use products from unsustainable sources – if the wood is from sustainably managed forests, then the carbon footprint is relatively low. Certification systems exist that use product labelling, traceability systems and independent forest monitoring that can provide consumers with confidence that wood materials are from well-managed forests. We need to make fuller use of forest certification for both public and private consumption – Japan's Green Purchasing Law, which requires that wood products are from verified legal sources, provides a good policy example. There is also considerable potential to recycle waste wood that needs to be tapped.

Finally, Dr. Scheyvens introduced ways to learn from forest communities for a LCS – use renewable materials, develop and use local food economies, and use carbon neutral transport.

Discussion

The presentation showed that the social and legal systems are as important to emissions and LCS as technology. There should be a change in mentality and in government policies, as well as enforcement of laws. One of the major issues is the lack of public awareness, especially in Japan, where there is almost no demand for assurance of sustainability of forest products. NGOs can only do so much, which means government involvement is crucial.

With regard to REDD, there has not been much discussion linking REDD with LCS. REDD is evolving rapidly in the Asia-Pacific, and a decision on a global REDD mechanism is expected at COP15. The capacity of tropical developing countries to implement REDD is low and the costs of establishing national REDD systems is high. However, the prospects for REDD are enhanced by significant commitments of financial and technical assistance from international and bilateral agencies, and others. Interest from the voluntary market in REDD projects has also grown rapidly, at least partly because of the biodiversity and community co-benefits that carbon forestry projects are thought to offer. There are still many uncertainties, but there are also reasons for hope. A final comment was about the power of the consumer to bring about changes in practice.

Panel Session 3:
Policies and Economics for Low-Carbon Society Pathways

Facilitator: Prof. Peter Pearson,
Director, Imperial College, Centre for Energy Policy and Technology

Policies and Economics for Low-Carbon Society Pathways

Mr. Martin Krause,
Team Leader, Climate, Environment, Energy, UNDP Regional Centre

Mr. Krause stated that it is important to work with developing countries' Assessment Data Inventories Baselines to show that what is measurable is manageable. This needs to be followed by policies, implementable sector strategies and commercially-viable action plans. Pilot projects can then demonstrate technologies that can work, for example wind technology that works from all areas – technology, infrastructure, existing energy agreements etc. It is necessary to leverage investments from public and private sector but there need to be the building blocks otherwise the project would be risk for a private investor and without an enabling environment through policy, investment will not be forthcoming.

The UNDP perspective and role is to support developing countries to work on these issues with GEF funds etc. It also points out that low-carbon growth and climate resilient development cannot be separated, and cooperation on a regional, national and sub-national level is also important. To move towards a LCS, countries need to access, combine and absorb new sources of environmental finance, e.g ODA, loans and private investment. Capacity development is also important, on an individual, institutional and systemic level. There also needs to be policy dialogue.

One of the key barriers to moving towards LCS is financing, and for this area, ODA cannot achieve much, as far as on the scale of investment needed.

He then highlighted pilot projects for mitigation and adaptation which prepare the ground for investments by transforming markets and increasing resilience.

These three issues require inter-related attention. The UNDP's Territorial Approach initiative assists sub-regional authorities in addressing climate change challenges and understanding the risks and opportunities of climate change. A key element is the Integrated Territorial Climate Plan (ITCP) which helps regional and local governments to prepare integrated climate change action plans to priority mitigation and adaptation measures and then provides guidance to public authorities on how to choose and design the most appropriate policies and financing schemes to implement the priority measures.

In summary, there needs to be a rapid scaling-up of climate change management efforts, involving capacity of countries and local authorities to assess risks, prepare plans, access funding and monitor implementation.

Discussion

A question was asked on the Integrated Approach and the experience so far. This approach was only launched in October 2008 and is a new concept piloting in 50 municipalities globally. The first step is to come up with the ITCP plan, covering a limited geographical area, and considering mitigation and adaptation at the same time. There was mention of the intercity collaboration of Kitakyushu City and ICLEI for the Kitakyushu initiative.

Policies and Economics in Developing Low-Carbon Economy in China

Prof. Xia Kunbao,
Member of the Board of Directors and Advisor, All-China Environment Federation

Prof. Xia outlined four main points to developing a low-carbon economy in China. First is to adopt low-carbon production with a sustainable production pattern. This can be achieved by practicing a circular economy and cleaner production. Two recent laws have been enacted that have been enforced with good results in sectors such as power generation, iron and steel, the chemical industry

and light industries. There are also policies and plans in place to develop LCS.
Another measure is to adopt low-carbon, sustainable consumption. With the emergence of a well-off class in China, excess consumption is developing rapidly. For example, private cars are replacing bicycles, and there have been policies to restrict driving based on licence plates, for example.

A third measure is to control the development of high-carbon industries, to speed up the adjustment of economic structure and improve quality of development. Policies include phasing out pollution processes, raising the criteria for approval of construction projects, and formulate penalty measures such as discharge fee system.

He mentioned that in the process of economic re-structuring, it is necessary to make adjustments in China's export oriented economic development strategy. Limits must be put on high-carbon production and export, and greater efforts made to increase low-carbon production and export.

The final point is to carry out international cooperation and attract investment of foreign companies to build low carbon facilities in China. Existing international mechanisms could be used such as CDM under the UNFCCC.

Engaging China in Copenhagen and Beyond: Will G-2, and Co-benefit Concepts Work?

Dr. Guodong Sun,
Assistant Professor, State University of New York, Stony Brook

Dr. Sun spoke on engaging China in Copenhagen and beyond, and asked the question "Will G-2 and co-benefit concepts work?"

He stated that the main problem for China is coal-burning, so there are new strategies being proposed to engage China, to push it into making legally-binding commitments. There are two strategies that have received great attention with respect to the Group of Two, namely to address global issues including climate change, and to integrate energy security concerns into the post 2012 climate regime.

The G-2 concept is a top-down approach with China and US, two countries that could address issues including the financial crisis and climate change. The question is will the G-2 work well on climate change. It is appealing because of China's desire to be a responsible power and sense of being recognised as a major player. However, it will not work well because of mismatched interests, values and capabilities. A top-down approach is extremely hard, and there will be resistance from local governments who want fast growth. There would also be problems in enforcement of laws and accountability for violation.

In fact, the Chinese premier has said that it is impossible for a couple of countries or group of big powers to resolve all global issues. The international community must find better ways to engage with China to mitigate GHG emissions as most legal options are not effective.

Policies and Economics for Low-Carbon Pathways: The Role of Technology RD&D Policies

Dr. Paul Friley,
Energy Sciences and Technology Department, Brookhaven National Laboratory

Dr. Friley gave a presentation on the role of technology RD&D Policies. He mentioned that there is a variety of potential policies to combat climate change including taxes, cap and trade, emission offsets, etc. One option is the potential impact of technology RD&D as a key enabling policy for climate change legislation, as it can reduce the economic cost of other climate change policies and make those policies politically easier to enact and keep in place.

He presented results from a study that tested different sets of energy technology assumptions, with a base Business as Usual technology set, and US DOE R&D goal technology sets. Carbon prices ranged from $0 to $100 per ton of CO_2. The studies examined wind turbine R&D goal technology set at different levels of success. The economic models show different options that can lead to significant cost saving for society. Wind power options are on the edge of becoming economically viable, so modest improvements could make them more viable.

Panel Session 4:

Trans-discipline Capacity Building: Education and Training

Facilitator: Prof. Ryokichi Hirono, Professor Emeritus, Seikei University

Panel 1:

Prof. Sudip K. Rakshit,
Vice President for Research and Professor, Asian Institute of Technology (AIT)

Prof. Rakshit emphasised his key points for innovative and transformational partnerships, namely that we must be multidisciplinary and build a language that we can all understand regardless of discipline or department. He asked whether we want to see jack-of-all-trades or specialists in climate change research. Research in higher education is not only about increasing knowledge in particular areas; education and research must be more diverse.

He stated that financial matters and science are the main issues for poverty and climate change, as they both support the means and ends to solutions. Sustainable development is a bigger umbrella than climate change, and so climate change should be seen in the context of other social, environmental, and economic issues.

This type of research has already been undertaken by Prof. Rakshit's institute, and included strategies on a low-carbon economy with Viet Nam and Thailand as project areas. These approaches must be trans-disciplinary and multi-sector, and carried out with a strong network of collaborators. He expressed strong support for radical innovation, and this must include private enterprise.

These economic and environmental problems impact on the society and on each citizen. There is also the issue of limited energy resources. Thus, solutions will not be discovered and dispersed by just one area of technical or social science.

In summary Prof. Rakshit stressed that specialists from different disciplines should be patient and understand the point of view of colleagues from another discipline. Overcoming the tendency to reject ideas from a person from another field often prevents formation of stronger teams. He highlighted this by saying that working in this manner will like calculating 1 + 1 and finding the sum is greater than 2. This was the difference between inter-disciplinary teams and transdiciplinary teams, he explained. He reiterated that what is need is a common language to achieve effective multidisciplinary results. The results depend on how well the disciplines can talk to each other.

Discussion

The discussion session began with educational practices in Asia where students tend to cram for exams, more so than undertake critical thinking. Addressing this is important for multidisciplinary education and it is vital to do our best to promote critical thinking which considers multiple aspects rather than expertise or knowledge in one specific field.

Prof. Rakshit followed up on these remarks by saying that at his institution they definitely want to start a course on climate change but was concerned about the content of such a course. At the academic level we still need the specialist, but when it comes to decision making we need to be much more transdisciplinary. We need specialists who listen to other lectures and technologists who listen to social and economic issues.

Panel 2:

Prof. Hironori Hamanaka,
Chair of the Board of Directors, IGES

Prof. Hamanaka presented on the conclusions from other ISAP sessions, in particular the session on educational leaders. Much of the success for the development of future leaders depends on financial sustainability, mainly from the government and business sector. A number of practical experiences were shared, including the newly launched graduate course at Keio University on Low-Carbon Society. There is a plan for a similar programme at the Asian Institute of Technology. A number of points were raised such as how we can improve the quality and content of education; how to cooperate in producing the necessary knowledge and skills for providing appropriate programme content; and quality control and relevance of course content. Although we are in the early stages of implementation, we must make sure these experiences are shared with other stakeholders. In this regard a market study is urgently required, so that the students who are educated and trained are able to find a suitable and appropriate job. There needs to be communication with business leaders and government on these points. A number of opportunities exist between and among universities such as joint programmes and faculty or student exchange. These challenges will be addressed but it is necessary to have government support for facilitating cooperation between universities, and between universities and businesses to ensure students have practical ground skills and experiences.

IGES will make sure the information presented this afternoon will be shared among stakeholders.

The institute would also like to proceed with the necessary mechanisms to develop future environmental leaders and programmes, such as a market study. In Japan a multi-stakeholder consortium was started, but now the question is how to proceed with a similar attempt in other Asian countries. It will certainly be challenging, but we would like to move forward.

Discussion

The discussion session began with emphasis on the necessity of a market study. It is essential to make sure graduates can find a job. Two points were raised in this regard. Firstly, industry, government, and academia must carry out collaboration and share view points. Secondly, there must be a balance between the needs of the three sectors and actually attracting students to the educational programme in the first place, by having course content that is both interesting and useful.

India was mentioned as being well-positioned to match the needs at all levels due to existing programmes, current capabilities and future plans.

Social and cultural differences in career expectations must also be considered, such as the end of lifetime employment in Japan and the increasing tendency for youth to change jobs and even sectors during their career path. Often it is the case that some industries are not accepting of these practices that stray from the past despite different economic conditions.

Prof. Hamanaka mentioned key points including the importance of educating new leaders. The important thing is that new leaders should be trained in traditional disciplines such as economics and natural sciences, and at the same time be educated in a way to understand the current urgent needs to tackle complex issues such as climate change and other sustainability challenges. However, many companies hope new recruits would become accustomed to the company's core mission and business areas after being hired. Only after that can environmental issue be addressed – when asked by the company to do so. This situation needs consideration from the business sector and universities.

Undergraduate programmes in which students can take core courses along with specialisations can get them started thinking in a very focused area, but also thinking about the broad subjects to prepare them for shifts in their career later on.

In the fields of climate change and LCS, we have not come to a place of maturity where we have that broad base; we only have specialists.

It is important to develop a multidisciplinary programme as both the faculty and students need a supportive and protective environment. "Pure" discipline students have a hard time competing with transdisciplinary students at discussions such as at the ISAP forum.

At many universities in North America, the EU, and Asia there are certain aspects of a university education that are not imparted to the students, such as how to listen, how to solve problems and how to interact with other disciplines. These attributes would help the student later on in life. Teachers need to be taught the ability to impart knowledge of how to be multi-disciplinary.

So while it is important to ensure students get jobs, the other role of a university is sustainable human development.

Panel 3:

Prof. Peter Pearson,
Director, Imperial College, Centre for Energy Policy and Technology

Prof. Pearson spoke of the importance of patience for inter-disciplinary work stating that it might take 18 months for new disciplines to work well together after the beginning of a new department or project.

In his own university courses, specialists are brought in so the students encounter practicing experts in their fields. After two semesters the students do a 5-month long research thesis. He mentioned the range of topics that drew on inter-disciplinary work, such the effectiveness of business models to rural Africa, and carbon pledges. Prof. Pearson felt it is a powerful thing to have students take a few years between undergraduate and graduate studies to get a broad view with a particular focus. Students can then choose to work in the area that interests them based on their own personal experiences, leading to more highly committed students. This benefits the student and certainly makes it easier for the school, too.

He mentioned that his university has had little difficulty in finding employment for its students. There is a strong international demand for students from engineering courses.

In addition to universities and industry, there is tremendous potential for local governments to be involved with climate change, and this can often require training and knowledge sharing. In this regard, it is especially important to have post-experience training to follow up on topics learned in a training programme.

In summary, research, education, and training partnerships should account for student empowerment in decision making, thinking outside the box with how to educate different groups and recognition of life-stages and timing in training.

Discussion

It was noted that it is important to help with implementation of projects by training implementers to do a better job. It is often assumed that the implementers have the capability to implement but with such broad and technical topics capabilities should be considered. Prof. Pearson noted that this is a good reminder to not only be thinking of people who have a high level of education.

Panel 4:

Prof. Fengting Li,
Professor and Vice Dean, UNEP-TONJI Institute of Environment for Sustainable Development, Tongji University

Prof. Li mainly spoke of experience and lessons learned in China in partnerships between institutions. He pointed out environmental issues that have underlying factors which lead to a particular event occurring. He gave the example of an algae bloom in a lake in China that affected the drinking water and the appearance of the lake itself to visitors. This may have appeared as an “environmental issue” but looking deeper we can see that enforcement was very weak and many failures occurred among those who could have prevented such an environmental issue from happening. To prevent this,

integration is needed between the public sector, universities, and industry.

The UNEP Institute was built as a platform for the whole university to offer courses for Master and PhD students with multiple perspectives on the environment, not just technical or scientific but ethics, economic, and other areas. This approach involves plenty of cooperation with other institutes and programmes such as a young environmental leaders programme for sustainable development and a short training programme for PhD candidates in cooperation with other countries. For the LCS network we need joint research projects so we can work together closely as they are doing at their school already. Most resource persons are from the Asia Pacific region so cooperation can be quite close and local.

The IESD is open for international cooperation including cooperation with universities, and for the LCS network as they have a good base already in cooperation and joint research.

Summary and Closing Remarks: Prof. Ryokichi Hirono

Prof. Hirono offered inspiring words based on his past experiences to wrap up the final discussion session. He mentioned meeting American actress Marilyn Monroe, while at the University of California-Berkeley in the 1950’s. At that time there was a student uprising against environmental degradation. Marilyn Monroe was invited to the school to speak and she spoke of four things that are important in life - 1. You need to have a vision – she had studied acting since she was 13 years old. 2. You have to study hard – you have to have a good head for knowledge and analysis. 3. You also need skills to transform knowledge into practice. We need technology to help with that. 4. You need to have a heart.

Prof. Nay Htun also gave his final comments for the session. He said there had been one and a half days of extremely rich sharing of information on LCS and the pathways towards LCS. He came in with a good idea of what a LCS could or should be, but now after hearing all these ideas he will have to go back and rethink the process.

Technology plays an extremely important role, but there is no one single technical process that is risk or impact free. There are always going to be pros and cons. What is important is how wide we look, and where that technology comes from. In that regard, society will have to make a choice. Each choice does generate less CO_2 and use less fossil fuels, to be sure. The challenge is the overall mix of technological and other social and political factors. Technological choice is at the centre of these decisions though. We also need to think about how to devise incentives to change human behaviour.

At this transition stage to a LCS, there is a need for more and more scientific evidence-based knowledge to formulate policies. Financial investment for moving towards a LCS is huge compared to the IT revolution, and the impact of a wrong choice in the financing is huge. We must generate better knowledge, information, data and evidence to help the decision makers.

Most important in all this is capacity building, education and training. Prof. Htun commented that he particularly appreciated the point made by Prof. Rakshit that from a transdiscipline aspect – 1 + 1 would equal more than 2. This would lead to paradigm changes we all are aiming for. At all the forums the transdiscipline and shared experience, built on past shared experiences to work towards a LCS. If we want to plan for 10 years we grow trees. If we want to plan for 100 years we educate and train. That is our approach here. The fierce urgency of now.

Dr. Shuzo Nishioka commented that ISAP was successful because we can see and tackle the reality, what is happening in the world. To meet with such approach, we have to change the education systems, which will require a reshuffling of the sectors and disciplines. So far humans are appropriately adapting to the changes around us by expanding our frontier. However, the problems now surrounding us have different characteristics to frontierism. We are working with the limited common global resources and the question is how we can create harmonise among us. This first meeting has been able to quite appropriately express this situation, by emphasising the “Pathway to a paradigm” .

Whether we are going to change the paradigm itself, or apply the old-style methodologies to new problems – this is a huge turning point for human beings. However, we are a long way off from finding the new paradigm. Scientists are suggesting we have to change so much but at the same time we are dealing with a great deal of social inertia.

Prof. Hironori Hamanaka expressed his sincere appreciation to the speakers and those in attendance for the very productive and fruitful discussions. This is a first step, but we have been able to share the basic ideas, and the basic direction. We are now ready to face the challenges ahead.

Biofuels for Sustainable Development: Realigning Potentials and Realities

26 June 2009, 13:45-16:40

Objectives

The workshop aimed to hold a discussion on sustainability issues relating to the use of biofuels in Asia between policy makers (representatives from the governments in developing countries and an international organisation) and research institutes that are currently conducting biofuel-related studies in the region.

Summary of Discussions

Followed by the introductory presentation on the objectives of the workshop by Dr. Elder, Dr. Sethi emphasised that the issue of the sustainability of biofuels in India needs to be considered in the overall context of energy and energy policies in India. He highlighted the dire conditions that India is facing, in particular that large numbers of people with a very low standard of living have limited availability/access to basic factors of production (energy, land, and water). He pointed out that sustainability issues associated with biofuels are very specific and unique to the local conditions, and that life-cycle assessment (LCA) of GHG reduction potential of biofuels needs to be country and region specific. He commented that the sustainability of biofuels should be determined on the basis of the extent of their contributions to GHG emissions reduction and energy security, effects on food security, and their economic viability. Employment creation, poverty reduction and rural development should not be the main objectives of biofuels, since these objectives could be more effectively achieved by other means. He said that biofuels could be sustainable if they are produced and used in a localised and decentralised manner, but that large scale projects need a thorough analysis of their potential impacts, including net energy balance, impacts on global and local ecosystems, livelihoods of indigenous people, migration, land holdings, and food and water security. Regarding current biofuel policy discussions, he expressed concerns about how potential inappropriate government intervention, especially subsidies, could lead to significant problems. For example, subsidies for a specific commodity might distort the market, lead to shortages of water and other resources, reduce food security, and might create profits for only a limited number of stakeholders. The importance of supporting R&D for alternative forms of biomass as well as other forms of renewable energy was also pointed out. Dr. Sethi concluded that current biofuel promotion is driven by a desire for a guilt-free fuel, and more emphasis should be put on reducing energy consumption.

Mr. Hadiwidjoyo presented an overview of Indonesia's energy and biofuel conditions and policies in the context of the global energy situation, and discussed current developments in Indonesia's biofuel policies. Similar to the case of India, the issue of energy security is being emphasised by the Indonesian government, and Presidential regulations to diversify and conserve energy are already in place. The biggest challenge identified is the lack of competitiveness of renewable energy since all three types of oil (gasoline, diesel, and kerosene) receive subsidies. In order to promote the use of biofuels, the Indonesian government introduced mandatory blending of biodiesel, bioethanol and pure plantation oil (plant-origin oil). In addition, the government is considering other economic measures such as tax break for value-added tax for the biofuel industry and subsidies for biofuels.

Dr. Sagisaka presented the activities of the ERIA (Economic Research Institute for ASEAN and East Asia) Working Group on "Sustainable Biomass Utilisation in East Asia" and a few examples of study results. The Working Group consists of researchers from seven Asian countries (India, Indonesia, Japan, Malaysia, Philippines, Singapore and Thailand) and provides policy recommendations to ERIA with a sound scientific basis. The Working Group has developed sustainability indicators based on the triple bottom line (to optimise environmental, social and economic performance), and is employing them in pilot studies. The three main indicators of focus are the human development index (HDI), life cycle assessment (LCA) and gross value added (GVA). One example of an HDI study showed that biodiesel production from jatropha in Andhra Pradesh, India contributed to a slight increase in HDI.

From the presentations, it became clear that the question of whether or not biofuels are sustainable has not yet been conclusively settled, as the issue is very complex, and that concrete evidence is still insufficient. Early promotion of biofuels was begun in many countries based on untested assumptions about their environmental, social and economic impacts, and early promotion plans in many places proved over-optimistic.

A common view shared in the workshop was that the issues related to biofuels are highly specific to local conditions which need to be taken into account in order to develop effective policies. Resource endowments are a critical factor since an increased biofuel production competes with other economic activities in resource use, in the agricultural sector in particular. Water and land are especially scarce in India. Setting appropriate policies from the beginning based on sound research is also important because a good-intentioned policy could have unanticipated negative effects. Moreover, policies that do not take into account uncertainties such as fluctuating oil prices could quickly become counterproductive.

Energy security was a common hoped-for potential of biofuels that was stressed in the discussion, reflecting the fact that many Asian developing countries including India and Indonesia are experiencing rapid economic growth and increasing demand for energy. Some of the common challenges include a need for increased R&D for biofuel development including second generation biofuels, a need for contribution from research institutes to policy makers, and a need for shaping robust biofuel policies that assure the future sustainable utilisation of biofuels. There was an interesting contrast in the discussion relating to the potential for biofuels to contribute to poverty reduction and rural development. Dr. Sethi believes that biofuels' potential contribution is limited, and that there are better ways to promote these goals. In contrast, Mr. Hadiwidjoyo and some other participants expected a larger role. Since biofuel promotion would not be the most direct way to promote poverty reduction and rural development, the question is to what extent biofuels can contribute, and how much emphasis should be placed on these co-benefits, which are likely to be location specific.

Another recurring issue was how sustainability criteria could play a role in assuring the sustainability of biofuels. The ERIA Working Group has proposed six broad principles for biomass energy utilisation to the East Asia Summit Energy Ministers' Meeting (EEM) in 2008. Other initiatives include the Roundtable on Sustainable Biofuels (RSB), which published a zero-draft of principles and standards for biofuels in the same year. Initiatives to develop sustainability standards could be an effective means to promote sustainability of biofuel production and use based on locally specific conditions. It is worthwhile to support these and other ongoing initiatives. Further research on sustainability impacts based on local conditions is also urgently needed.

Speakers:

Surya P. Sethi, Principal Adviser for Energy, Planning Commission, the Government of India
Saryono Hadiwidjoyo, Director, Oil and Gas Downstream Activities,
Ministry of Energy and Mineral Resources, the Government of Indonesia
Masayuki Sagisaka, Deputy Director, Institute of Science for Safety & Sustainability,
National Institute of Advanced Industrial Science and Technology (AIST)
Mark Elder, Principal Researcher, Manager of the Biofuel Project, IGES

Participants:

Researchers from University of Tokyo; the United Nations University; the Policy Research Institute of the Ministry of Agriculture, Forestry and Fisheries, Japan; AIST, and IGES.

REDD: Towards Designing a Relevant Policy and Social Research Agenda

26 June 2009, 16:55-18:30

Objectives

The workshop was aimed at exchanging experiences and ideas about ongoing demonstration and research activities on Reducing Emissions from Deforestation and Forest Degradation (REDD) between the Forest Conservation (FC) team and other participants. It was also aimed to reflect on what issues still need to be addressed in practice and in research, particularly within the social and policy dimensions of REDD.

Summary of Discussions

To set the frame for the discussion, Dr. Enrique Ibarra Gené, FC, and Ms. Lavinia Poruschi, University of Tsukuba, presented on IGES research on REDD, and Ms. Amanda Bradley of Pact Cambodia delivered a presentation titled on a REDD initiative in Cambodia.

After the opening remarks by the FC Project Manager, Dr. Henry Scheyvens, the framing presentations were delivered and were followed by a general discussion.

In their presentation Dr. Enrique Ibarra Gené and Ms. Lavinia Poruschi introduced FC's comparative study of REDD demonstration activities, as well as collaborative research on REDD submissions to the UNFCCC and national REDD preparations. The comparative study focuses on assessing the implementation of REDD activities from a policy perspective and the perspective of local communities. The research objective is to obtain lessons for improved design and implementation of REDD projects. The research is currently monitoring three pilot projects in Indonesia and Cambodia, and will be expanded to include other demonstration activities in the region. The analysis of REDD submissions employed a matrix to summarise and compare the positions of UNFCCC parties, as elaborated during SBSTA 26-28. The research found that further work is needed to design a monitoring and reporting system that efficiently involves local communities in its implementation.

Ms. Amanda Bradley of Pact Cambodia delivered a presentation titled *A Cambodian REDD Initiative*. An "avoided deforestation" carbon offset project employing community forestry (CF) was initiated by Community Forestry International (CFI) along with the Forestry Administration of Cambodia in the northwestern part of the country in early 2008. The project area includes the country's twelve largest CF sites covering 52 villages. The implementing agency was CFI Cambodia until Pact Cambodia took over this role in March 2009. The national Forestry Administration acts as the "seller" of carbon offsets. Local communities through the CF Federation, Terra Global Capital, local NGOs and the provincial government are also involved in the project. Funding support has been provided by Danida, DFID, NZAID, and the Clinton Climate Initiative. The project is scheduled to be the first REDD pilot to be submitted to the Voluntary Carbon Standard (VCS). Pact Cambodia plans to do ongoing fund-raising targeting the UNDP Small Grant Programme and other potential sources.

Factors which were decisive in facilitating the project's implementation included the existing legal framework for community forestry in Cambodia and a government commitment to extend community forestry as part of its "rectangular" development strategy. Awareness-raising within the local communities was pointed out as a critical remaining issue as the villagers might not yet fully understand REDD. It is also important to ensure that community interests are respected when addressing land tenure issues and the control of illegal activities.

The intention of Pact is that at least 50% of net revenues are channelled directly to the local communities. Ms. Bradley explained that there was no proper calculation behind this figure, though the target reflects experiences with the Noel Kempff project in Bolivia. Pact's intention is to have the communities benefit as much as possible, ideally receiving up to 90% of net revenues. CCBA standards served to convince the Forest Administration that communities should receive a large share. The local forestry administration should also benefit from the project as forest offices are under-resourced and their salaries are low. It is expected that the Cambodian Ministry of Finance will issue a regulation establishing the revenue share of the communities. Communities participating in the Cambodian project can still use non-timber forest products, but have to forego timber harvesting, as forest conservation is a priority. Lessons learned from the project include to a) decide the division of benefits at an early stage; b) fully engage the government, as the backing of the Cambodian prime minister turned out to be critical; and c) anticipate delays and prepare sufficient funds. Ms. Bradley also argued for less complex monitoring systems.

In the discussion there was agreement on the importance of mapping the needs at the local level to know how much investment is required. The revenues should be distributed among those in the forefront of forest management, and a multistakeholder process negotiating distribution in Lampung Province on Sumatra, Indonesia, could serve as an example. A suitable arrangement model may have to be negotiated by stakeholders and local governments, not necessarily the central government.

Another point discussed was the scale of REDD projects. The purpose of demonstration activities is to show what can work and to raise awareness among local communities. The Cambodian government has not offered any other sites for REDD, despite a large interest of several environmental NGOs to demonstrate REDD in the country. The need to scale-up and test REDD at both the subnational and national level, while addressing the drivers of deforestation, was emphasised. REDD will not contribute significantly to mitigation as long as it only focuses on small-sale demonstration sites. Coordination and action at the national level are crucial.

The discussion also focused on the replicability of the demonstration activities. It was noted that the project could be replicated in larger areas of Cambodia, and that with the methodology already in

place there would be shortcuts. However, despite the top-level government support for the REDD project, ongoing illegal activities for conversion and development are obstacles to replication. In conclusion, for the replicability of demonstration activities, local circumstances are important, but so is getting the policies right. REDD is performance-based, which should give governments an incentive to regulate appropriately.

The difficulty of finding potential investors for REDD demonstration projects was also discussed. As for the Cambodian case, Pact is still to secure an investor. It was suggested that it could be useful for IGES to explore options for facilitating investment in demonstration activities. With respect to information-sharing, one participant explained that the UNFCCC REDD platform has some useful information.

The difficulty of overcoming the existing gaps between the positions of Non-Annex 1 countries in the SBSTA negotiations was discussed, and it was suggested that flexibility is required to address the particular interests of each country.

A lively discussion took place immediately after the workshop, suggesting that it would be worthwhile for IGES to organise a longer workshop on REDD in Tokyo during the lead up to Copenhagen.

Speakers:

Amanda Bradley, PACT-Cambodia
Henry Scheyvens, Manager, Forest Conservation Project, IGES
Enrique Ibarra Gené, Researcher, Forest Conservation Project, IGES
Lavinia Poruschi, enrolled in the Master's Program in Environmental Sciences, Graduate School of Life and Environmental Sciences, University of Tsukuba

Sustainable Water Resource Management in Asia

27 June 2009, 9:30-11:30

Objectives

The workshop was aimed to exchange information and ideas for the development of future collaborative actions under the Asia-Pacific Water Knowlegehubs. At the meeting, current activities of each organisation were shared among participants and based on the business plan of IGES for regional water hub on groundwater management, possible topics for comparative study and capacity development programme were discussed. Based on the discussion, IGES will develop a plan of activities and contact with the meeting participants to further exchange ideas on future actions under the knowledge hubs.

Summary of Discussions

Future Research Topics

- A study to draw a big picture of groundwater resource and its use is identified as a possible initial research topic. Questionnaire survey to groundwater users should be a good way to identify real situation of groundwater use. It is important to prepare questionnaires which reflect local context of each survey area to obtain expected results.
- Groundwater and climate change adaptation is also identified as a research topic for future research.
- Groundwater rights and water market were also identified as hot research topics in groundwater management in the region. On the other hand, it was also pointed out water market study may be difficult to implement since most of Asian water markets are informal.

Capacity Development Programme

- Capacity development of local officials is very important in Asian countries, but cost-effectiveness and language barriers are the challenges of implementation.
- Training for trainers is a quite useful way for capacity development to tackle with the challenges.

Facilitator:

Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, the University of Tokyo

Participants:

Jianqing Yang, Deputy Director, Centre for Groundwater Monitoring of Ministry of Water Resources of China
Richard Hopkins, Chief Executive Officer, The International Centre of Excellence in Water Resources Management (ICE WaRM)
Aditi Mukherji, Researcher, Social Scientist, International Water Management Institute (IWMI)
Yatsuka Kataoka, Project Manager, Freshwater Project, IGES
Tetsuo Kuyama, Researcher, Freshwater Project, IGES

Multi-Stakeholder Partnerships for Environmental Capacity Development towards Establishing Low-Carbon Society

27 June 2009, 14:00-15:20

Objectives

The establishment of low-carbon society requires certain processes such as technological innovations, social structural change, and further lifestyle changes of all individuals. Such processes need to be pursued through the cooperation of all social stakeholders, with their active participation in policy-making and implementation. In such cases, environmental capacity development both for developing environmental leaders and environmentally-conscious citizens is necessary. In particular, to realise technological innovations and social structural change, policy targets for human resource development shall focus on environmental leaders. To this end, two approaches can be considered. One is to educate existing leaders, such as policy makers and CEOs of private corporations, and the second is to build the capacity of potential leaders, such as students of higher education.
In this session, current activities of environmental capacity development that would make contributions for the establishment of low-carbon society, conducted in universities in Japan, China,

Thailand, and Republic of Korea and through an inter-university network in Asia were shared, with the aim of finding a practical area of cooperation among participants.

Summary of Discussions

First of all, Prof. Nay Htun of the State University of New York, stressed the importance of consortium formation for the environmental capacity development towards low-carbon society. He pointed out that in order to establish low-carbon society, knowledge to understand scientific evidences, multi-disciplinary issues, global and regional responses are necessary, along with skills to prevent and resolve conflicts, facilitate cooperation among stakeholders, and to promote win-win responses. He further stated that in order to gain such knowledge and skills, which can be acquired through evidence-based experiences, networks and consortiums are very useful mechanisms.

Following Prof. Htun's presentation, Dr. Yasui, Professor Emeritus of Tokyo University, who is serving as one of the two chairpersons of the newly developed multi-stakeholder consortium for environmental capacity development, named Environmental Consortium for Leadership Development (EcoLeaD), reported the result of the open session titled "New Form of Multi-Stakeholder Partnership for Environmental Leadership Development". He pointed out that the one of the significant roles that EcoLeaD can play in environmental capacity development is to provide different social stakeholders with opportunities for face-to-face communication and networking. He emphasised that for the successful operation of the EcoLeaD's activities, merits for the private sectors to join this consortium should be clearly presented. Dr. Yasui also insisted that through this consortium, linkages between academia and business sectors to train environmental leaders shall be strengthened so that environmental capacity development with the cooperation of all social stakeholders to establish low-carbon society will be realised.

After two presentations about the importance of environmental leadership development through multi-stakeholder partnerships, initiatives of capacity development in higher education in Japan, Thailand, China, and Republic of Korea were shared.

First, the case of Japan was explained by Prof. Hamanaka of Keio University. He introduced the newly developed course named "Designing Low-Carbon Society" started in April 2009. He explained that this course is designed to gain practical knowledge and skills to establish sustainable low-carbon societies, especially for Asia and the Pacific Region. The uniqueness of this course is that it is composed of a wide variety of lecturers within the university, and those outside the university such as private companies, NGOs, and research institutes. The course is structured by lectures, workshops, fieldwork, internship, and master's thesis writing. Prof. Hamanaka then introduced the distance-learning system for this course, and explained that with an internet connection, students can receive the lecture contents and listen to the lecture in real time, which will be very useful especially for working students. It was mentioned by Prof. Hamanaka that in order to strengthen the inter-university network in Asia, Keio University has signed the bilateral agreement on double degree programme with Yonsei University in the Republic of Korea and Funda University in China. He also mentioned that Keio University is planning to expand its partnership with other universities that are carrying out a similar programme.

Following Prof. Hamanaka's presentation, Prof. Kumar, Dean of the School of Environment, Resource and Development of Asian Institute of Technology highlighted the activities related to low-carbon society conducted at AIT. According to Prof. Kumar, AIT put emphasis on its research on climate change related to green house mitigation options, and topics related to energy issues, such as development of energy system models of selected countries in southeast Asia. He explained that there are many courses related to energy issues such as technology, policy, renewable energy and conservation. Some of the capacity development activities related to Clean Development Mechanisms have also been carried out at the institute. He proposed that in order to properly meet the needs on human resource development in relevant fields of society, needs assessment of business sectors on environmental human resources development shall be carried out.

The third presentation to introduce a case study of China was carried out by Prof. Li, Vice Dean of UNEP-TONJI Institute of Environment for Sustainable Development of Tonji University. Prof. Li briefed the session about the international master's programme of environmental management and sustainable development, and explained about the inter-disciplinary nature of the programme. This programme is composed of diversified fields of humanity, social science, natural science, management, policy, economy etc. Some of the courses include environmental ethics, environmental science, environmental sociology, environmental economy, environmental management and policy. It was pointed out by Prof. Li that in order to successfully conduct this inter-disciplinary programme, cooperation from professors with different academic background is indispensable. He further mentioned about the promotion of university-corporation cooperation in order to strengthen the institutional capacity development of both university and business sectors.

The cases in the Republic of Korea were introduced by Dr. Choi, Project Manager of Capacity Development and Education Project of IGES. She explained the background of the environmental human resource development with multi-stakeholder partnership, and the fact that there is an increasing demand for environmental experts to respond to the needs of industrial and business sectors. Some initiatives that are carried out in relation to low-carbon society were shared, such as government funded specialised postgraduate programmes on climate change, Korean Association for Green Campus Initiative, and Climate Change and Green Growth conducted by National Institute of Environmental Human Resource Development (NIEHRD). She mentioned that in order to strengthen the multi-stakeholder partnership and to develop beneficial relationship among participants, further policy support shall be development, along with data and information-sharing of the key personnel involved in environmental human resource development in different sectors, and other relevant initiatives and programmes.

After sharing the different cases carried out in four countries, the initiative on the inter-university network participated by 18 universities in Asian region, called ProSPER.Net, which stands for Promotion of Sustainability in Postgraduate Education and Research was introduced by Mr. Natori, Senior Fellow of United Nations University, Institute of Advanced Studies. Under ProSPER.Net, joint activities by member universities, such as faculty and teacher training, training of government officials, integration of sustainable development concept to university curriculum, and so forth have been implemented.

After the presentations by the speakers, the discussion was carried out among participants to the session. The first comment was made by Prof. Uno of Chubu University on the importance of practical cooperation among stakeholders. He pointed out that in order to facilitate the environmental capacity development in higher education to meet the needs of society the pedagogy shall be shifted from traditional class-room lecture to include field activities. He also mentioned that information and knowledge of one institute can be strengthened and shared by linking it with multi-media tools such as the internet. He further mentioned that those multi-media contents and tools shall be updated according to appropriate timing using quality control by experts.
Another comment was delivered by Mr. Pradhan, regional environmental affairs officer of UNEP on the importance of environmental training by strengthening the networking of personnel/institutions

involved. He suggested that some of the research results and study reports should be shared, with easy access to the relevant personnel/institutions and joint-activities being facilitated, and with assistance and coordination from regional/international institutions such as IGES and UNEP.

Prof. Hamanaka then concluded the session by expressing his appreciation of the active participations among speakers and participants, and confirming the importance of environmental human resource development to establish low-carbon society. He also mentioned that this session was a starting point for further networking and that it should be developed among interested people and organisations. The result of the session was further brought to the relevant session of the Trans-discipline Capacity Building conducted as part of the networking meeting of the International Consortium for a Low-Carbon Society (ICLCS).

Speakers:

Nay Htun, State University of New York, Stony Brook
Itaru Yasui, Professor Emeritus, University of Tokyo
Hironori Hamanaka, Chair of the Board of Directors, IGES; Professor, Keio University
S.Kumar, Professor and Dean, School of Environment, Resources and Development, Asian Institute of Technology
Fengting Li, Professor, Vice Dean, College of Environmental Science and Engineering, UNEP-TONJI Institute of Environment for Sustainable Development
Mee Young Choi, Project Manager and Senior Policy Researcher, Capacity Development and Education Project, IGES
Yoshihiro Natori, Senior Research Fellow, United Nations University

Strategic Research Topics on Sustainable Consumption and Production in Asia and the Pacific

27 June 2009, 14:00-16:40

Objectives

The workshop was aimed at facilitating opinion exchanges among experts on the topic of sustainable consumption and production (SC) in Asia and the Pacific in relation to IGES's next research phase (2010-13). It brought together experts from Europe, North America, and Asia, IGES researchers, and participants from related working fields. Looking ahead at the prospects of IGES on this topic and taking into account past research achievements as well as current involvements of IGES in a number of policy processes, the session explored important research themes to which IGES can contribute and identified potential priority research areas. Below is a brief report on the session.

Summary of Discussions

The Systems Frame of Interpretation

For most of the last decade sustainable consumption and production (SC) has been pursued as a technical exercise – modifications in supply chains, formulation of eco-labels, communication of product information to consumers, etc. Although these are important, they are small, marginal questions; they do not engage at a systems level. A systems interpretation of consumption should be within the global system of trade and exchange.
Consumption is motivated and controlled by the economy. Global macroeconomics, international relations and finance are the mechanisms that really move the system. Most of the SC discussion has taken place around material flows. But it has been left out of the discussion that the material flows depend on the global economy and international relations. Avoiding that frames the questions incorrectly.

As an example, the United States of America has been at the top of the international economic system using both "hard" and "soft" power. The cultural attractiveness of some American values and lifestyle to the rest of the world gives it soft power - also called "sticky" power. Its army of consumers is an "absorptive sponge" for excess goods produced in other countries. Other countries pursuing economic growth are trapped in the "sticky web", depending on the US market for export. Asian countries, being export-oriented in production and needing a safety valve for these products, have become deeply dependent on the resilience of the American and European consumer, which has become the engine of Asian growth.

From the SC standpoint, the challenge is how to reorganise the global economy, how to "release" the US and EU from their roles, and allow countries to develop along alternative, more sustainable paths. How can Asia-Pacific countries continue to develop in a way that delinks their dependency on US and EU consumers? Cast against a backdrop of the global economic framework, eco-labelling and consumer education, while important, are marginal issues.

Defining Sustainable Consumption in Asia

For organisations like IGES, the challenge would be how to translate an awareness of global frameworks into SC research, trying to give an understanding of what a green economy could look like, how it could be dematerialised, decoupling development from resource consumption, and bringing back social sustainability elements like well-being and happiness to the centre of SC research. Studies have shown that beyond the point where basic individual and community needs have been met, there is little correlation between growth in GDP (a neo-classical economic indicator that relies on consumptive growth) and expressed happiness by people. What alternative indicators could be used to measure development that integrates SC?

For starters, there is little knowledge of the concept. Among those aware, based on any number of factors – income level, sector, developing or developed countries, etc - different groups have different interpretations of SC. The meaning of SC and its objectives should be clarified, along with a practical interpretation of its meaning to the Asia-Pacific region. Many stakeholders worry that SC means a fall in profits, a reduction in economic growth, self-sacrificial lifestyles, etc. IGES research could therefore seek to define SC for the region, situate it properly with stakeholders, and highlight successful examples, possibly ones that could be adapted and replicated.

In research aimed at understanding the most efficient policies and approaches leading to positive shifts, different options – business initiatives, administrative policies, voluntary initiatives, etc – have been compared, concluding that the regulatory approach was the most successful. Given the combination of fast growing Asian population, consumer class, and materialism, it is important to identify critical areas that form a major part of total consumption expenditure and for which the environmental effects are either large or increasing rapidly. Unfortunately, there is no comprehensive research yet done in Asia to identify these critical sectors on which policy focus would substantially reduce resource consumption. As such, action is wide and shallow.
IGES stands in a unique position of carrying out such a research; in so doing it would direct policy and research to where it can be most effective. The study on Household Consumption and the Environment

(European Environment Agency, 2004) was cited as a good example. It identified the categories of food and drink; housing; personal travel and mobility; and tourism as most critical sectors for intervention in the case of European consumption. What are those for Asia and Pacific region?

Action Research

Research by IGES should be clear on who the client is, in order to direct its message. Government and policy makers may be the strategic clients, but there is no need to be that limited in scope. Good studies accommodate multidisciplinary approaches, e.g. behavioural studies, policy research, engineering, etc. A recommended approach is action research. As the shift to SC needs structural and societal changes, action research would allow for a study of niche areas, emerging trends, micro movements, etc, that could have positive effects if deployed at a larger scale.

IGES research could support growing social movements and progressive activism - slow food, local sourcing, new forms of relations between consumers and producers, local currencies, degrowth – by reaching out and studying ways that they engage in SC, thus legitimising good examples. An additional advantage of action research is that it lends to networking and collaboration, thus giving richer, multiple perspectives in research outcome.

There is the question as to how knowledge available in the research community can be communicated to other stakeholders, such as NGOs, who are in need of support and can help in the shift towards SC. Also, how can researchers and policy makers listen to people driven by “feelings of heart” which though human cannot necessarily be quantified objectively?

In communicating sustainability and encouraging action, there is a need to go beyond the “economic benefits approach”. Always linking environmental benefits to economic benefits may backfire if people do not see the economic benefits in all aspects. How then can the idea of SC and the vision (instead of just the economic benefits) be marketed?

From Waste Management and Resource Efficiency to SC

On shifting focus of the WMR project to SC, IGES could learn from the experiences of the European Environment Agency (EEA), which is supported by topic centres. There was a topic centre on waste management that shifted focus to become a topic centre on SC. The centre is currently developing SC indicators, just after a project that looked at the drivers of consumption in Europe. Perhaps the IGES WMR project can learn from their experience and then apply some ideas in the Asian context.

The workshop developed a set of areas in which IGES sustainable consumption research could focus to make meaningful contributions. The issues and topics are now being shaped into research questions.

Speakers:

Lewis Akenji, Researcher, Waste and Resources Project, IGES
Magnus Bengtsson, Manager, Waste and Resources Project, IGES
Maurie Cohen, Director, Graduate Environmental Policy Studies Programme at New Jersey Institute of Technology
Sylvia Lorek, Head of Sustainable Consumption Research, Sustainable Europe Research Institute (SERI)
Pattamawadee Suzuki, Associate Professor and Dean of the Faculty of Economics, Thammasat University, Bangkok, Thailand
Eric Williams, Professor, Department of Civil and Environmental Engineering & the Global Institute of Sustainability, Arizona State University

Asia-Pacific Regional Network of Policy Research Institutes for Environmental Management and Sustainable Development (NetRes)

International Workshop
"Innovation in Policy and Field Actions for Ecosystem Management and Biodiversity Conservation"

26 June 2009

Introduction

The International Workshop "Innovation in policy and field actions for ecosystem management and biodiversity conservation" was held at the Headquarters of the Institute for Global Environmental Strategies (IGES) in Hayama, Kanagawa Japan on 26 June 2009 as a part of the programme for the International Forum for Sustainable Asia and Pacific (ISAP). The Workshop was attended by the representatives of the Asia – Pacific Regional Network of Policy Research Institutes for Environmental Management and Sustainable Development (NetRes), organizations that implement the Asia – Pacific Forum for Environment and Development (APFED) Showcase Programme, and related regional network network representatives and partners such as the Kitakyushu Initiative (KI), International Institute for Sustainable Development (IISD), and the Asia Environment Compliance and Enforcement Network (AECEN) and Asia – Europe Environmental Forum (ENVForum) of the Asia – Europe Foundation (ASEF).

The Workshop was intended to review the progress made in implementing projects for promoting policy measures and field actions aimed at ecosystem management and biodiversity conservation, and to discuss findings and recommendations for promoting effective policy measures and field actions conducive to ecosystem management and biodiversity conservation.

Introduction

At the opening session, Mr. Masanori Kobayashi, Coordinator, Programme Management Office (PMO), IGES gave welcome and opening remarks on behalf of the APFED Secretariat and IGES underlining that the Workshop is a part of the International Forum for Sustainable Asia and Pacific that IGES has organized for the first time in connection with the IGES Board of Directors' meeting to distil key elements of sustainability policy research works and disseminate their outcome to the key partners and stakeholder. Mr. Kobayashi also gave a broad overview of APFED including its programme components to support innovative field activities and policy initiatives, and highlighted key perspectives in the work programme of the workshop, for instance to articulate success factors and macro-policy linkages of field activities as well as monitoring and evaluation methodologies.

Session 1: APFED and APFED Showcase Programme

Ms. Ikuyo Kikusawa, Researcher, Programme Management Office (PMO), IGES, introduced the Asia and Pacific Forum for Environmental Development (APFED) and the APFED Showcase Programme. She highlighted the three main components of APFED and its Knowledge Initiative, the APFED Showcase Programme, the Ryutaro Hashimoto APFED Award, and the Good Practice Database. The APFED Showcase Programme is designated to identify and support promising projects focusing either on climate change, the 3Rs or biodiversity. Emphasis was placed on the involvement of each stakeholder for this process of identification and support. Involvement of NetRes, as the implementing arm of APFED, is crucial to organize visits, maintain close communication and regular advice, and provide timely feedback and disbursement.

Involvement of Implementing Organizations (IO) is essential for the development of a value-added implementation plan and for providing constant information and reports for the understanding of the field. Involvement of the Secretariat is important for wider communication through means such as a newsletter, a webpage, facebook and the publication of a showcase handbook. Additionally, Ms. Kikusawa also addressed the importance of the APFED II Final Report to provide an Asian Model based on the Knowledge Initiatives.

Mr. Kobayashi, Coordinator, Programme Management Office (PMO), IGES, added that the lessons learned from the Knowledge Initiatives are to be based on a linkage between field actions, macro-policy and market institutional developments. It is crucial to address various questions to identify success factors such as a question on the real constraints that have to be overcome to achieve the planned outcome. Also the collection of numerical indicators of activities and successes is indispensable for the evaluation of Knowledge Initiatives.

Session 2 : Progress Reports of APFED Showcase Projects for Conserving Biodiversity

I. Agro-biodiversity

Mr. Ashish John, Community Conservation Management Advisor, Wildlife Conservation Society, Cambodia Program, Cambodia, provided information on wildlife-friendly products designed to link community agricultural cooperatives to biodiversity conservation in Cambodia. The project intends to link rice growing with the protection of local birds, in particular the Ibis, by establishing a wildlife-friendly certification mechanism. Crucial for this project are the involvement of the local community, the mapping of areas to clearly separate farming areas from wildlife protection areas, the constant monitoring of the areas by park rangers and cooperation with partner organizations to build and maintain the capacity to produce good quality rice and to sell and confirm the rice as wildlife-friendly. As an incentive for local farmers serves a double-payment system according to which they are getting paid twice once for the rice itself and once when the rice is sold to the end customer. Further, some of the profit is also being used for village development and for the VMN committee. The project has so far been successful as village level agreements about regulations have been achieved, a certification mechanism established, and three tons of rice been sold over a period of three month. However, Mr. John also pointed to some problems especially regarding to insufficient coordination and harvesting methods as well as financing for expansion possibilities. As a next step it is being planned to increasingly use guano as fertilizer.

In his supplementary remarks Dr. Kimihiko Hyakumura, Researcher, Forest Conservation, IGES, underlined the success of the project. He pointed out that initial worries regarding the availability of a market for wildlife-friendly rice did not come true. Yet he also noted that there are still a few issues to resolve. He reaffirmed Mr. John's observation about some problems with the organization of the project. Further, he stressed that, in particular, the question about how to treat the poorest people in the village who cannot provide supplementary rice for the market and still have to rely on the forest in protected areas needs to be addressed.

Questions & Comments

In the following discussion, participants raised various questions regarding the implementation of the project including the payment system. Interest was also expressed about membership in the VNM committee, how the project deals with farmers who do not comply with the rules set up by the local community, and concrete indicators for success. It was highlighted that the population of the Ibis has increased from two to about twenty-three and that farmers who do not comply with rules are firstly being warned and secondly not included in the rice selling process in the specific year.

II. Wildlife

Mr. Tanveer Arif, CEO, Society for Conservation and Protection of Environment (SCOPE), Pakistan, introduced a project in the Tharparkar District, Pakistan, where pressure on biodiversity has been especially high as a result of illegal hunting. Locating and spotting animals for rich customers has been one of the only

sources of income for local indigenous people who have experienced high levels of discrimination due to their status as untouchables in the Hindu cast system. The project initiated by SCOPE has directly targeted the indigenous population. Crucial for the cooperation with the indigenous people was their full inclusion in the project and confidence building. Indigenous people expressed their willingness to refrain from illegal hunting activities provided that they receive some training to gain access to other sources of income. SCOPE successfully organized seminars, training activities, and also walks and rallies for advocacy and awareness rising. As a result 98% of the indigenous community is no more involved in hunting but rather report illegal behavior to the wildlife department. Further, their overall status in society has improved as they have received increasing respect for their efforts concerning wildlife conservation. Concluding, Mr. Arif stressed the success of this project as providing a solution for long-term sustainable wildlife management.

In supplementary remarks, Mr. Masanori Kobayashi, Coordinator, Programme Management Office (PMO), IGES, reaffirmed the centrality of confidence building for the projects and also its sustainability. He also highlighted that the project can be seen as an example for external facilitators successfully bringing about change. However, the project still has to face various challenges, in particular, concerning the evaluation of the project in regard to the conservation of biodiversity in the area. So far it has proven difficult to establish the extent to which the number of wildlife has been restored. Concrete evidence, however, is important to convince funding sources of the usefulness of the project not only as a form of development but also as a form of biodiversity conservation.

Questions & Comments

Participants of the workshop were particularly interested in four aspects of the project: firstly, the lack of concrete evidence for the success of the project; secondly, sustainability of the project after completion; thirdly, alternatives to a purely materialistic approach to the project; fourthly, the replicability of the project. It was pointed out that despite the existence of adequate methodologies to measure the preservation of wildlife, the production of concrete evidence has proven difficult due to the political tensions between India and Pakistan and the consequential presence of armed forces in the area as well as due to corruption of local and national authorities that produce only a doubtful census of wildlife. Further, sustainability of the project is supposed to be guaranteed by a continued involvement of SCOPE and a possible extension of the project to also promote ecotourism in the area. Alternatives to a materialistic approach have been proven difficult as spiritual believes in the sacredness of nature have disappeared to such an extent that it is not possible to base the project solely on it. Nevertheless, preexistence respect for nature was said to have been useful in convincing local communities of the appropriateness of wildlife conservation. Scaling up and replicability is said to be possible but difficult due to the different societal structures in Pakistan. Overall, the unwillingness of the administration to support wildlife conservation supports was emphasized as a major obstacle to long-term success and replicability of the project.

III. Forests (a)

Mr. Asae Sayaka, Director, Wetlands International, Thailand Programme, outlined a project designated to restore mangroves at a former and abandoned aquaculture pond at Krabi Estuary RAMSAR Site, Thailand, to set up an ecosystem mangrove restoration demonstration site (EMR), and to develop low-cost, alternative techniques for mangrove rehabilitation. A major obstacle to this project was the refusal of owners of various aquaculture ponds to allow for mangrove restoration. Only close connections with the local community of the current project site allowed for the implementation of the project plans. After consultations with the local community, several simple techniques were used to improve hydrology and drainage of the ponds. These techniques have proven to be successful and first signs of mangrove rehabilitation can be found. Future plans of the project include attracting additional funding, developing a zoning diagram for mangrove plantation, introducing silvo-fisheries, and enhancing community empowerment through training and assistance with other livelihood projects. Several crucial lessons have been learned from the project, the importance of site selection, the need to manage nature as well as people, and a requirement to increase the involvement of relevant agencies.

Dr. Qwanruedee Chotichanathawewong, Assistant President, Thailand Environment Institute (TEI), highlighted both positive and negative points of the project. She perceived the simple methods for rehabilitation, the increases in income for local farmers due to the establishment of shrimp farms, and the possibility of implementing the project without scientific knowledge as advantageous. Possible dissemination to other areas was said to be a potential future activity for the project. However, issues such as the suitability of the project for only sites with specific characteristics and unclear ownership rights are significant obstacles to the success for the project and its possible dissemination.

Questions & Comments

In the subsequent discussion emphasis was placed on innovativeness, costs and financial sustainability of the project as well as government involvement. It was highlighted that it is crucial not to forget transaction costs when calculating the overall costs of a project, and that long-term financial solutions have to be found. The establishment of a local trust fund based on the example of the Cambodian agro-diversity project was considered as a solution for the latter. This importance of learning from other projects was also emphasized by Mr. King, who stressed that also in regard to overall methods it is important not to reinvent the wheel because similar mangrove rehabilitation projects are already firmly established in Indonesia. Government involvement was identified as a continuing issue due to only limited understanding of local governments in Thailand about possible contribution to conservation projects.

IV. Forests (b)

Mr. Kenn Mondiai, Executive Director, Partners With Melanesians Inc., Papua New Guinea, described the Ona Keto Community Reforestation Showcase Project. As a result of the absence of a suitable government program, local communities requested the help of NGOs for reforestation projects. The project introduced is based on close cooperation with local communities as the majority of the land is owned by local tribes and not by individuals or the government. The project takes into consideration both current and possible future environmental problems due to diminishing forests in PNG, and only includes land that is not part of any ownership dispute. Clans have 100% ownership of the trees on their lands whereas Partners With Melanesians Inc. provides financial and technical assistance. So far 1225 Ha of clan land has been identified and allocated, villages have come up with stricter forestation rules which are about to be included in the local village court system, and two clans have come together to set up an elected board. Also general awareness about environmental issues has increased. However, the project is facing severe difficulties. Benefit-sharing mechanisms have not been fully developed, land ownership issues are still problematic, some of the partners fell apart, and, most significantly, the government has not shown any willingness to support the reforestation efforts. Mr. Mondiai emphasized that currently the two most urgent issues to be addressed are government unwillingness and additional financial support.

Dr. Dhana Rao, Senior Lecturer, Biology Department, University of the South Pacific (USP), reemphasized the urgency of restoring forest in the area for the conservation of biodiversity. Further, she underlined the need to get rival communities together to work as a single group on the reforestation efforts. She also pointed to the initial difficulty of convincing the communities about the long-term usefulness of the project because there will not be any returns from the project for the next thirty years. As Mr. Mondiai she identified the government and its unwillingness to provide seedlings as the currently most urgent obstacle.

Questions & Comments

Questions and comments reaffirmed the negative consequences for the project as a result of a lack of government support and the issues revolving around land ownership. Additionally it was suggested that

the project asks JIEC for additional support. Mr. Kobayashi explained that even though it still needs to be established to what extent JIEC projects are compatible with other projects outside of Japan, there is hope to include JIEC colleagues in international projects such as the one in PNG.

V. Dryland

Mr. Chary Muradov, Head of Department, the National Institute of Deserts, Flora and Fauna (NIDFF) of the Ministry of Nature Protection of Turkmenistan, focused on sustainable development of settlements in the Karakum Desert, Turkmenistan. Activities of this project reach from drop irrigation for a school garden to dune stabilisation, use of solar energy for pumping water and for lighting, and the establishment of the first greenhouse in the region. Especially the greenhouse and successes in increasing vegetation in the desert were said to have attracted attention from the local community increasing interest in and awareness about environmental issues. Mr. Muradov stressed the importance of providing visual results for the communities involved in environmental projects since for many it is more convincing to see than to just hear about the positive sides of environmentally friendly behaviour. Despite successes in convincing local communities, however, he also noted that international cooperation in particular in regard to funding was difficult due to the political obstacles.

Dr. Chu Jang Min, Research Fellow, Sustainable Development, Korea Environment Institute (KEI), explained that the project took place in a very poor ecological condition. He stressed the positive prospects of the project but also outlined various suggestions to increase the effectiveness of the project. Firstly, an extension of the project as a result of the foreign exchange law in Turkmenistan is necessary. Secondly, communication methods have to be improved and more detailed information about the target of the plan provided. Also visual data should be included in reports, field surveys strengthened, and a target index should be established before evaluation. Further, the establishment of checklist as an efficient tool for monitoring the progress of the project was suggested. Mr. Kobayashi added that the issue of desertification is particularly complicated and that it is hard to demonstrate the achievements of the project.

Questions & Comments

In the following discussion the sustainability of the project was of particular concern. Mr. King described a similar project in China which had issues with long-term sustainability as no efficient management regime was put in place. In regard to the project in Turkmenistan, however, it was pointed out that the project was successfully on going for 20 years and that both the government and local communities are backing the project. The project was said to have been successful at introducing alternative methods to families living in the desert. Nevertheless, worries exist about the future of the project after its completion.

Final Discussion

Concluding the presentation of various showcase programmes, Mr. Masanori Kobayashi, Programme Management Office (PMO), IGES, highlighted some elements of the presentations and raised some questions for further discussion. He pointed to the needs to give a better valuation to ecosystem services and biodiversity, to further analyse the possibilities of finding a good model for benefit-sharing, to identify the national policy and governance changes that are needed. Further, he also raised the question about a possible APFED III. Emphasis was placed on the fact that for a possible APFED III it is crucial to demonstrate ecological and sociological achievements; however, so far only limited hard data is available to convince the Japanese government to continue financing the project. This perspective was generally agreed upon; however, it was also noted that it is often hard to quantify benefits as they become only obvious over a longer period of time and not immediately. Also financial obstacles for developing an efficient data system collection were observed. In this regard, Mr. Kobayashi suggested a monitoring system which relies on direct information and stories told by the participants and beneficiaries of individual projects.

Session 3: Case Studies from Kitakyushu Initiative and other networks

Mr. Toshizo Maeda, Policy Researcher, Kitakyushu Office, IGES, Ms. Peachie Aquino, Programme Officer, Kitakyushu Office, IGES, and Ms. Naomi Hori, Visiting Researcher, Kitakyushu Office, IGES, outlined the work of the IGES Kitakyushu Office and in particular case studies that inspired their initiative. The main objective of the Kitakyushu Office was described as “environmental improvement through information sharing of good practices among member cities” with a focus on local governments. As a result of limited resources the decision was made not to engage in too costly projects but to concentrate on those which can be easily replicated and can be achieved by using local resources. Sustainability as a vital point for replication of projects was highlighted as crucial. Main activities include mobilization of political support and local resources as well as awareness rising among residents.

Three case studies from the Kitakyushu Initiative’s network which are considered self-sustainable and replicable were brought forward. Each case study used three key strategies for resource mobilization. Firstly, a city vision was established; secondly, it was invested public education and awareness; thirdly, multi-stakeholder partnerships were encouraged. The first case study introduced the conservation project of Puerto Princesa City, the Philippines which set out to become “a City in the Forest”. Protection, rehabilitation and conservation were the main principles of the project. Monitoring organizations as well as annual events to promote forest-friendly living were put in place. Successes include a 5.11% increase in forest cover and a zero marine-related crime rate. The second case study introduced the gardening project of San Frenando City, Philippines, “the Botanical Garden City”. Bringing together the city government, local NGOs, schools and universities, the project established a 20ha botanical garden. The third case study introduces Sibu City and its urban parks management scheme. As a joint development project a total of 25 gardens have been developed across the city. Land-use policy requires all land developers to reserve 10% of their area for landscape or park development. The lessons that can be learned from these case studies are multiple but the presenters stressed that financial incapacity does not always have to be a hindrance for sustainable and environmentally friendly development.

Questions & Comments

Participants praised the case studies introduced as refreshing and reminders of good experiences with conservation projects. Yet, it was also stressed that the projects only included smaller cities which cannot serve as examples for the future development of major cities such as Bangkok or Manila. Further, questions were raised about mediums of awareness raising and hard data collection to underscore the results of those projects. The use of various forms of communication was highlighted as crucial for awareness rising. Further, sustainability of the projects was seen as a clear indicator for success.

Session 4: Monitoring and Evaluation – Lessons drawn from the APFED Showcase Programme and Ryutaro Hashimoto APFED Award

Mr. Kobayashi, Coordinator, Programme Management Office (PMO), IGES, addressed the lessons that can be learned from the APFED Showcase Programme. He noted that the idea of the programme is to collect information and knowledge and then to develop a knowledge database to promote sustainable development. Projects are selected on the basis of relevance, effectiveness, self-reliance, and participation. He underlined that the programme had experienced various management and implementation issues. Particularly, the collection of hard data to identify the success of individual projects has proven difficult. Also issues revolving co-financing and stakeholder involvement were pointed out. Implementation issues include the identification of truly innovative projects, the development of benchmarks, the establishment of an interface between project activities and macro-policies and market mechanisms, and the identification of benefits for multiple stakeholders. Concluding Mr. Kobayashi emphasised the need to develop measures to improve effectiveness in project implementation and lesion sharing, for instance, by collecting stories from participants and beneficiaries from individual projects.

In her presentation Ms. Sana Okayasu, Researcher, Programme Management Office (PMO), IGES, focused on the Ryutaro Hashimoto APFED Award Programme and the Knowledge Initiative Database. She outlined the criteria for the APFED Award noting their overlap with the Showcase Programme. Unlike the Showcase Programme, however, the APFED Award applications are analysed for success factors, critical instruments, impacts, lessons learned, and applicability. The ultimate goal of the programme is to try and develop an Asian model for sustainable growth. To do so it is essential to have a broad view, analyse fields of interest, stakeholder involvement, and major foci of projects. The overall goal is to integrate the results of this analysis in the APFED II report.

Questions & Comments

Interest in the APFED Showcase and Award Programmes was broad. It was noted that it is important for the programmes to also focus on sustainability for project evaluation. Simultaneously, however, it is important not to overstress the word 'sustainability' and rather focus on its general idea of sustainable development, the long-term improvement of human well-being. Generally, it was also pointed out that affirmative government involvement in development and conservation projects is crucial for guaranteeing long-term sustainability. Also the compatibility of innovativeness and sustainability was discussed. It was acknowledged that there may be a need to change the definition of innovativeness to be able to better incorporate sustainability. Further, it was also suggested that it may be possible to increase the attractiveness of the APFED Awards by cooperating with other major organizations such as the World Bank. It was also recommended to provide feedback not only for successful applicants but also for unsuccessful ones.

Session 5 : Information Management on Innovation for Policy and Field Actions: APFED Showcase Programme Information Management Systems

Mr. Manesh Lacoul, UNEP/ROAP, introduced the APFED Showcase Programme Information Management Systems. He outlined the major ways of information dissemination and management reaching from the maintenance of a website to being present on facebook. He illustrated the structure of the website and also analysed website traffic. In April 2009, visitors from 72 countries looked at the website with the highest numbers of visitors coming from India and Indonesia. Major challenges to the information management systems include the need to identify a way to store all necessary data on the website and to encourage interaction amongst users on the website page.

Questions & Comments

In the discussion session, Mr. Kobayashi expressed concern about the imbalance of countries visiting the website and applying for the showcase programme and award. Confidence building amongst stakeholders who are not confident in communicating in English was stressed as crucial. Participants also worried about a too strong emphasis on means of communication related to the internet. It was pointed out that not everyone has access to the internet, or that in some cases the internet is too slow to allow for full scale communication. It was noted that being aware of these issues attempts were made to disseminate knowledge about the programme via regional offices as well. It was also suggested to develop a newsletter and bulletin for NetRes Institutes and to cooperate with organizations such as the Environmental Journalist Association in Asia for this purpose.

Session 6 : Synergies and collaboration among networks for promoting sustainable development in Asia and the Pacific

I. AECEN Activities

Mr. Paul Violette, Chief of Party, Asian Environmental Compliance and Enforcement Network (AECEN), described the structure and purpose of AECEN. He stressed AECEN's commitment to improving the enforcement of existing environmental laws in Asia and the Pacific. Including national and sub-national agencies, AECEN conducts regional studies and training, establishes pilot projects and gives out awards focused on the efforts of women. AECEN's focus in broad reaching from command and control to brown issues of monitoring and enforcement, to incentive based programmes, to pollution charge system, to implementation of multilateral international agreements. Concluding, Mr. Violette reaffirmed AECEN's commitment to further cooperation with IGES.

Mr. Richard Paton, Environmental Governance Team Leader, Asian Environmental Compliance and Enforcement Network (AECEN), put emphasis on the similarities between the twinning programme and the showcase projects as peer-to-peer or south-to-south projects. He underlined that successful development and conservation project do not necessarily have to rely on high-paid consultants from Europe or Northern America but that important lessons can in particularly be learned from other projects in the developing world. Main challenges that AECEN has to face were said to be a need to link up members and to identify priority issues.

II. ASEF Activities

Ms. Susanne Wallenoeffer, Project Executive, the Asia-Europe Foundation (ASEF), and Ms. Dewi Suyenti Tio, Project Coordinator, the Asia-Europe Foundation (ASEF), introduced ASEF as a multi-stakeholder partnership initiative comprising EU and ASEAN member states as well as China, South Korea and Japan. All issues covered by ASEF are interrelated and globally relevant. ASEF serves as a knowledge platform, a think tank for policy recommendation, an interface between environment stakeholders, civil societies and ASEM governments, and as a medium of communication. A major ASEF includes the organization of a roundtable for the purpose of information exchange and the development of policy recommendations. The scenario-building methodology is integrated into this process to encourage fruitful discussions. Additionally, ASEF organized a side event to COP 14, is planning to do so as well for COP 15 and, finally, to establish a conference consisting of of multi-stakeholders from Europe and Asia.

III. SDplanNet – Asia & Pacific Activities

Mr. Peter King, Senior Policy Advisor, Bangkok Office, IGES, outlined the work of the Institute of Sustainable Development. He recognized that in many cases countries did not learn from each other when developing development and conservation strategies. The Institute for Sustainable Development was founded to change this practice and establish a network targeted at practitioners with the purpose of providing tools and techniques for sustainable development planning. Activities include the development of an online library containing information about such tools and techniques, the conduct of virtual learning events, the organization of telephone conferences, the publication of a newsletter and the maintenance of a daily blog. Currently, the Institute for Sustainable Development is planning a first conference which is designed to provide people with the opportunity to present their experiences. A major challenge is the encouragement of increasing user-to-user communication.

Session 7 : Reporting and Future Challenges – Wrap-up Discussions

Dr. Zakri Abdul Hamid, Director, Centre for Global Sustainability Studies, Universiti Sains Malaysia, provided a summary of the previous presentations and discussions. He emphasised that each of the projects presented is noteworthy and represented innovative efforts. However, he expressed doubts about the possibility to establish an Asian Model based on the existence of similar development efforts elsewhere and the imbalance in geographical locations of projects included in the Showcase and Award programmes. Nonetheless, he advocated the continuation of APFED as it servers as a platform for awareness rising. Further, emphasis was put on the need to encourage increasing government involvement in development projects. To see biodiversity come to its rightful conclusion, government needs to be involved. He also called for a mainstreaming of biodiversity in each country and, generally, for better definitions of the terms biodiversity and sustainable development.

Final Discussion

In the final discussion focus was placed on government and private sector involvement in development projects. It was noted that not only the inclusion of governments but also of the private sector can help to continue development initiatives since in some cases private companies are financially stronger than governments. Moreover, caution was demanded when calling for increasing government involvement. Until now governments have often not been committed to environmentally friendly development projects. Only if their support is more than an empty promise, they should participate in development. Also the fact that many projects originally evolve from the bottom and only later become of interest for policy makers has to be remembered. Generally, however, it was agreed that governments as the face of countries should be more than bystanders.

The Asia-Europe Environment Forum (ENVforum)

Scenario Workshop
"Developing Biodiversity and Ecosystem Services Scenarios"

27-28 June 2009

The Asia-Europe Environment Forum (ENVforum) 7th Roundtable "The Accounting of Nature: Biodiversity and Ecosystem Services in Asia and Europe" was held at the Shonan Village Center in Hayama, Japan from June 29 to June 30, 2009. As a part of ISAP, it was preceded by the scenario workshop "Developing Biodiversity and Ecosystem Services Scenarios", held at the Shonan Village Center in Hayama, Japan from June 27 to June 28, 2009. The scenario workshop discussed the role of the business sector in promoting innovative practices, against a background of previously developed future scenarios for biodiversity and ecosystem services with special focus on Asia and Europe. The results of the workshop were incorporated into the discussions at the roundtable.

The roundtable was part of the Asia-Europe Environment Forum series; co-organised by the ASEF, the Hanns Seidel Foundation (HSF), the Swedish Environmental Secretariat for Asia (SENSA), the Institute for Global Environmental Strategies (IGES), and the United Nations Environment Programme (UNEP). This roundtable was hosted by IGES.

The Asia-Europe Environment Forum (ENVforum) 7th Roundtable was intended to facilitate multistakeholder dialogue from both Asia and Europe and provided a platform to experts to identify opportunities for bi-regional cooperation in the area of biodiversity and ecosystem services. Around 60 participants and observers from governments, NGOs, research institutes, academia, and the private sector attended the roundtable.

During the first part of the roundtable, participants discussed key policy issues in the areas of biodiversity and ecosystem services, taking into account the urgent need to curtail the drivers that undermine environmental integrity and human well-being. Further, ideas to facilitate effective policy measures and actions to overcome policy challenges were presented. Roundtable participants identified policy and institutional gaps and discussed policy options to overcome the challenges in order to prompt required policy and institutional transformation. The participants also looked at the Green New Deal and strategies on how to better valuate biodiversity and ecosystem services. Case studies with a focus on key ecosystems (forests, freshwater/ wetlands, secondary ecosystems) and the impact of climate change and human activity on those systems were also presented. Participants further discussed various economic valuation and payment schemes in connection with biodiversity and ecosystem services that involve different stakeholders and sectors in Asia and Europe. Another session focused on business opportunities for the private sector with a view to nurturing and capitalizing upon ecosystem services.

By and large, the Roundtable discussions delineated numerous issues and recommendations. Policy and technology were considered as imbedded drivers for promoting biodiversity and ecosystem service conservation and their sustainable use. The importance of multi-faceted approaches was repeatedly emphasised. Moreover, it was said that further empirical studies are required to propagate good practice including valuation and payment for ecosystem services.

A scenario approach has proven to be an effective tool for capacity building. International innovative funding scheme concepts require further elaboration and discussions for better embodiment and pragmatic application.

The Asia-Europe Environment forum (ENVforum) continues to be a key policy dialogue platform and a number of future activities were suggested including a plan to explore a joint position paper in the process that will lead to the next UNCBD/COP10 in Japan in October 2010.

Programme

ISAP Open Session

▸ Day 1 26 June 2009

[Main Venue] Shonan Village Center (SVC) Auditorium

Opening Session

9:30-9:50

Opening Remarks
Hironori Hamanaka, Chair of the Board of Directors, IGES

Guest Remarks
Kazuhiko Takemoto, Vice-Minister for Global Environmental Affairs, Ministry of the Environment, Japan
Yoshihiro Ono, Vice-Governor of Kanagawa Prefecture

9:50-11:00

Keynote Speeches

- **Low-Carbon Society for Sustainable Asia and the Pacific**
  Nay Htun, State University of New York, Stony Brook
- **Research Frontiers for Low-Carbon Energy Systems: Some Reflections on UK Transition Pathways**
  Peter Pearson, Director, Imperial College, Centre for Energy Policy & Technology (ICEPT)

[Moderator] Charmine Koda, Journalist

11:00-12:30

【Panel Session 1】Efforts to Shift towards Low-Carbon Societies in Selected Countries*

[Moderator] Charmine Koda, Journalist
[Panelists]

- **Efforts to Shift towards Low-Carbon Societies in Selected Countries**
  Eric Kaler, Provost and Senior Vice President for Academic Administration, State University of New York, Stony Brook
- **Low-Carbon Development in China**
  Xia Kunbao, Member of the Board of Directors and Advisor, All-China Environment Federation
- **Efforts to Shift towards Low-Carbon Societies (LCS) in India**
  Ritu Mathur, Associate Director, Energy Environment Policy, The Energy and Resources Institute (TERI)
- **Low-Carbon Economy and Green Growth in Korea**
  Hoi-seong Jeong, Former President, Korea Environment Institute; President, Korea Environmental Policy and Administration Society
- **Efforts to Shift towards Low-Carbon Society: Japan**
  Shuzo Nishioka, Senior Reseach Advisor, IGES; Senior Visiting Researcher, National Institute for Environmental Studies (NIES)

【Panel Session 2】Efforts to Shift towards Low-Carbon Societies in Japan*

[Moderator] Charmine Koda, Journalist
[Panelists]

- **Efforts to Shift towards Low-Carbon Societies in Japan**
  Hiroaki Takiguchi, Director, Office of International Strategy on Climate Change, Climate Change Policy Division, Ministry of the Environment, Japan
- **Efforts to Shift towards Low-Carbon Societies in Japan**
  Reiji Hitsumoto, Director for Eco-Model City Affairs, Environment Bureau, City of Kitakyushu
- **Efforts to Shift towards Low-Carbon Societies in Japan**
  Masayuki Sasanouchi, Senior General Manager, CSR & Environmental Affairs Division, Toyota Motor Corporation
- **Toward New Paradigm of Energy & Environmental Policy From Mode1 to Mode 3**
  Tetsunari Iida, Executive Director, Institute for Sustainable Energy Policies (ISEP)
- **Efforts to Shift towards Low-Carbon Society in Japan**
  Mikiko Kainuma, Chief, Climate Policy Assessment Research Section, Center for Global Environmental Research (CGER), National Institute for Environmental Studies (NIES)

* planned and convened as part of Japan Symposium on LCS-Rnet

12:30-13:45 Lunch

Sessions on Individual Themes

13:45-15:05

Taking a Co-benefit Approach: Potential and Prospects in Asia

[Moderator] Charmine Koda, Journalist
[Panelists]

- **Japan's Co-benefits Approach**
  Tokuya Wada, Director, Office for International Cooperation, Environmental Management Bureau, Ministry of the Environment, Japan
- **Taking a Co-benefit Approach in Asia**
  Cornie Huizenga, Vice Chairman, CAI-Asia
- **The Co-benefits of Transportation Policies in Asia**
  Michael Walsh, ICCT
- **Institutional Barriers to Co-benefits**
  Eric Zusman, Policy Researcher, Climate Policy Project, IGES
- **Co-benefits from Air Pollution Viewpoints**
  Katsunori Suzuki, Professor, Kanazawa University
- **The CDM and Co-benefits**
  Yuji Mizuno, Manager, Market Mechanism Project, IGES

[Panel Discussion]

15:05-15:20 Coffee Break

15:20-16:40

Can REDD Save the World's Forests?

[Introduction]
Henry Scheyvens, Manager, Forest Conservation Project, IGES
[Key Presentations]

- **Update on International Negotiations**
  Nobuyuki Muto, Forestry Agency of Japan
- **Can REDD Save the World's Forests? A Case of Indonesia**
  Fitrian Ardiansyah, WWF-Indonesia

[Moderator] Hideyuki Mori, Vice-President, IGES
[Panelists]
Nobuyuki Muto, Forestry Agency of Japan
Fitrian Ardiansyah, WWF-Indonesia
Amanda Bradley, Pact, Cambodia
Henry Scheyvens, Manager, Forest Conservation Project, IGES
[Panel Discussion]

16:40-16:55 Break

16:55-18:30

Biofuels and Sustainability in Asia

[Moderator] Tetsunari Iida, Executive Director, Institute for Sustainable Energy Policies (ISEP)
[Panelists]

- **Introduction**
  Mark Elder, Principal Researcher and Manager, Policy and Governance Team and Biofuel Project, IGES
- **Biofuels in India**
  Surya P. Sethi, Principal Adviser (Energy), Planning Commission, Government of India
- **Biofuel Policies and Programmes in Indonesia**
  Saryono Hadiwijoyo, Director, Oil and Gas, Ministry of Energy and Mineral Resources, Indonesia (representing Evita Legowo, Director General)
- **ERIA Working Group on "Sustainable Biomass Utilisation in East Asia"**
  Masayuki Sagisaka, Leader, Material & Energy Sustainability Assessment Group, Institute of Science for Safety & Sustainability, National Institute of Advanced Industrial Science & Technology (AIST)
- **Energy Security and Biofuel for a Low-Carbon Economy in the Asia-Pacific Region**
  KK Philip Kang, Economic Affairs Officer, Energy Security Section, Environment and Development Division (EDD), ESCAP

[Panel Discussion]

[Sub Venue] Shonan Village Center (SVC) Conference Room1 * English

13:45-18:00

Potential of Economic Modelling in Formulating Sustainable Development Policies

- **Integrated Policy Impact Assessment CGE Model for Trade, Environment and Regional Cooperation**
  Satoshi Kojima, Senior Researcher and Manager, Economic Analysis Team, IGES
- **Impact of Cross Border Energy Infrastructure Investment on Regional Environment, Society and Climate Change**
  Anindya Bhattacharya, Researcher, Economic Analysis Team, IGES
- **Accounting National Emissions Adjusted for Trade: How Will Consumption-based Approach Make Changes in Response to Climate Change?**
  Xin Zhou, Senior Researcher and Co-manager, Economic Analysis Team, IGES
- **Shared Producer and Consumer Responsibility**
  Manfred Lenzen, Professor, Centre for Integrated Sustainability Analysis, University of Sydney
- **Analysing Policies for Achieving the MDGs with MAMS**
  Hans Lofgren, Senior Economist, Development Prospects Group, World Bank
- **Wrap up and Closing Remarks**
  Satoshi Kojima, Senior Researcher and Manager, Economic Analysis Team, IGES

[Sub Venue] Shonan Village Center (SVC) Conference Room 2 * Japanese

15:20-16:40

What's Happening with the CDM and JI - Analysing Trends in the Data

- **Current Status and Prospect for CDM Projects: Findings from IGES CDM Project Database**
  Keisuke Iyadomi, Researcher, Market Mechanism Project, IGES
- **The Issues to be Addressed in the CDM: Findings from IGES CDM Review and Rejected Project Database**
  Kazuhisa Koakutsu, Sub Manager, Market Mechanism Project, IGES
- **Current Status of JI Projects: Finding from IGES JI Project Database**
  Nozomi Okubo, Visiting Researcher, Market Mechanism Project, IGES
- **What's on in International Negotiation?: Brief Report of SB30 in Bonn**
  Yuji Mizuno, Manager, Market Mechanism Project, IGES

[General Discussion]

16:55-18:30

CO_2 Reduction Measure in Small to Medium Sized Businesses and Households

[Explanation of the Outline] Tetsuro Fujitsuka, IGES Kansai Research Centre
[Presentation]
Suggestion for the Practical Measure of Reduction of CO_2 Emissions in Households - "Uchi-Eco Diagnosis" Project
Yusuke Matsuo, Researcher, IGES Kansai Research Centre
[Panel Discussion Session 1]
Measurements for Reduction of CO_2 Emissions in Households
[Panel Discussion Session 2]
Measurements for Reduction of CO_2 Emissions in Small to Medium Sized Businesses
[Moderator]
Hidefumi Imura, Professor, Nagoya University
[Panelists]
Yusuke Matsuo, Researcher, IGES Kansai Research Centre
Michie Kishigami, Head of the Secretariat of ICLEI
Toshizo Maeda, Policy Researcher, IGES Kitakyushu Office
Kentaro Yamaguchi, Director of Promoting Electric Vehicle, Environment and Agriculture Department, Kanagawa Prefectural Government
Eiji Endo, Assistant Director, Air Division, Hyogo Prefectural Government

ISAP Open Session ▸ Day 2 27 June 2009

Sessions on Individual Themes

[Venue] Shonan Village Center (SVC) Auditorium (with simultaneous interpretation)

9:30-11:20

Towards Sustainable Consumption in Developing Asia: Challenges and Needs

[Moderator]
Monzurul Huq, Long-term Tokyo Correspondent of the Bangladeshi Daily Newspapers Daily Star and Prothom Alo
[Panelists]

- **Sustainable Consumption: The Challenge**
  Sylvia Lorek, Head of Sustainable Consumption Research, Sustainable Europe Research Institute (SERI)
- **Sufficiency Economy and Sustainable Consumption: Experiences of Thailand**
  Pattamawadee Pochanukool Suzuki, Associate Professor, Dean, Faculty of Economics, Thammasart University
- **Towards Effective International Sustainable Consumption Policy: Beyond the Marrakech Process**
  Lewis Akenji, Researcher, Waste and Resources Project, IGES
- **Sustainable Consumption in Asia: IGES' Current and Future Research**
  Magnus Bengtsson, Senior Policy Researcher, Waste and Resources Project, IGES
- **Toward "Strong" Sustainable Consumption**
  Maurie Cohen, Associate Professor, Graduate Program in Environmental Policy Studies, New Jersey Institute of Technology

[Panel Discussion]

11:20-11:30 Break

11:30-12:50

New Form of Multi-Stakeholder Partnership for Environmental Leadership Development towards Establishing Sustainable Asia

[Moderator] Charmine Koda, Journalist
[Panelists]

- **Japan's Case (National Level Network): Introduction of Environmental Consortium for Leadership Development (EcoLeaD)**
  Ken Morishita, Secretary-General, Environmental Consortium for Leadership Development (EcoLeaD); IGES Fellow
- **Japan's Case (Local Network Building for Higher Education) : Toward the Establishment of Chubu Consortium for Environmental Leaders Development**
  Hidefumi Imura, Professor, Nagoya University
- **Thailand's Case: Multi-stakeholders Partnership for Environmental Capacity Development: Perspectives from AIT**
  S. Kumar, Professor and Dean, School of Environment, Resources, and Development, Asian Institute of Technology (AIT)
- **China's Case: International Partnership Development for the International Master's Degree Program**
  Fengting Li, Professor, Vice Dean, College of Environmental Science and Engineering, UNEP-TONJI Institute of Environment for Sustainable Development
- **Education for Sustainable Development Programme: ProSPER.Net Initiative**
  Yoshihiro Natori, Senior Research Fellow, United Nations University
- Itaru Yasui, Professor Emeritus, Tokyo University

[Panel Discussion] **Areas of Future Cooperation among Different Initiatives**

12:50-14:00 Lunch

14:00-15:00 **Do Economic Incentives Promote Sustainable Use of Groundwater?**

[Moderator]
Monzurul Huq, Long-term Tokyo Correspondent of the Bangladeshi Daily Newspapers Daily Star and Prothom Alo

[Panelists]

- **Discussion on Sustainable Groundwater Management in China**
  Jianqing Yang, Deputy Director, Centre for Groundwater Monitoring of Ministry of Water Resources of China
- **Economic Instruments for (Ground) Water Management in Australia**
  Richard Hopkins, Chief Executive Officer, The International Centre of Excellence in Water Resources Management (ICE WaRM)
- **Do Economic Incentives Promote Sustainable Use of Groundwater? Evidence from South Asia**
  Aditi Mukherji, Researcher, Social Scientist, International Water Management Institute (IWMI)
- **Groundwater Charges in Bangkok - A Case of Groundwater Management in Asian Cities**
  Yatsuka, Kataoka, Project Manager, Freshwater Project, IGES

[Panel Discussion]

15:00-15:20 Coffee Break

15:20-17:20 **Ecosystem Services and Biodiversity - Challenges and International Cooperation**

[Opening Remarks]
Tsunao Watanabe, Director of the Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment, Japan

[Keynote Remarks]

- **Rebuilding the Relationship between Human and Nature and CBD Post 2010 Target**
  Kazuhiko Takeuchi, Vice Rector of the United Nations University

[Panel Discussion]
[Moderator] Charmine Koda, Journalist
[Panelists]

- **2010 Biodiversity Target: Key Aspects and Challenges**
  Zakri Abdul Hamid, Director, Centre for Global Sustainability Studies Universiti Sains Malaysia
- **Road to Nagoya: the CBD, COP10 and Beyond**
  Ahmed Djoghlaf, Executive Secretary of the Convention on Biological Diversity
- **Pursuing Indigenous Community of District Tharparkar, to Protect Wildlife**
  Tanveer Arif, CEO, Society for Conservation and Protection of Environment (SCOPE)
- **APFED Lessons and Findings on Biodiversity and Sustainable Development**
  Masanori Kobayashi, Coordinator, Programme Management Office, IGES

[Discussant]
Cielito Habito, Professor and Director, Ateneo Center for Economic Research and Development

17:20-17:30 Break

17:30-18:00 **Closing**

ISAP Summary
[Moderator] Hideyuki Mori, Vice-President, IGES

Mahesh Pradhan, Director, United Nations Environment Programme/Regional Resource Centre for Asia and the Pacific (UNEP/RRCAP)

Kazuhiko Takeuchi, Vice Rector of the United Nations University

S. Kumar, Professor and Dean, School of Environment, Resources and Development, Asian Institute of Technology (AIT)

Closing Remarks
Hironori Hamanaka, Chair of the Board of Directors, IGES

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