

ISAP 2010

International Forum for Sustainable Asia and the Pacific: ISAP
12-13 July 2010



Sustainable and Low-Carbon Development
— Innovative Pathways for Asia-Pacific



ISAP2010

International Forum for Sustainable Asia and the Pacific: ISAP

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Event Outline

Raising hot issues in the region

ISAP2010, under the main theme of “low-carbon development in Asia and the Pacific,” focused on Climate Change and Sustainable Consumption and Production (SCP) together with important issues in the region including co-benefits, REDD, Clean Development Mechanism (CDM), biofuels, corporate environmental management as well as biodiversity. The forum provided a platform to share the latest research results and actively discuss challenges and potential measures.

Special focus on Sustainable Consumption and Production

ISAP2010 launched the Third IGES White Paper entitled “Sustainable Consumption and Production in the Asia-Pacific Region: Effective responses in a resource constrained world”. Relevant events including a Keynote Discussion, Thematic Sessions and Special Lunch Session were held to discuss and explore the future directions of SCP.

780 participants from diverse sectors

ISAP2010 held thirteen Open Sessions, ten Expert Workshops and one Network Meeting with about 780 participants including more than 60 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.

ISAP 2009 at a glance

Open Sessions

Plenary Sessions

Keynote Session “*Long-Term Perspectives to Build a Low-Carbon Asia-Pacific*”

Panel Discussion “*Establishing an Asian-style Cooperative System towards a Low-Carbon Asia-Pacific 2020*”

IGES White Paper III Launch: Keynote Discussion

*“Moving Away from the Mass-Production and Mass-Consumption Economy:
An alternative development model in Asia?”*

Thematic Sessions

- Asia-Pacific Perspectives on Future Climate Regime
- Accounting for Co-benefits: Towards stronger climate change, development, and air pollution policies in Asia
- REDD+: Progress, Challenges and Ways Forward - from the Local to the Global
- Mainstreaming Adaptation: Linking research and actions on the ground
- Transitioning to SCP: Opportunities for Asian prosperity on a finite planet
- Coping Strategies for Groundwater Under Threat
- The Challenges and Opportunities for Improving Corporate Environmental Management in Developing Asia
- Can Biofuels Contribute to Building a Sustainable Society?
- Harnessing Biodiversity: Strategic policies and concerted actions

Special Lunch Session

“Key Messages from the IGES White Paper III: Current responses and the future direction of SCP in the Asia-Pacific region”

Key Messages to promote the sustainability agenda

Based on the presentations and discussions at ISAP2010, 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 a sustainable agenda in the region.

Date	12-13 July 2010 (Mon./Tue.)
Venue	PACIFICO YOKOHAMA, Conference Center 5F (1-1-1 Minato Mirai, Nishi-ku, Yokohama, Japan)
Organiser	Institute for Global Environmental Strategies (IGES)
Supporters	Ministry of the Environment of Japan, Kanagawa Prefectural Government, Hyogo Prefectural Government, City of Kitakyushu, City of Yokohama, United Nations Environment Programme/ Regional Office for Asia and the Pacific (UNEP/ROAP), United Nations University (UNU), Asian Development Bank (ADB), The Energy and Resources Institute (TERI), Asian Institute of Technology (AIT), National Institute for Environmental Studies (NIES), Japanese Association of Groundwater Hydrology, Nikkei Business Publications, Inc.
Cooperation	CITYNET, City of Kawasaki, Teijin Limited, NISSAN MOTOR CO.,LTD., Mitsubishi Motors Corporation
Number of Participants	12 July: 390 persons / 13 July: 390 persons (780 persons over two days in total)

Expert Workshops

- [Open Seminar] What's happening in the CDM?: Searching for the truth through the IGES databases
- Engagement of Japanese Organisations in REDD+: Update on progress and planning
- Strengthening International Cooperation on Management of Regional Air Quality in East Asia
- Planning Meeting on the Regional Water Knowledge Hub for Groundwater Management of Asia-Pacific Water Forum
- Economic Modelling of Resource Circulation Issues
- Expert Review of Transportation Cobenefits Guidelines
- Possible Collaboration Activities for Supporting Country-based Model Cities Programme
- Evaluation of the Sustainability of Biofuels from Multiple Perspectives
- Is Asia in a Good Position to Achieve Sustainable Low-Carbon Development?
- Adaptation in Agriculture and Water Sectors in Japan and Its Relevance for Developing Countries in the Asia-Pacific

Information-
Sharing
& Discussions

Key
Messages

Network Meeting Asian Environmental Compliance and Enforcement Network (AECEN)

Open Sessions

Plenary Sessions

Plenary Sessions

1 Opening Remarks

Opening Remarks

Hironori Hamanaka Chair of the Board of Directors, IGES



IGES has been conducting practical and innovative policy research for realising sustainable development in the Asia-Pacific region. It has been 12 years since IGES was established, and in April of this year the institute entered the 5th phase of its integrative strategic research programme to disseminate high quality research results in a timely manner and to make a greater impact on policy formulation.

ISAP aims to serve as a platform to provide opportunities to boost information-sharing and strengthen collaborative efforts with various stakeholders including experts, policy-makers and business through diverse discussions on hot issues based on the IGES's latest research results and accumulated international networks, and eventually to contribute to innovative policy formulation. Under the main theme of "low-carbon development in Asia and the Pacific" in the face of a global climate crisis, ISAP 2010 will focus on "climate change policies" and "sustainable consumption and production" as well as other important issues in the region.

Guest Remarks

Shigefumi Matsuzawa Governor of Kanagawa Prefecture

IGES, established in 1998 with the support of Kanagawa Prefecture, has been making policy recommendations in the Asia-Pacific region, an area with rapid population and economic growth. The focus has been on such issues as climate change and the clean development mechanism (CDM), for which IGES has won wide acclaim. IGES has even contributed to the Nobel Prize laureate Intergovernmental Panel on Climate Change (IPCC) activities. With all these achievements, IGES is an intellectual asset that Kanagawa prefecture can be proud of.

In the on-going post-Kyoto negotiations, Kanagawa has been making efforts to promote comprehensive actions for global warming at the prefecture level and taking the lead in Japan. In this regard, it is quite significant for international society to bring together diverse stakeholders including prefecture residents and to have a chance to conduct discussions for realising a low-carbon Asia-Pacific.



Guest Remarks

Kazuhiko Takemoto

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

In order to pursue sustainable and low-carbon development globally, Japan is now promoting the International Research Network for Low Carbon Societies (LCS-RNet), in which IGES takes a central role. Japan has also declared ambitious targets to reduce GHG and wishes to contribute to the progress of international negotiations by strengthening support given to developing countries. At the Tenth Meeting of the Conference of the Parties to the CBD (COP10), due to be held in Nagoya, Japan in 2010, diverse and crucial issues will be discussed such as the post 2010 targets, sustainable use of biodiversity symbolised by the Satoyama Initiative, as well as climate change and biodiversity. As the host country, Japan is considering ways of providing an active discussion forum and producing sufficient results from this event. During COP10, a REDD+ ministerial meeting will also be scheduled.

Finally, it is hoped that the results of ISAP2010 covering important issues will be disseminated worldwide and make a great contribution to international society.



2 Keynote Session

LONG-TERM PERSPECTIVES TO BUILD A LOW-CARBON ASIA-PACIFIC

[Moderator] Ryokichi Hirono, Professor Emeritus, Seikei University

Bindu N. Lohani, Vice-President (Finance and Administration), Asian Development Bank (ADB)

Said Irandoust, President, Asian Institute of Technology (AIT)

Hoesung Lee, Vice-Chair, Intergovernmental Panel on Climate Change (IPCC)

Session Outline

COP15 held in Copenhagen unfortunately did not result in a specific climate change regime after 2012. However, it is inevitable that countries, both developed and developing, will have to act together to deal with climate change on both the mitigation and adaptation fronts. Asia is now the economic growth centre of the world, so countries in the region will undoubtedly have an increasingly important role in the future climate regime that will emerge from global negotiations. Indeed, Asian countries have already been aiming for green growth focusing on measures against climate change, and some countries have submitted their reduction target and actions in line with the Copenhagen accord. Through their presentations and discussions the panellists offered perspectives on present needs and long-term necessities for building a low-carbon Asia-Pacific, representing developmental, academic and inter-governmental organisations.

Key Messages

- **Low-carbon development is important but cannot be seen as singular; it is interlocked with other sustainable development issues such as the reduction of poverty – which requires jobs and green growth;**
- **Asians produce and consume more, and Westerners are faced with changing consumption patterns due to the financial crisis and pressure to increase savings, therefore sustainable consumption and production becomes even more important to building a low-carbon economy;**
- **Education, human rights and ethical values are fundamental to strengthening democracy and overcoming other challenges such as poverty. Sustainable development needs a holistic approach as it is not just about the environment or economies; it has synergies between cultural, social, political, and spiritual dimensions;**
- **Inertia and uncertainty are defining features of climate change with implications for global climate policy. Even if CO₂ levels were to stabilise changes would continue, while uncertainty is so large that a considerable risk premium is warranted. Essentially, adaptation is inevitable.**

Professor Ryokichi Hirono Professor Emeritus, Seikei University



Prof. Hirono opened the session by thanking Mr. Mori, commenting on the previous day's election, and noting that at this second round of ISAP we are taking up major issues facing the Asia-Pacific region. Prof. Hirono framed the session by stating that the purpose was to discuss the long-term perspectives in building a low-carbon AP. However low-carbon cannot be seen as singular, it is interlocked with other issues. He requested the speakers and audience to therefore ask questions not just on low-carbon but also on the interlinking issues.

APEC will be held in Kanagawa this autumn, and part of the discussion will be on a growth strategy for the near future. Prof. Hirono suggested four key phrases of relevance to the region with regards to this event: the global imbalance in the region, and how we can face it; green growth, which we would like to achieve based on low-carbon development; inclusive growth, where the benefits of the growth will be broadly shared; and, finally, innovative growth, where the results and achievements of innovative research are used for growth. These will be discussed at APEC, and, as the first three have relevance to our own discussions, they could be used as input the event.

This concluded Prof. Hirono's introduction to the keynote session. He then introduced the first speaker, Dr. Bindu N. Lohani.

Long-Term Perspectives to Build a Low Carbon Asia-Pacific

Dr. Bindu N. Lohani Vice-President (Finance and Administration), Asian Development Bank (ADB)

After giving thanks to those in attendance and the organisers, Dr. Lohani remarked that Japan reminds us of the Kyoto Protocol, and as a model for energy efficiency, in many ways the world looks to Japan as a leader. At ISAP2010 there are many experts on climate change and UNFCCC, but Dr. Lohani wondered how a multilateral bank like ADB can contribute and pursue low-carbon as a core anchor of its strategy. Firstly business investment is not simply a strategy, but a core policy of ADB. As such, how we aim to get out of our global economic crisis and how to tackle climate change are two of the biggest issues we face. Asia has export difficulties, but globally there was a 25% reduction in GHG due to the crisis – at the same time though we must admire what some governments have done with significant amounts directed towards green investment – such as US, China, and Republic of Korea. Around 2% of GDP in the



Republic of Korea is directed towards green growth. Even in times of crisis green strategy is still considered important, and looking beyond the crisis this has become a huge business.

The global payment imbalances need to be adjusted and Asia can do its part by promoting the shift towards more domestic and regional demand as sources of dynamic growth and rebalancing in the export/import sectors. Essentially, Asians should produce and consume more, and Westerners should save more. As this takes place sustainable consumption and production becomes an integral part of the low-carbon economy. Asia will be investing \$8 trillion on infrastructure – so this is a good chance to invest in a low-carbon economy. Personally, Dr. Lohani feels very optimistic as there are many good signs, but things are not going to happen easily. However, to promote green growth or a low-carbon pathway, developing Asian countries will need to make major transformations.

5 major transformations:

1. Energy sector. There needs to be a massive shift to cleaner production of energy. ADB supports clean energy, in particular energy efficiency and the development of renewable energy supplies. ADB aims to increase their current USD1 billion a year investment agenda for clean energy to USD2 billion by 2013. On the renewable side, ADB is scaling up operations. The Asian Solar Energy Initiative plans to catalyze 3000 megawatts of solar power by 2013. For wind power the Quantum Leap in Wind Initiative is aiming for an additional 1 gigawatt of power in five priority countries.

2. Urban development sector. By 2015 55% of greenhouse gas emissions will come from Asian cities, while transport related emissions are expected to increase by 57% worldwide by 2030. Under ADB there is a Sustainable Transport Initiative with annual lending of USD4 billion from 2010-2012. This will support a shift to more modern systems, sound urban planning, waste management, and a sustainable transport agenda.

3. Agriculture and land use. This transformation promotes low-carbon transition by managing land use and forests. ADB will provide targeted support for the REDD plus agenda.

4. Climate resilient development – Dr. Lohani stated outright that this is hard and is a defining concern across the Asia-Pacific. ADB is promoting mainstreaming of disaster plans in national development plans, but we also need to make sure that the climate resilience agenda is incorporated in other sectors – transport, agriculture, health etc.

5. Facilitate technology transfer – ADB is giving innovative support such as through local currencies, wind projects, and guarantee schemes to promote technology transfer. Another area is the global carbon market which is expected to expand under a post-2012 climate change regime. Within ADB, there are several funds to support carbon market initiatives such as the Asia-Pacific Carbon Fund and the Future Carbon Fund with total resources of over \$350 million. In addition to these carbon funds the ADB is also looking at new ways to provide financing. An example given of this is water bonds which are meant to capture the growing number of investors who are willing to buy socially responsible bonds. New financing instruments are required because the need for resources demands it and traditional means cannot always be sufficient. ADB plans to create a market for technology transfer by protecting intellectual property rights. In this regard ADB will play the honest broker role, with a guarantee fund. There is a great lack of knowledge just to do day to day business and so there is a need for information and expertise. ADB needs to work with organisations such as IGES which has experience such as the Indonesian programme loan. More of that type of operational research would help ADB to get resources to countries faster. As it stands now, Asia has a chance for transformation, but there is a need for a policy shift. Asians are good at taking challenges and making things happen.

Capacity Development for Low Carbon Economies — AIT's Perspectives

Professor Said Irandoust President, Asian Institute of Technology (AIT)

Prof. Irandoust's speech focused on capacity development for low-carbon economies from the perspective of the Asian Institute of Technology. After thanking IGES, Prof. Irandoust explained that as AIT is a network institute they are dependent on platforms such as ISAP.

Prof. Irandoust outlined his presentation as covering the following topics: sustainable development in the context of climate change and the importance of a holistic approach for sustainability; a new paradigm for development which is inclusive, with innovative kinds of growth and sustainability; Green jobs for promoting green economies – and the need for a link with universities for creating green jobs; and capacity building and technology transfer, which are necessary for the five transformations which Prof. Lohani mentioned in his presentation and require a long-term strategy.



Sustainable development needs a holistic approach as it is not just about the environment or economies; it has cultural, social, political and spiritual dimensions. In that same vein, Education for Sustainable Development (ESD) is not just about environmental education, but about the holistic process of achieving human development. These human/social/economic/environmental dimensions of sustainable development must be inclusive of all regions/groups/generations while integrated development must include all these dimensions and multiple stakeholders from multiple levels from the national, local and global. Of the most frequently identified challenges for human and social development Prof. Irandoust noted that the number one challenge is poverty reduction and the number two challenge is sustainable development. There are synergies between the challenges facing human and social development, as without addressing such issues as human rights, education and ethical values that overcome other challenges such as poverty, strengthening democracy will be very difficult. Many countries are facing huge challenges in achieving the Millennium Development Goals, while very fundamental issues such as those just mentioned are still a major concern.

Prof. Irandoust then continued to the second point on creating a new paradigm for development based on a green economy. Multiple crises – financial, fuel, food, ecosystems, and climate – form the impetus for creating a new development paradigm as these affect all countries globally, but the developing countries are affected the most. He quoted American President Obama who emphasises accelerating the transition to face these crises, stating *“For decades, we have known the days of cheap and easily accessible oil are numbered. Now is the moment for this generation to embark on a national mission to unleash America’s innovation and seize control of our own destiny...”*

Prof. Irandoust outlined a common understanding of a green economy which includes increasing green investment, the quality and quantity of green jobs, and the percentage of GDP coming from the green sector; and decreasing energy/resource use per unit of production, CO₂ and pollution, and wasteful consumption. Already we are into a green economy in many ways in terms of the growth we are seeing across the globe in green sector jobs.

The third point mentioned was on green jobs. Two key challenges for a sustainable society and economy were mentioned –averting dangerous and potentially unmanageable climate change while protecting the natural environment; and providing decent work and thus the prospect for well-being and dignity in the face of increasing populations. In this regard universities and institutions must be prepared for new jobs, as some jobs will be eliminated, others substituted, and some jobs redefined. Prof. Irandoust feels the future job opportunities will be tremendous in the green sector.

Lastly Prof. Irandoust addressed the fourth and final point regarding AIT's perspectives on capacity building and technology transfer as demonstrated through examples of Education for Sustainable Development at AIT. Examples included Research Focus on "Sustainable Development in the Context of Climate Change"; AIT-UNEP Regional Resource Center for Asia-Pacific; 3R-Knowledge Hub; Yunus Center at AIT; CSR Asia Center; ASEAN MDG Regional Center of Excellence; Poverty Reduction and Agricultural Management (PRAM); Wetland Alliance Program (WAP); Promotion of Sustainability in Postgraduate Education and Research (ProSPER.Net); Regional University Consortium (RUC); and the CSR Centre.

Prof. Irandoust then made a linkage between one of the themes of ISAP2010, sustainable consumption and production, and the role the private sector can play in terms of sustainability, stressing the importance of training and collaboration to help the transition to SCP. In relation to this, he mentioned the importance of networks such as with IGES to support information sharing.

In this era, the old concept of universities is dying out and a new paradigm is taking over. As such, we need to have a societal perspective on science and to produce new knowledge for practical application with high relevance, utility and economic impacts. Our research needs to be intentional, purposive and manageable, and responsive to market requirements. Overall, there is a need for change in education and planning.

Climate Actions and National Interests

Dr. Hoesung Lee Vice-Chair, Intergovernmental Panel on Climate Change (IPCC)

Dr. Lee presented on climate action and national interests, with a focus on low-carbon society. He finds that the origins of "low-carbon society" are not clear, as even in Our Common Future only 2 pages were devoted to climate change out of more than 350 pages. That being said, Dr. Lee feels that the book has a remarkable insight and the message is as valid now as it ever was:

"Many important economic and social decisions are being made today on ... major water resource management activities such as irrigation and hydropower; drought relief; agricultural land use; structural designs and coastal engineering projects; and energy planning—all based on the assumption that past climatic data, without modification are a reliable guide to the future. This is no longer a good assumption."

Using graphs and charts to emphasise his point, Dr. Lee stated that the speed and level of accumulation of greenhouse gasses has been unprecedented. In the past, increases of GHGs have occurred, but over thousands of years, not in a hundred years. The defining features of climate change are inertia and uncertainty. For example in the built environment inertia is seen in the long life of power plants, roads, and even in land use decisions that may last years – or even generations. Even after CO₂ levels are stabilised, things will continue to change due to this inertia. Uncertainties, such as in the projections for warming and damage resulting from climate change, can greatly affect how and when decisions are made. As such, adaptation is inevitable and hedging strategies and sequential decision-making are appropriate, and a safety margin should be factored in.

Regarding the Copenhagen Accord, Dr. Lee suggested to put it in perspective and see it as a meaningful first step. In quoting an IPCC report from 1996, Dr. Lee said that the challenge is not to find the best strategy for the next 100 years, but to select a prudent strategy for now. And in the absence of a binding global climate agreement, any reasons for climate actions are domestic rather than international. In this regard he offered three criteria for mitigation actions and national interests. Criteria one was for co-benefits of improved health and agriculture. Criteria two focused on the positive impacts of mitigation action on employment. Criteria three focused on the impacts of mitigation on the energy sector, which has strong synergies with the transport sector.

In closing Dr. Lee stated that the substitution of low carbon energy for high carbon must be done on a global scale, and in the absence of a binding global agreement we must be sure that mitigation is in harmony with national interests.



Question and Answer Period

The first question was directed to Prof. Lohani regarding protection of intellectual property in the context of technology transfer. As ADB claims they will be the “honest broker” in the middle, then how do they assess the price of technology and are there processes and procedures in place with real-world cases?

Prof. Lohani responded by stating that one of the reasons for this platform is exactly that those who developed the technology might be afraid to share for the first time. At present they are still making the procedures, but common sense –wise, ADB will be the “honest broker”. For those companies who are fearful of losing technology, there can be an assessment on a case-by-case basis if necessary. In undertaking this exercise the ADB has looked at current practices. For example there are legal companies who can do this for a patent sharing between companies. The model for ADB is framed along the same lines.

Dr. Lee recalled a paper submitted as a contribution to “Our Common Future”, and the focus at that time was on environment and development. The paper was reduced to a footnote of the final publication, but he wanted to emphasise the importance of the relationship between environment and development.

Prof. Hirono followed up on this notion by stating that when we talk about long term mitigation, key questions are raised. For example, in the long term what policies are necessary? And what capacity development would be necessary to support those policies? Each country has to come up with voluntary national targets, or ensure their low-carbon strategies fit within existing national policies. However, Prof. Hirono stated that achieving a low-carbon Asia-Pacific is not just about “carbon”; we need to address poverty. Employment must be expanded and poverty alleviated as they are core issues. We do need to realise a low-carbon society but also need to achieve green growth. Prof. Hirono recalled that Dr. Lee mentioned that each country must come up with its own targets for a low-carbon society, and he welcomed this. But countries must also address issues from a global perspective – and so measures to support a low-carbon society must also address the poverty and employment issues seriously in order to be a part of the global effort.

Professor Hirono’s final comments were again regarding education as he expressed concern about universities being stretched too thin as they try to fulfil many mandates, noting the importance of specialisation.

3 Panel Discussion

"ESTABLISHING AN ASIAN-STYLE COOPERATIVE SYSTEM TOWARDS A LOW-CARBON ASIA-PACIFIC 2020"

[Moderator] **Shuzo Nishioka**, Senior Research Advisor, IGES

Young-Woo Park, Regional Director, UNEP Regional Office for Asia and the Pacific (UNEP/ROAP)

Nay Htun, Professor, State University of New York, Stony Brook

Monthip Sriratana Tabucanon, Principal Inspector General, Ministry of Natural Resources and Environment, Thailand

Yasushi Fukuizumi, Deputy General Manager, Sustainable Energy & Environment Strategic Planning Department, Mitsubishi Heavy Industries, Ltd.

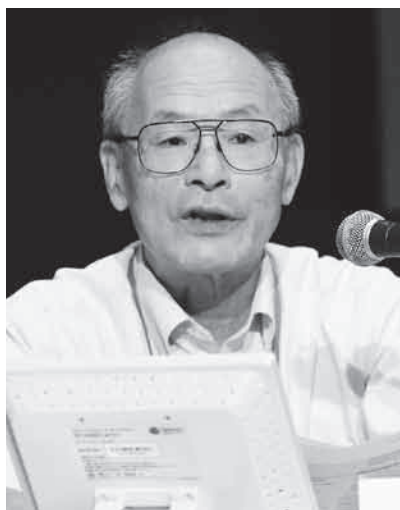
Session Outline

One of the achievements at COP15 in Copenhagen, Denmark was that developed countries agreed to provide new and additional financing to support Nationally Appropriate Mitigation Actions (NAMAs) taken by developing countries. The specifics of financing arrangements and the definition of NAMAs will be much debated in the lead up to COP16 in Cancun, Mexico. As regional promotion of mitigation, attention will be on South-South cooperation such as within the ASEAN framework, whereby countries promote NAMAs nationally and regionally through coordinating and monitoring their activities. Thus, conditions for cooperation towards low-carbon development are being developed. The focus of this panel was on what kind of community and systems are necessary for a low-carbon Asia-Pacific region, and the significance of communicating the message to the rest of the world about what Asia will do. The moderator noted that countries in the region are getting serious about climate change, and messages need to be communicated to the rest of the world from this session about what is being done, and what will be done in Asia.

Key Messages

- **Energy efficiency and conservation are the low hanging fruits along the transition pathways to a low-carbon economy — and these will play an extremely important role;**
- **Limited resources in the public sector mean that more should be done to bring in the private sector. In relation to this, the importance of technology transfer is crucial;**
- **Carbon capture/sequestration is important but due to high cost involved will remain relatively small, while low-carbon energy will be the mega-opportunity of the 21st century;**
- **Efforts of developing countries are indispensable to achieving the target of stabilising CO₂ concentration at the atmosphere at 450 ppm;**
- **Core energy infrastructures are areas where the government must take the lead, in particular to avoid the impacts of fluctuating oil prices. But also we need to work harder on the energy demand side;**
- **Dependencies and relationships exist and must be cared for, in particular domestically between urban and rural economies; regionally between neighbouring economies; and between developed and developing economies.**

Dr. Shuzo Nishioka Senior Research Advisor, IGES



Dr. Nishioka opened the session by introducing the participants and stating that for long term objectives to be met more specific terms about what we should do to reduce carbon in the Asia-Pacific region will be necessary. To achieve the objectives of a low-carbon Asia-Pacific all countries should participate in carbon reduction, and all countries should pursue Nationally Appropriate Mitigation Actions (NAMAs). In addition, developed countries should provide support to developing countries – a topic which Dr. Nishioka felt requires much more focus and discussion. As such, he explained that the discussions for this session should contribute to the broader dialogue on developing a low-carbon region and clarifying what steps countries should take and which measures countries should focus. The purpose of the panel was to specifically discuss about what kind of community or system has been made, or should be made, and more specifically, what industries and stakeholders are important. Dr. Nishioka remind-

ed the audience that IGES is conducting research on these areas and the importance of communicating the messages about what Asia will do from the forum to the rest of the world.

Implication of CoP16 to Asian Countries

Dr. Young-Woo Park

Regional Director, UNEP Regional Office for Asia and the Pacific (UNEP/ROAP)

Dr. Park spoke on the implications of COP 16 for the Asia-Pacific. He stated that securing commitments from emerging economies still remains a challenge. Effectiveness of energy policy to reduce emission of greenhouse gas is less than clear because emission reduction will depend on a host of factors outside the policy domain. For the Least-Developed Countries and Small Island Developing States, their focus is on adaptation as their contribution to emissions is so small. However overall, for mitigation and adaptation, he stated that technology transfer is very important. But pathways for effective engagement of business sectors are still not clear; regardless of this lack of clarity he expressed that it is time for public-private partnership to reduce greenhouse gas emissions and limit climate change impacts. As there are ever fewer resources available from the public sector, he stressed that we need to consider how we can bring in the private sector – in particular to the aforementioned LDCs and SIDS. At COP 16 a key issue was mitigation, but also technology transfer and capacity building as all are related. As such, he stated that the question is how can we provide the necessary financing/financial resources, the technology transfer, and the capacity building for mitigation



and adaptation. At Copenhagen it was agreed to work on financing, but that certainly may not be enough. In this regard G20 countries have a very important role to play, as they cover 80% of the world population and 90% of GDP – so their participation and action sends a powerful signal. Dr. Park shared research findings from UNEP, stating that in collaboration with external partners they have found that if all G20 countries invest 1% of GDP then we can transform a global society to be less carbon-dependent. China has invested 3% of GDP, Republic of Korea, Sweden, Australia, have respectively invested more than 1%. The US however, has invested less than 1% of its GDP. What we as a global society should do is promote good governance, promote financing, and provide trade incentives to reduce emissions and support adaptation. A major question though is how to bring in the private sector.

Low-Carbon Energy Transformational Pathways

Professor Nay Htun State University of New York, Stony Brook

Prof. Htun began his speech by stating that the three previous keynote speakers laid an excellent platform for this discussion. He explained that his presentation was to focus on three key areas – creating green jobs, reviving economies and green growth (in particular energy) as these are the overarching priority concerns of the general public in the US and G20 countries. Sustainable development and growth are extremely important he said, as without them we cannot have jobs and we cannot have sustainable energy to support the economy. The transition pathways to a low-carbon economy can be taken by pursuing the low hanging fruits such as energy efficiency and conservation as these will play an extremely important role. Carbon capture and sequestration of course is also important but due to expense will remain relatively small he explained. Referencing a recent Pew report he quoted that “a new worldwide industry is dawning” in the form of a global clean energy economy. But, he questioned, who is winning the green energy race? In terms of



investment, he displayed a chart showing China in first place with almost double the investment of the second place US. Prof. Htun strongly emphasised the importance of, and synergies between, green investment, green jobs, energy efficiency, and improving quality of life and protecting the environment. For example, while the world population and energy demand continue to increase, 1-2 billion people still do not have electricity. In order to pursue poverty reduction we will also have to address the large increase in demand for energy, and the necessary capacity and financing necessary to address this challenge.

Finally, Prof. Htun shared nine points for low-carbon energy transformation pathways as a framework for cooperation. These were (1) Technology, (2) Financing, (3) Economics, (4) Partnerships, (5) Governance, (6) Normative means, (7) Capacity building, (8) Social and societal determinants, and (9) Policy.

In conclusion, Prof. Htun gave his final remarks, stating that carbon is at the centre of development and drives many negative factors, and that sustainable development means moving away from carbon based energy. He reiterated that low-carbon energy will be the mega opportunity of the 21st century.

SUSTAINABLE AND LOW-CARBON DEVELOPMENT INNOVATIVE PATHWAY FOR SOUTH-SOUTH COOPERATION

Dr. Monthip Sriratana Tabucanon

Principal Inspector General, Ministry of Natural Resources and Environment, Thailand

Dr. Tabucanon gave a presentation focusing on the challenges and opportunities for developing countries in pursuing sustainable and low-carbon development. She began her presentation by describing the problems facing the region from climate change. She stated that the challenges of climate change have intensified in complexity as GHGs emissions are at the top end of the IPCC projection range, and rates of growth of emissions are accelerating. In other words, climate change is advancing and its effects are increasingly clear, while the impacts of climate change will damage growth and living standards far beyond the current economic crisis. It is likely in the near future that these effects will intensify in complexity. To reduce poverty, developing countries need to speed up economic development; but this is most likely to drive up energy consumption. Meanwhile, the impacts of climate change are being felt first and foremost by the poor. One solution often mentioned to help developing countries is technology transfer, but as Dr. Tabucanon explained, technologies to reduce carbon dioxide are available but are not adequately applied, for reasons that have little to do with climate change. This, she stated, despite the fact that it is clear that efforts of developing countries are indispensable to achieving the target of stabilising CO₂ concentration at the atmosphere at 450 ppm. Cooperation between developed and developing countries therefore is a must, and so the question is how to design a mechanism for such cooperation so that there are adequate internal incentives for compliance and also sufficient external incentives for participation. In regards to the Clean Development Mechanism, Dr. Tabucanon stated that the project-based approach of CDM has not helped the emerging economies to achieve the national energy saving and emission reduction targets while realising their sustainable development agenda. She then suggested that a new participatory mechanism is required that must improve the level and scale of coverage and operation, respond better to national development strategies, and connect to mainstream global governance. Dr. Tabucanon concluded her presentation by outlining a new climate change mitigation regime- an Inter-Country Joint Mitigation Plan (ICP) with the following characteristics:



ologies to reduce carbon dioxide are available but are not adequately applied, for reasons that have little to do with climate change. This, she stated, despite the fact that it is clear that efforts of developing countries are indispensable to achieving the target of stabilising CO₂ concentration at the atmosphere at 450 ppm. Cooperation between developed and developing countries therefore is a must, and so the question is how to design a mechanism for such cooperation so that there are adequate internal incentives for compliance and also sufficient external incentives for participation. In regards to the Clean Development Mechanism, Dr. Tabucanon stated that the project-based approach of CDM has not helped the emerging economies to achieve the national energy saving and emission reduction targets while realising their sustainable development agenda. She then suggested that a new participatory mechanism is required that must improve the level and scale of coverage and operation, respond better to national development strategies, and connect to mainstream global governance. Dr. Tabucanon concluded her presentation by outlining a new climate change mitigation regime- an Inter-Country Joint Mitigation Plan (ICP) with the following characteristics:

- 1) national, voluntary, intensity-based emission reduction targets are adopted by developing countries
- 2) emission reductions, technology transfer and financial flows built into the ICP are subject to international standards of monitoring, reporting and verification (MRV)
- 3) an international fund is established to finance the ICP. (The Montreal Protocol on the ozone layer is a good model)

How we construct an Asia-Pacific Low-Carbon Community towards 2020

Mr. Yasushi Fukuizumi

Deputy General Manager, Sustainable Energy & Environment Strategic Planning Department, Mitsubishi Heavy Industries, Ltd.

Mr. Fukuizumi began his presentation by explaining about his company, Mitsubishi Heavy Industries. Around 60-70% of his company's business is in manufacturing equipment, and so they are very dependent on the environment. He presented four main points which framed his presentation. First, it is necessary to establish a low-carbon economy in the Asia-Pacific region, and to develop it together with economic growth. In this regard, his second point was that "low carbon" can be a part of energy security policy. For his third point however, he cautioned that it will take time though to change the energy structure - it could take ten years to make the necessary preparations for such a shift - and we must keep this long-term time frame in mind. And finally for his fourth point he stated that there must be a linkage between mature cities and rural areas. As the population increases, as has happened in Japan, there must be a linkage or partnership between the growing urban areas and the remaining rural populations. Similarly he stated that linkages and partnerships should be made between developed and emerging economies.



In terms of GDP and primary energy consumption, Mr. Fukuizumi discussed the various trends that countries in the region have gone through as their per capita GDP has increased relative to energy consumption. He noted that it seems China is copying the Japanese experience. In the recent past the economy was growing, but declined because of the oil shocks. Therefore, he said, we have to take measure to avoid negative impacts from oil shocks - such as diversifying our primary energy sources. Currently Japan is among the top oil consumers with petroleum complexes developed along the Japanese coast. However, he would like to see a transfer to an electricity complex, especially by making use of subsidies and other assistance from government. When it comes to core energy infrastructure, the government must take the lead. That being said, he reiterated his point about each stakeholder group understanding the long-term commitment and perspectives necessary, as building even one nuclear facility can take 10 years. As such, he stated that we need to work harder on the energy demand side, and prepare for reforms on the supply side. In Asia Mitsubishi is working on this on a step-by-step basis. In Japan they are developing relationships between city and rural areas because Tokyo and major cities are dependent on energy supplied by rural areas. As such it is necessary to try and renew investment in urban areas to rural areas. In reality, the relationship between cities and rural regions was very good. They have used revenue from bullet trains to develop rail/transport sector in rural areas. So it is possible to establish a bilateral relationship he said. This relationship can include technology transfer because as we go forward we still have to coexist with each other - the urban and the rural, and developed and developing countries. The major countries in the region can share the division of responsibility and costs within Asia to build a low-carbon Asia together. He concluded by saying that it is difficult to coordinate after a project starts, so we should start relationships well in advance and pursue a division of responsibility and cost sharing.

Special remarks from Dr. Zhou Xin Deputy Director, Economy and Environment Group, IGES.

Dr. Xin was requested to offer remarks on China's responses towards climate change. China has experienced remarkable economic development, but this growth has come at a huge cost to the environment. The World Bank estimated that environmental damages are costing China in terms of GDP; additionally, since 2006 China has been the world's largest CO₂ emitter. As such, Dr. Xin explained that China has realized that they are harming their own growth, and are changing their approach to include development of an energy conservation society and a transition to low-carbon development. In so doing they will address both challenges and opportunities for China to cooperate with other countries in achieving domestic goals and voluntary action towards climate change. Initially, like the US Clean Energy and Security Act, these measures could have adverse impact on Chinese exports. But they could also open up markets for investment and business for low-carbon technology. Dr. Xin said that China cannot achieve its energy intensity targets which were mandatory in its own 5-year plan, so any plans for reducing emissions will be challenging. In the context of both challenges and opportunities, bilateral cooperation between China and Northern countries is needed; in particular Japan and China must achieve their goals at low-cost. In conclusion she explained that at present there are several mechanisms for cooperation such as the CDM, emissions trading systems, and investment in Chinese energy improvement sectors through the Clean Development Initiative.



Question and Answer Period

The first comment from the floor was regarding the context of mountains and climate change, which it was noted was mentioned in only one presentation. The commenter felt that we have failed until now to seriously focus on mountains, in particular the Hindu-Kush. As such he suggested that we deserve a mountain-specific approach. The commenter informed the room that a "mountain alliance" has been declared by the Prime Minister of Nepal, with the first conference to be held in September 2010 in Nepal. He concluded his comments by stating that mountains should have a special focus in climate change, as the impacts are quite evident in mountains and therein, downstream.

Next Prof. Asuka from IGES offered his insights. About community, he said for quite some time we have been talking about what to do with a community, and we all have an image in mind, but we have not made concrete steps. We have been discussing it for about twenty years in Japan, but as we think about it the world has moved on. In Asia-Pacific there is much research and movements are taking place, leaving Japan behind. A while ago Japan was in the lead, but now without working with others Japan must feel that it is being left behind. And although the Copenhagen accord may not be sufficient, it is a good place to start for cooperation.

Next Dr. Mizuno from IGES offered remarks on Dr. Tabucanon's comments regarding the CDM having problems. He stated that his team have been focusing on the CDM, and there are clear problems involved, so even if a new system is designed, we first need to understand and learn lessons from the CDM before we can develop a new mechanism. He explained that if we try to be as accurate as possible, it will be time-consuming. So the question remains as to where to draw the line between accuracy and timeliness.

Prof. Hirono offered two points as comments related to technology transfer. He felt that the importance of technology transfer cannot be over-emphasised. With multinational companies, in particular in Asia, partnerships must be built with the developing countries themselves, and technology related data and capacity must be produced. As such, partnerships among institutions and coordination is needed to increase overall impact, or else, the technology which is needed cannot be identified. Japan has been working since the Meiji restoration to import technology. So Japan has a long history of identifying and importing technology. His second point is that he welcomes the CDM, but various organisations are promoting financing opportunities. He feels that it is very good to come up with new initiatives, but partnership and coordination between these innovative institutions is needed to increase the overall impact.

The moderator Prof. Nishioka added that if we look at only what is in front of us we tend to lose the long-term perspective. A general design must be made somewhere either with good leadership or even voluntarily.

Dr. Park offered a response to the mountain countries issue. In this regard he identified two issues - water and biodiversity. He stated that we should focus more on these areas, but financing issues are a problem. Despite their strong efforts these countries are not generally attracted to the market. So he suggested using less ODA and letting the countries mobilise their resources to the market with less contributions from the government. They should discover how to encourage private sector involvement, especially through public-private-partnership. He suggested they secure internal investment and secure intellectual property.

In addition, capacity building related to technology development is important for sustainability. A lot of work has been done, but transformative changes have not been made. The example he gave was Vanuatu in the South Pacific which has a population of about 50,000. The Pacific Island countries have received the most amount of aid per capita, but no transformative changes have been made. So when issues come up such as multilateral aid etc., he said that limitations exist due to internal problems, but we also have to ask ourselves if we have done the proper work. In conclusion he asked how can we make transformative changes in countries with millions of people, and we have to ask ourselves if what we're doing is going to lead to transformative changes.

Prof. Htun commented that capacity development is at the heart and centre of these discussions. In all the presentations he witnessed, he did not recall seeing many references from sources in the Asia-Pacific region. Clearly, the Asia-Pacific plays an important role, but more knowledge must be generated in the research through education and training. He also added that capacity development, research, training etc. must be motivated towards low-carbon society. Currently he feels that we are still using materials and a curriculum which are relevant to the problems and challenges of yesterday. Not enough programmes are about the problems of today, and even fewer are focusing on the challenges of tomorrow, which are already here.

Dr. Monthip offered comments on the Chinese case based on her work with the Chinese government and other international organisations. She said that all developing countries should come up with own master plan towards low-carbon economies. Through the World Bank and Japan they are developing procedures to help developing countries. But each country has different goals and ways, so we should follow what Prof. Hirono said about harmonising ways. To do so we should mainstream development plans in national policies, which can help pick up soft loans. Currently there are so many procedures and commitments, but this kind of cooperation needs to be looked at in the international community. Her second comment was on the CDM, stating that there are still some weak points. The ASEAN countries are doing their best to look closely at CDM and translate it into action, but there are limited financial resources, so good cooperation is necessary - such as the ICP programme to translate action plans into real action. In this respect the policies are already established, she concluded.

Mr. Fukuizumi gave his comments from a manufacturing perspective. He felt that saying "technology transfer is important" and inferring that it is not happening is misleading. Technology has been transferred, but the difference is the length of experience in using that technology. Just transferring technology is different from having the infrastructure and designs to make use of the technology. He continued that in regards to the CDM as a part of a national strategy we need to be aware of violation of free trade when discussing CDM. Finally, large projects should not be done by one country, as shown in his presentation. The scope of necessary components is very wide, so in the Asia-Pacific each country must be willing to share the division of labour and risk. He concluded that, as an approach, this form of cooperation is very necessary. One country can provide leadership, but countries must be willing to share. Problems can remain hidden so there must be a broader point of view for moving forward.

Prof. Nishioka concluded by stating that businesses need a market, and the prospect for making a profit. IGES needs to do more work to support these discussion points.

4 White Paper III Launch: Keynote Discussion

Professor Hamanaka, Chair of the IGES board of directors, gave opening remarks for this plenary session. He began by saying that we have only one earth; yet if current consumption trends continued, we may require equivalent resources from 4-5 more planet earths. It is impossible for current consumption patterns to continue, especially if they are adopted by emerging economies. However, Prof. Hamanaka offered a positive message in that we can learn lessons from history and make a pathway forward. In many countries we can find innovative policies being implemented from which we can learn many lessons. In the third IGES White Paper we recommend government intervention in consumption and production in order to make available services and products which help the environment and make consumption patterns sustainable, while addressing the intransient poverty in the region. These key messages, and much more, can be found in the White Paper III, available online from the IGES homepage.

MOVING AWAY FROM THE MASS-PRODUCTION AND MASS-CONSUMPTION ECONOMY: AN ALTERNATIVE DEVELOPMENT MODEL IN ASIA?

[Moderator] **Hideyuki Mori**, President, IGES

Saburo Kato, Chairperson, Japan Association of Environment and Society for the 21st Century (JAES21)

Peter King, Representative, IGES Bangkok Office/Senior Policy Advisor

Session Outline

The purpose of this session was to discuss the core issues of the third IGES White Paper which was officially launched at this event and is entitled: Sustainable Consumption and Production in the Asia-Pacific Region: Effective responses in a resource constrained world. The main topic of discussion was economic growth, with countries such as China and India the growth centres of the world. This type of growth in Asia has been accompanied by a tremendous increase in the use of natural resources including fossil fuels, and a shifting of values and consumption patterns. As natural capital is an essential basis for sustained economic growth, it is obvious that continued economic growth modelled on the old Western style development, i.e. mass-production and mass-consumption, cannot continue unimpeded indefinitely. Alternative development models should be considered as essential for sustainable Asian economies. These issues formed the basis for the two presenters as they exchanged insights on the implications to the economy, society, and environment of the past and potential growth models in the region.

Key Messages

- **Growth in the Asia-Pacific region continues. This is great for poverty reduction and the quality of life for its citizens. However, this progress can incur a great cost if the new-found wealth of the emerging middle class is expended on the same patterns of consumption as in developed countries;**
- **Consumers, however well-intentioned, have little control over what they consume if environmentally sound choices are not available. The world cannot consume its way out of growing resource limitations, but can only stave off the most damaging effects by switching to “green alternatives”. More fundamental changes must take place;**
- **Social and ethical constraints on consumption and production are weakening; however the fundamental wisdom and philosophy of a culture can inform contemporary SCP discourse. These already exist in Asian cultures and should be drawn upon;**
- **Informing children of SCP values is firstly the responsibility of parents, but the education system and media have roles and responsibilities for their influence. Children should have the opportunity to spend time in nature to develop a personal understanding and relationship with their environment.**

Mr. Hideyuki Mori, president of IGES, gave a brief introduction of speakers, and introduced the White Paper III. Next, Dr. Peter King, who played a central role in drafting the White Paper, introduced some of the major messages.

IGES White Paper III

Dr. Peter King Representative, IGES Bangkok Office/Senior Policy Advisor

Dr. King began by stating the objectives of the third IGES White Paper, which are to bring together the results of IGES research from the Fourth Phase under a common theme to deliver key messages on a strategic topic, sustainable consumption and production (SCP). The White Paper III is meant to help revitalise and update knowledge on SCP in the Asia-Pacific region and establish a platform of up-to-date responses to current SCP issues, in particular by emphasising consumption, as a contribution to regional and international processes for SCP. He then described the parts of the White Paper III which included specific sections on stakeholder groups from the local to the international level, natural resource use and SCP, and transboundary and cross cutting issues. The overarching hypothesis that sustainable consumption will drive sustainable production is still not proven, and so Dr. King recommended that additional research is needed. Dr. King then presented some of the major findings and discussion points, such as the increasing global class of



middle-income consumers who are putting increasing pressure on environmental limits. Within this group there are well-intentioned consumers, but individually they have very little control over what they consume

if environmentally sound choices are not available. Some consumers and producers are to a certain extent following the Re-6 Philosophy, which Dr. King described as a good philosophy for life, but more needs to be done. Essentially, the findings in the White Paper III indicate that the world cannot consume its way out of growing resource limits, despite the best intentions of some stakeholders. In other words structural changes to the economy and infrastructures of provision must be made and expectations about a “good life” brought in line with environmental constraints. He then described the role of governments, who have a special role to play in making sure the enabling factors are in place so that producers can offer the necessary sustainable choices and consumers have incentives to take the least damaging product. Some of these enabling factors include consumer education, corporate information disclosure on environmental aspects of products, promoting local initiatives, mandating renewable energy provision, promoting food security and food safety, requiring energy conservation in the building and transport sectors, and empowering communities to undertake sustainable consumption practices.

In addition he highlighted the important role of media and the psychology of consumption in SCP, noting the finding that consumption is not a sure route to happiness. While these stakeholder groups have their roles and responsibilities in the social and political areas, the physical world is also a critical area to consider, as the future city form will be crucial for sustainable consumption.

Dr. King then presented some of the key findings, including that the White Paper III shows that the best results are achieved when all stakeholders work together to achieve a common vision of sustainable development for current and future generations. The White Paper III illustrates how multiple stakeholders have their individual roles to play but also they are encouraged to form partnerships, roundtables, agreements, harmonised standards and other forms of cooperation to achieve the common aspiration of SCP.

Lastly he emphasised that policies really do count, they have been shown to be effective, offering the example of eco labelling which allows people to know what they’re buying when they buy products, as they are not just buying the product but all the externalities that come along with it. Therefore, he concluded, governments have a critical role to play in balancing the asymmetry between producers and consumers.

Revitalising traditional wisdoms on sustainable consumption & production

Mr. Saburo Kato

Chairperson, Japan Association of Environment and Society for the 21st Century (JAES21)

Mr. Kato began his talk by referring to the IGES White Paper III, stating that he had read the summary segments and felt that it is a very good publication, but he would like to have seen more emphasis on wisdom and philosophy. Specifically, the fundamental wisdom and philosophy of a society should be emphasised more. Next he asked us to think about why topic of SCP is being discussed. In earlier generations he feels that consumption and production were never thought of as problems, in fact, consumption and production were increased to improve quality of life and the question of sustainability was not even considered. Now we are realising that space on earth is finite, and limitations and constraints on resources are now becoming serious issues for many of us on this planet. Mr. Kato stated that the earth is now facing a crisis, and 30-50 years from now this could become more serious based on our consumption and production patterns. For these reasons, we should question consumption and production today.

He explained that for the past 2-3 decades we have used the terms “mass production/consumption/disposal”. The market is not just a free market but a global free market, with global consequences. The result is that greed has come to be expected. As a child Mr. Kato was taught not to be greedy, and was told God would punish the greedy. So there were ethical and spiritual constraints on individual market behaviour based on social expectations and mores. But nowadays he feels that these have weakened, and greed has come to be a strong desire and expectation for growth. And while we may feel strongly about the environment, governments in the G20 and G8 for example still give top priority to growth. Essentially, we as a society are obsessed with growth. So while mass production/mass consumption is something which is unavoidable, sustainable growth seems cynical, as growth has nothing to do with sustainability. Mr. Kato then reflected on the meaning of the word “sustainability”, stating that in the past if we focused only on growth it was shameful, so perhaps we added the word “sustainability” to make it seem okay. In the 18th or 19th century Japan’s greed was constrained, with society, though the government, suppressing greed. Japanese culture had traditional teachings ingrained into the minds of Japanese people. He stated that they also had a closed-off but well educated society due to the shogunate, so wisdom was widespread in Japanese society. He explained that it was the type of wisdom that encouraged people to be self-sufficient and spiritual. The so-called sufficiency economy was enough for Japan back then. Mr. Kato explained that he was born in 1939 and at that time those values still persisted. It was not a difficult academic logic, and the teaching or commonly accepted wisdom was that the focus should be on the spirit and mind, but this ethos has been weakened and lost. If we are going to pursue SCP three things are necessary:



Essentially, we as a society are obsessed with growth. So while mass production/mass consumption is something which is unavoidable, sustainable growth seems cynical, as growth has nothing to do with sustainability. Mr. Kato then reflected on the meaning of the word “sustainability”, stating that in the past if we focused only on growth it was shameful, so perhaps we added the word “sustainability” to make it seem okay. In the 18th or 19th century Japan’s greed was constrained, with society, though the government, suppressing greed. Japanese culture had traditional teachings ingrained into the minds of Japanese people. He stated that they also had a closed-off but well educated society due to the shogunate, so wisdom was widespread in Japanese society. He explained that it was the type of wisdom that encouraged people to be self-sufficient and spiritual. The so-called sufficiency economy was enough for Japan back then. Mr. Kato explained that he was born in 1939 and at that time those values still persisted. It was not a difficult academic logic, and the teaching or commonly accepted wisdom was that the focus should be on the spirit and mind, but this ethos has been weakened and lost. If we are going to pursue SCP three things are necessary:

- 1) Technology – such as for LEDs for energy efficiency and recycling for waste management.
- 2) Institutional systems – educational/legal/eco-points to boost sales of environmentally friendly products. These two are not enough however, he stressed, we also need the third point.
- 3) Spiritual and philosophical wisdom we “used” to have needs to be revived. Unconsciously, perhaps, we have been able to utilise this wisdom, which may explain why we have preserved some environment. But it needs to be strengthened, especially in the various systems in society. Education is the key to the revival of the spiritual aspects of human kind.

In conclusion, he stated that as a basis we need a system of peaceful coexistence with nature and reliance on our ancestors for knowledge; otherwise will never be able to support any system for SCP. Wisdom fostering sustainable consumption and production can be further learned and utilised in other Asia-Pacific societies. This wisdom can already be found in every society in the region, and these need to be revitalised and internalised in the legal, educational and economic systems.

Question and Answer Period

The first question from the floor was directed to Dr. Peter King. The commenter asked how we can give children the values he described in his presentation and in the White Paper III. He noted especially the notion that materialism is not contributing to our long-term happiness.

Dr. King's response had four components. First, as the father of two daughters, imparting these values needs to be a primary responsibility of parents. So he suggested parents take on the responsibility to impart these values to their children. Second, the education system has a lot to contribute to this. His own children's school has a social science programme that deals with SCP and environmental issues. In this regard, changing the curriculum is important. Thirdly, the media has to take some of the responsibility for the sense of values they impart on children. Many countries are mandating the type of advertising allowed to be shown during children's programmes. Additionally, governments have a role to play in mandating that. Fourth, children should spend time in nature - for example, sitting in the quiet of the forest. The sense of oneness with nature will not come from a city street.

Mr. Kato added that to reach out to children his organisation is planning to publish a picture book for children which will express the most important essence of our traditional wisdom. It will be available in the next year or so.

The next comment from the floor was directed to Mr. Kato. The commenter fully agreed with the substance of Mr. Kato's presentation, but he wanted to raise two points regarding science and technology. LED lights for example, can reduce energy consumed. But at Christmas thousands and thousands of LEDs are used; so even though the technology itself is superb, the quantity of use is massive. The commenter suggested that, politically, a more reasonable system of understanding should be encouraged. With the concept of sustainable growth there seems to be some inconsistency, and the means and the goal should not be confused as the causal relationship may be skewed.

Mr. Kato responded that he feels the comments are true, "sustainable growth" as a term may be contradictory and trying to cover up the contradiction. The resources on earth are finite, so unlimited growth is impossible. But "growth" is deeply rooted in the hearts and minds of people. He stated that he would like to interpret growth not as material growth, but qualitative growth. Perhaps we could try to seek qualitative growth, including spiritual growth. So maybe make efforts to make growth happen by incorporating all these different values. He suggested that maybe in some way we can tackle the issues discussed in relation to sustainable consumption and production in a systematic manner to avoid global collapse. In conclusion he stated that perhaps the only way to find success is if we can provide relevant and meaningful information through environmental education.

Dr. King offered final comments to the session, stating that the important message of the White Paper III is that we cannot consume our way out of resource constraints, we can only buy time as we restructure the economy. As mentioned in the example of LED lights, the rebound effect takes place through mass usage leading to little to no net decrease in energy consumption. Eco-efficiency is not the answer, but it will help us buy time to make structural changes which will be difficult and painful, but necessary.

5 Closing Session

[Moderator] Hideyuki Mori, President, IGES

Charmine Koda, Journalist

Takejiro Sueyoshi, Special Advisor to UNEP Finance Initiative and the Principles for Responsible Investment in the Asia Pacific Region

Ryokichi Hirono, Professor Emeritus, Seikei University

Akio Morishima, Special Research Advisor, IGES

Summing up ISAP2010 with selected moderators

In this session President of IGES Mr. Hideyuki Mori summed up the second ISAP meeting with its 12 events and various discussions over the previous two days. In this closing session, he asked for selected moderators to share their impression of ISAP2010 and how to improve future ISAP events.

Mr. Mori posed two questions to the moderators. First, he asked the moderators to offer their impressions of ISAP2010; next Mr. Mori inquired as to how ISAP could be improved, especially to incorporate Asian perspectives.

Moderator impressions of ISAP2010

Ms. Charmine Koda thought that ISAP was very stimulating with discussions on infrastructure, green growth type investments and comments on how to respond to the gap between small and large scale actions. She felt the event made us think about what “growth” is from diverse perspectives such as green growth investment. One of the impressive words was “de-growth” which was presented by Maria Jolanta Welfens. Japanese politicians should take heed of this. Additionally, an interesting point was raised during the open sessions, which was that we should not forget the destruction of the environment that can occur when searching for solutions to greenhouse gas problems - such as mineral extraction for low-carbon energy.



Mr. Takejiro Sueyoshi stated that he is always thinking from a business perspective and that the objective of ISAP should not be just to share information, but also to discuss in order to make decisions and give instructions to take action. With the participation of such front line experts at ISAP, we should not just give warnings but clarify the reasons and discuss measures to point us in the right direction. He felt it is necessary to think about what is happening behind the consumption patterns and behind the business dealings. These issues are serious and urgent - it is now time for decision-making or even action, and this is what ISAP should be discussing.

Dr. Ryokichi Hirono stated that at ISAP it is possible to learn about the comprehensive challenges which the Asia-Pacific region is now facing. With many developing countries having different priorities from those such as China, India and Brazil, we should respect each country's conditions in terms of economy, social systems and culture. At the same time we should not place too much emphasis on the "diversity" of Asia; many places in the world are diverse while each country and society has their own history and culture which must be respected. The region is not particularly special compared to other areas, and we should keep this in mind especially when considering global agendas.



Prof. Akio Morishima pointed out that IGES should be applauded for this event. However, he questioned whether providing information is the only purpose. Based on the statement or presentations by speakers on the stage, we can continue to have more depth discussion, and distribute messages from ISAP. He felt that IGES should make use of every single presentation, discussion and comment even from the floor, for its future in-depth research. In other words, IGES should make use of ISAP in diverse ways. There should be more open-ended debates - maybe reducing the number of sessions and leaving more room for debate and getting more responses from the audience.

Moderator reflections on how to improve ISAP, especially to incorporate Asian perspectives

Ms. Koda thought that ISAP gave us a strong link within Asia, by sharing a sense of values and ethics, history and culture, which will contribute to solving sustainable development issues. She added that there needs to be a balance between informative presentation and discussions. In this sense, we need more time for discussion. She also praised the Third IGES White Paper and urged people to read it.

Mr. Sueyoshi commented that the "Asian perspective" is sometimes shown in the form of "diversity", which from another perspective means fragmented and divided. In the business world, the standard or rules have grown based on American and European society. In order to reflect Asian perspectives, we should not remain fragmented but need to come together, and ISAP can contribute to develop this. This can include political, educational and legal structures. In the business world, topics during ISAP such as carbon emissions, biodiversity, governance, etc. have already been incorporated into the criteria for investment decisions. It is important to analyse how the outputs of IGES research will link with real world business.

Dr. Hirono reminded us that IGES was created, with the basic goal of offering an Asian perspective on the environment. It is very important for IGES to deliver that message and propose the appropriate policy recommendations from Asia respecting each country's condition and status based on IGES's practical research results. At a conference like ISAP we can discuss what kind of governance would be appropriate for the region. Governance matters and he hopes that ISAP can develop an idea of governance for Asia - not simply providing information, but also contributing our own ideas and proposing alternative approaches. We can tell the world that there can be a variety of ways to pursue governance. In this way, ISAP can propose a basic form of governance which is not western-oriented or Asian-oriented but can be applied to diverse countries in Asia and the world.

Prof. Morishima emphasised that ISAP is a good opportunity to show the world, including US and Europe, how globalisation affects Asian countries, and is a forum to discuss what kind of international mechanism will be required. He hoped that IGES can play a role in that regard. ISAP should aim to communicate this information, and allow Westerners to participate in the debate about the kind of approach we should pursue and determine what message should be transmitted to the world. He proposed to discuss it at ISAP, and then send a message to the world. This is what ISAP should do in the future.

Closing Remarks

ISAP2010 finished with closing remarks from Professor Hironori Hamanaka, chair of the Board of Directors of IGES. He reflected on the various sessions of ISAP2010 where a variety of messages about the environment were shared across sectors and concrete discussions were conducted on each theme. With respect to the key messages in the Third White Paper and the related discussions, IGES will make proposals to the Ministerial Conference on Environment and Development in Asia and the Pacific (MCED) which will also be reflected at Rio+20 in 2012. The next IGES White Paper will take into consideration themes for Rio+20 and incorporate these concepts into the next ISAP in 2011.

▶ Special Lunch Session

[Moderator] Hideyuki Mori, President, IGES

Yasuhiko Hotta, Deputy Director, Sustainable Consumption and Production Group, IGES

Satoshi Kojima, Director, Economy and Environment Group, IGES

Kimihiko Hyakumura, Policy Researcher, Natural Resources Management Group, IGES



KEY MESSAGES FROM THE IGES WHITE PAPER III: CURRENT RESPONSES AND THE FUTURE DIRECTION OF SCP IN THE ASIA-PACIFIC REGION

Session Outline

In this session three of the contributing authors of the third IGES White Paper reflected on their key messages and allowed the audience to become familiar with the core concepts and challenges for SCP in the region through discussion between the authors and during the Q&A session. The authors described why they decided on their particular topics, how they developed their key messages, and gave insights on important issues facing the region based on their findings, as well as offering possible solutions to these challenges.

Key Messages

- Recycling and waste management are only limited ways to promote SCP, and will not bring solutions to the complexity of problems;
- Packaging can be looked at by analysing the nexus of influence in the value chain and directly working with the lead actors – the ones with the most influence, thereby bringing drastic changes toward SCP;
- Illegal logging can be reduced and SCP of wood products can be promoted by implementing a dynamic policy mix which includes voluntary fair-trade and consumer awareness campaigns as well as bringing in regulatory measures;
- Win-win relationships should be sought through regional/global cooperation, in order to achieve SCP from a wider perspective.



Session Summary

“Is the Customer Really King? : Stakeholder analysis for sustainable consumption and production using the example of the packaging value chain”

Dr. Yasuhiko Hotta

The whole recycling chain consumes energy, and cleaning of post-consumer packaging in the recycling process has significant environmental impacts such as water pollution. It is also difficult to recycle all packaging due to technological challenges etc. For all of these reasons, focusing only on recycling has limited potential for resolving the problems for attainment of SCP.

In order to bring drastic change towards SCP, analysing the nexus of influence in the value chain and directly approaching to the lead actor (the one with the most influence) are effective. Major actors in the value chain of recyclable packaging are municipalities, consumers, retailers and brand owners, but the most influential stakeholders among them are retailers and brand owners.

For strengthening SCP in recycle packaging, the following points are to be considered:

- Extended Producer Responsibility (add recycling costs to the price of products, continuous review of standard and policy by the Packaging Review Panel etc.),
- Choice Editing (establish standards on the minimum quality of sustainable products, create incentives for alternative products which are sustainable etc.) and
- Harmonise Packaging (use common packaging across brands of similar products and establish packaging standards in Asia).

To promote SCP, the consumer movement should shift toward ecological consumer protection, and grow out of classical consumer right protection. At the same time, it is also indispensable to approach the most influential stakeholders to take policy actions, and to continuously review the policies.

“Synergy of regulatory/voluntary actions and consumer awareness campaigns: Toward SCP of tropical forests”

Dr. Kimihiko Hyakumura

Tropical forest is being destroyed due to illegal logging in Asia-Pacific. Forest destruction causes an increase in CO₂ emissions as well as negative impacts on ecosystem services such as biodiversity, soil contamination and river basin management as well as affecting the lives of the local community. Some measures can be taken for SCP forest products, such as “introduction of regulatory/voluntary actions between consumer economies and producer economies”, “campaigns for consumer awareness of impacts induced by forest destruction and illegal logging” and “Payment for Ecological Services (PES) including REDD”. Five measures were introduced as regulatory/voluntary actions between consumer economies and producer economies:

- ‘Forest Certification’ approved by a third party, which is effective to ensure legal wood products as well as sustainability;

- 'Public Timber Procurement Policies' which is a measure promoting consumer countries to purchase legal wood products as public procurement;
- 'Voluntary Partnership Agreements' which supports the establishment of a timber legality assurance system in producer countries;
- 'EU due diligence regulation' which aims to exercise due diligence between operators placing timber or timber products and;
- 'Amended Lacey Act' in the U.S., which imposes penalty upon a person or enterprise that imports, processes or sells illegal wood products.

It was also pointed out that each measure has both merit and demerit, and there is a need to put in place stronger measures. In Japan there are insufficient measures regarding consumption of wood products derived from illegal logging, and consumers are not informed of these products. Consumer awareness on these matters needs to be raised in order to overcome these challenges. Even under these situations, some actions taken in Japan were introduced such as actions led by NGOs to promote fairwood and partnership with enterprises. The importance of fair trade with a reasonable pricing was also mentioned.

"United We Stand: Regional cooperation from a wider perspective of sustainable consumption and production"

Dr. Satoshi Kojima

To achieve SCP from a wider perspective, it is important to seek measures leading to a win-win relationship through regional/global cooperation. A case study was carried out analysing how Japan's actions as a low-carbon society impacted on ASEAN+3 countries. Results showed that a regional cap and trade among ASEAN+3 countries had further potential benefits for the whole region in both economy and environment than Japanese domestic actions alone. From the perspective of lifecycle, a case study analysed the global value chain by CO₂ emissions embodied in international trade. This showed that China imported CO₂ and Japan and the U.S. exported CO₂ as part of international trade. The result of the case study to achieve effective reduction of CO₂ emissions, showed that discussions were vital between producer and consumer countries regarding the new scheme assigning responsibility for CO₂ emissions. According to a case study on the impacts of investment in cross border power projects between China and Thailand, electricity transmission projects from China to Thailand will ensure economic growth (GDP incensement) and environment protection (CO₂ emission reduction) in both countries. In short, cross border infrastructure projects can bring overall benefit by improving both the economy and environment. In conclusion, four key messages were emphasised:

- It is important to seek measures leading to a win-win relationship through regional/global cooperation;
- With external diseconomies such as economic globalisation and the influence of transboundary environmental pollution, promoting SCP domestically may be inefficient;
- Production and consumption are paired in the SCP domain and product management should be considered in terms of lifecycle and;
- It is important to select the appropriate level, e.g., international level, regional level or bilateral level, to address specific SCP issues for effective implementation of cooperation.

Comments from the Moderator

The moderator, Mr. Mori, had comments on the requirements of international or regional cooperation for the promotion of sustainable consumption and production. Furthermore, he summarised the points of each presenter as follows. Dr. Hotta gave the results of the stakeholder analysis and pointed out the importance of approaching to the most influential stakeholder. Dr. Hyakumura mentioned the need for analysis of the influences in developing countries (as producers) caused by policies in developed countries (as consumers) on the international trade of illegal logging. He also pointed the potential role from other stakeholders than national body, such as fair trade. Dr. Kojima summarised the needs for cooperation among countries by considering the total profit.



Discussion session

Q&A 1

There was a question from the floor to Dr. Hotta on what the concrete sustainable system on containers and packaging was and how local municipalities should enact to this system. Dr. Hotta explained that this topic was chosen because, while the recycling systems of containers and packaging are a close part of our lives, it is not easy to find the solution. Furthermore, he also added that there needs to be a change in thinking as far as not only seeing the consumption of products from the point of lifecycles, but also looking at the total influence from the whole system, which supports the product.

Q&A 2

There was a concern from the floor about the potential interference with economic development in developing countries due to enforced suppression of logging because of global warming. Dr. Hyakumura explained about the REDD scheme, which developing countries are reviewing. He clarified that a negative economic impact is not necessarily the case by referring to the fact that REDD has the potential to expand funds to developing countries and market mechanism.

Q&A 3

A participant provided a comment on the lack of attention paid to national security by the presentation. Dr. Kojima acknowledged the comment and said that the perspective of national security should be taken into consideration to discuss regional cooperation with regard to energy infrastructure. At the same time, however, Dr. Kojima showed his expectation that the dissemination of the main message of this research result, which shows the potential win-win development by promoting regional cooperation, could give incentives to policy makers to further develop energy cooperation.

Q&A 4

A participant stated that the cost issue is often the most concerned for recycling, but the environmental benefits would be second concerns. It was also pointed out that there was a lack of viewpoints of technology, costs and efficiency in the presentation.

In response to this question, Dr. Hotta explained that the past policy research on 3R, which touched upon on technology issues, has identified that technology itself cannot merely solve issues, and thus it was necessary to put more focus on upstream policy in this IGES White paper. In addition, from the perspective of costs and efficiency, Dr. Hotta pointed out that the overall environmental impacts have been increased although the efficiency and production costs of each product have been improved. Dr. Hotta added that the issues we are now facing have been changed from impacts of an individual product to the impacts of the whole series of products and “Sustainable Consumption and Production” would be one of the concepts used to tackle these issues.

Q&A 5

A participant gave a question to Dr. Hyakumura about reviving domestic forestry.

Dr. Hyakumura introduced some of the current activities to revive domestic forestry, such as exporting domestic timber to China and the current discussions on a “plan for reviving domestic forestry and forests”. He also mentioned that he will follow-up the activities related to the promotion of domestic forestry.

Open Session

Thematic Sessions

ASIA-PACIFIC PERSPECTIVES ON THE FUTURE CLIMATE REGIME

[Moderator] Takejiro Sueyoshi, UNEP Finance Initiative and the Principles for Responsible Investment in the Asia Pacific Region

Fei Teng, Tsinghua University

Rizaldi Boer, Bogor University of Agriculture

Jusen Asuka, Climate Change Group, IGES

Yuji Mizuno, Market Mechanism Group, IGES

Session Outline

This session was aimed at examining the relevance of the Kyoto process and its importance to the Asia-Pacific. It also explored the different perceptions of Asian countries about the global climate change debate in light of the fact that COP15 did not make any headway. The presentations in this session included perceptions from Indonesia, Japan and China. The presentation by Dr. Yuji Mizuno outlined the scope for a new framework on climate change. Dr. Fei Teng presented on China's Mitigation Targets and explained why China has provided an energy intensity reduction target instead of emission reduction in its nationally appropriate mitigation actions. Dr. Rizaldi Boer's presentation focused on challenges to low-carbon development in Indonesia and Prof. Jusen Asuka, detailed the factors important to assessing comparability.



Key Messages

- COP15 was not a major success, but people across the world are slowly coming out of the pessimism about the international negotiation on climate change and “Copenhagen Accord”;
- Japan perceives that instead of a simple continuation of the Kyoto Protocol, an adoption of a new single comprehensive framework is effective for the global environment;
- GHG emissions in different parts of the world are expected to increase, especially from developing Asia;
- Cooperation between developed and developing countries in advance to the international agreement on future climate regime is crucial to achieve low carbon development in Asia;
- Various factors should be taken into consideration in assessing comparability of mitigation efforts in developing countries.

Summary

The four presentations made by the panelists detailed some of the key points relating to the relevance of future climate regime to Pacific Asian countries. The session started with a brief introduction about various presentations and their potential to address some of the key issues pertaining to the post-Copenhagen debates.

The presentation on *“What’s happening after Copenhagen?”* (Yuji Mizuno, Director, Market Mechanism Group, IGES) argued that the basic negotiation points of countries have not changed much even after the Copenhagen meetings and the subsequent important gatherings held in Bonn. Various countries have different perceptions about the global climate change debate. Japan sees the potential for adopting a new framework for the global environment. Developing countries are insisting on an extension of Kyoto Protocol and greater commitments from



the United States, which in turn demands higher commitments from developing countries. The argument for a newer framework on the global environment will be strengthened as there are still wider gaps expected in the debates of upcoming COPs. Moreover, under international negotiations, NAMAs and MRV are interpreted differently country by country, which raises concerns about the importance these countries are giving to mitigation efforts. It is important to understand that designing effective and workable institutional arrangements for NAMAs and MRV are crucial for the post-2012 international climate regime.



“China’s Mitigation Target: Opportunity and Challenge” (Fei Teng, Associate Professor, Tsinghua University, China) gave an overview about the energy and emissions trends in China, the significance of China’s energy commitments to emissions reduction and the potential challenges to emissions reduction in the country. Being a fast growing economy, China’s energy consumption and energy related emissions are expected to increase. In the long run, however, the energy intensity will significantly fall as the country has been adopting various measures for improving

energy efficiency. This is one of the major reasons why China has adopted intensity reduction targets in its communication to UNFCCC, as its nationally appropriate mitigation efforts. According to the speaker, intensity targets are less risky than adopting a quantified emissions reduction target in a developing country where it is difficult to foresee its emissions path. From 1990 to 2005 the GDP energy intensity fell by an annual rate of 4.1% and subsequently by 3.5% during the period 2005-2008. The current intensity reduction target kept by China is based on the historic estimation of intensity reduction. Despite these estimations, the intensity reduction targets will face various challenges in terms of coordination of energy intensity and other mitigation targets at national and provincial level.

The presentation entitled “*Toward LCDS and the Challenges: Indonesia Case*” (Rizaldi Boer, Bogor University of Agriculture, Indonesia) threw light on the challenges Indonesia faces in terms of achieving low-carbon development (LCD). One of the major challenges is to define the emission trend under the Business As Usual scenario. There is no agreed international guideline on defining the baseline and this cannot be achieved without good coordination and synergy among various sectors and between National and Local Governments. Bilateral cooperation should be enhanced in advance to the settlement of international negotiation to accelerate mitigation actions. The lack of clarity on the MRV process is also one of the challenges in the countries efforts towards LCD. This also necessitates greater cooperation and support from developed economies. The presentation also provides a schematic representation of the process to strengthen the MRV process within the country. As concluding points, the presentation highlighted that LULUCF sector and burning of peat as fuel will be two of the major sources of emissions in the country during the period up to 2020 and support for the implementation of LCD pilot programmes is crucial for learning good lessons.



The presentation on “*Factors relevant to assessing comparability*” (Jusen Asuka, Director, Climate Change Group, IGES) highlighted various concerns regarding the comparability of mitigation efforts in developing countries. While the developing Asian economies share common characteristics regarding the economic growth pattern, fuel usage and emission trends, there is a greater difficulty in assessing the comparability of their mitigation efforts. Factors include annual, cumulative and projected emissions of these countries; current, projected, and historic

emissions per capita; GDP and energy intensity; mitigation cost per capita; mitigation cost per GDP marginal abatement cost; energy profile; and characteristics of industry. The presentation also raised questions on how the burden of climate change can be effectively divided among the present and future generations. It also highlighted that only the post industrialisation emissions need to be considered as the responsibility of countries themselves.

Discussion

The presentations were followed by a brief question and answer session lead by the moderator.

**Q1. What is the role of cross border collaboration in NAMA efforts of developing countries in Asia?
What are the expected roles from Japan?**

A1. (Dr. Fei Teng) China is open to having cross border collaborations in achieving mitigation targets. Japan is a leader in the energy efficiency technologies in the Asian region and can significantly help China in achieving its mitigation targets. Japan also can be a good model for the Asian economies if the country can keep ambitious targets on emissions reduction and achieve them. There are various areas of importance which the two governments can discuss and explore further, such as possibility of linking market mechanism, harmonisation of standards for MRV, technology transfer in the low-carbon energy sector, and development of innovative financing mechanisms. There is a greater need for transparency between Japan and China in their respective mitigation efforts.

A2. (Dr. Rizaldi Boer) Mitigation efforts in Indonesia have been progressing remarkably. However, the country still needs assistance and support in its efforts towards emissions reduction and achieving the mitigation goals. The major areas where the country needs cooperation are: capacity building, promoting good practice in mitigation efforts, technology transfer and financial support.

Q2. For Japan, would the extension of Kyoto Protocol still be an option?

A. (Dr. Yuji Mizuno) Japan has been proposing that all the major countries need to be involved beyond 2012. However, it would be difficult for the US to adopt the Kyoto Protocol where all the difficulties arise. Its cooperation will largely depend on the conditions of each country and the level of support they require.

Moderator Comments

- Developing Asian countries have different national conditions and need different approaches to promote low-carbon development.
- International society has been changing rapidly and there seems to be a huge gap between the international framework and private sector activities.
- A cooperative framework to overcome such differences should be proposed to international society where there is value of diversity in Asia.



ACCOUNTING FOR CO-BENEFITS: TOWARDS STRONGER CLIMATE CHANGE, DEVELOPMENT, AND AIR POLLUTION POLICIES IN ASIA

[**Moderator**] **Charmine Koda**, Journalist

May Ajero, Clean Air Initiative for Asian Cities (CAI-Asia) Center

Cornie Huizenga, Partnership on Sustainable Low Carbon Transport Initiative (SLoCat)

Kotaro Kawamata, Asian Development Bank (ADB)

Katsunori Suzuki, Frontier Science Organization, Kanazawa University

Richard Mills, Global Atmospheric Pollution Forum

Eric Zusman, Climate Change Group, IGES

Session Outline

Discussions in this session were aimed at providing new perspectives on co-benefits with three objectives: to familiarise the audience with diverse perspectives on co-benefits; to understand how a fuller appreciation of co-benefits could strengthen policies in Asia on climate change, development, and air pollution; and to introduce plans for a “Co-benefits Partnership for Asia” network to improve communication among organisations working in this area, with IGES to serve as the Secretariat.



Key Messages

- A co-benefits approach can address multiple development challenges at once, ranging from local traffic congestion to regional air pollution to global climate change
- The sources, impacts, and abatement opportunities of climate change and air pollution are closely linked, offering significant potential for co-benefits
- Optimal co-benefits strategies can save money, costing up to 20% less than isolated climate change and pollution control policies
- Enhancing stakeholder communication, improving institutional coordination, and strengthening economic analyses are crucial to developing co-benefits strategies
- Mainstreaming co-benefits into sectoral plans and policies, climate change modalities (NAMA and MRV), and development bank appraisal methodologies will be increasingly important in Asia

Session Summary

In a framing presentation, Dr. Eric Zusman of IGES noted that the climate change, development, and air pollution communities hold varying perspectives on co-benefits. For the climate change community, co-benefits refer to the sustainable development benefits of climate actions (emissions trading schemes, carbon taxes). For the development community, co-benefits refer to the climate change benefits from key sectoral plans and policies (energy, transport, buildings, waste management policies). For the air pollution community, co-benefits refer to the joint air quality and climate benefits from air pollution policies/ air pollution agreements targeting short-term warming agents such as black carbon. Dr. Zusman underlined that a co-benefits approach can address multiple development challenges at once, including traffic congestion, regional air pollution and climate change. Air pollution and developmental perspectives can make co-benefits more policy relevant to the developing world. Greater communication between stakeholders from different communities can lead to the policy integration needed to strengthen climate, air, and development policies in Asia.



Mr. Richard Mills, Convener, Global Atmospheric Pollution Forum (GAPF), presented on the current state of debate on co-benefits and the development of integrated climate-air pollution strategies in Europe. Mr. Mills noted that integrated policy and strategies have been in place in the European Commission for many years supported by agreements such as Long Range Transport of Atmospheric Pollution (LRTAP) convention. The LRTAP is an international treaty organisation covering North America, Europe and the Russian Federation with nine binding protocols that regulate most pollutants. Mr. Mills highlighted three key developments related to the LRTAP convention: 1) a growing need to bring particulates within the Gothenberg Protocol on health grounds

2) a black carbon report that will highlight climate links and co-benefits; 3) and a hemispheric task force that must go wider than LRTAP. He also noted that there are three opportunities related to co-benefits: 1) enhanced co-operation at hemispheric scale and with other regional networks; 2) links between climate change processes and co-benefits; and 3) a revised Gothenberg Protocol and black carbon report could be models for integrated regional systems geared to co-benefits.

Mr. Cornie Huizenga introduced SloCaT, a multi-stakeholder partnership of over 50 organisations including international organisations, governments, development banks, NGOs, private sectors and academia that have agreed to work



together to promote sustainable, low-carbon transport in developing countries. He suggested that co-benefits are integral to the mission of SloCat because air quality improvements, times savings, and fuel savings are typically far greater than the climate change benefits from transport projects. Mr. Huizenga then argued that transport co-benefits need to be recognised, measured and rewarded. He further suggested that they can be mainstreamed by strengthening knowledge on co-benefits and integrating co-benefits into policy and future climate regime modalities such as Nationally Appropriate Mitigation Actions (NAMAs) and Measurable, Reportable and Verifiable (MRV).

Ms. May Ajero discussed how cities in Asia have tended to view co-benefits up to now and then further elaborated on the challenges to applying a co-benefit approach in Asian cities. After an overview of the results of an analysis of co-benefits in Asia, Ms. Ajero showed that a weak understanding of the co-benefit approach including science, and weak institutions and policies to address air pollution and greenhouse gases form a significant barrier to realising co-benefits. In light of these barriers, she presented several ways to advance a co-benefits approach, including: better measurement and assessment tools; promotion of accounting at the company level; and encouraging donors and multilateral development banks to focus not only on climate change but also on other benefits including air pollution prevention.



Mr. Kotaro Kawamata started his presentation by highlighting the communication gaps between developed and developing countries. He noted that developed countries concentrate more on climate change while developing countries are more interested in development, such as air pollution, traffic congestion, energy security and public health. The Asian Development Bank has recently started a Sustainable Transport Initiative (STI) that is designed to promote investment in low-carbon, safe and affordable transport systems. STI is intended to mitigate energy-related CO₂ as well as other co-benefits (economic development and energy security) from the transportation sector. The expectation for a Co-benefits Partnership is to provide a tool for quantifying several different kinds of benefits. Among the benefits, fuel costs are the easiest to calculate while health costs are the most difficult. Thus there is a need for improving quantitative tools to measure co-benefits in project evaluation.



Professor Katsunori Suzuki proposed the launching of Asian Co-benefit Partnership in November 2011. Prof. Suzuki suggested that a co-benefit approach has been receiving a growing amount of attention in Asia. In addition, several international organisations are working on a co-benefits approach in Asia and several co-benefits model projects are already underway. There are, however, few mechanisms for coordinating activities on co-benefits in Asia. Last year at ISAP colleagues from IGES, ADB, CAI-Asia, GAP Forum and UNEP proposed creating a co-benefit net-

work to fulfill this need. The proposal was followed by two meetings in October 2009 and March 2010. Based on discussions at those meetings, an Asian co-benefits partnership will be created as an informal and interactive platform to promote co-benefits policies and projects in Asia.

Discussion

The presentations were followed by a brief question and answer session lead by the moderator, Ms. Charmine Koda. Prof. Nay Thun pointed to the importance of black carbon, particularly smaller fine particles that pose a threat to public health. He also suggested that the term co-benefits is misleading, since an integrated approach leads to multiple benefits, not co-benefits. Dr. Eric Zusman agreed with this assessment. He further highlighted that black carbon not only makes an impact on regional climate systems but also has an albedo effect masking reflective ground surfaces. Mr. Cornie Huizenga pointed that most Asian developing countries are still in the beginning phase of dealing with PM 10. A co-benefit approach would help them move forward to PM 2.5.



REDD+: PROGRESS, CHALLENGES AND WAYS FORWARD - FROM THE LOCAL TO THE GLOBAL

[Moderator] Zakri Abdul Hamid, Centre for Global Sustainability Studies, Universiti Sains Malaysia ; the Government of Malaysia

Amanda Bradley, Pact Cambodia

Lesley McCulloch, Eye on Aceh, Indonesia

Gewa Gamoga, Forest Policy Planning Directorate, Papua New Guinea

Henry Scheyvens, Natural Resources Group, IGES

Session Outline

The objective of this session was to improve the understanding of the progress of REDD+ and to extract lessons from national REDD+ preparations and demonstration activities. REDD+ is about the conservation and enhancement of carbon pools. Sometimes the “+” is used to mean other benefits such as biodiversity or social benefits, but at the international negotiations it is meant to be used principally for carbon stocks. An overview was given of the evolution of the concept of REDD+ through international negotiations beginning with the Kyoto protocol through the Copenhagen accord until the recent negotiations of the AGW-LCA.



Key Messages

- REDD+'s Performance-based finance can bring about positive changes for the forest sector;
- Leakage and non-permanence create uncertainties, but there are also reasons for caution related to potential threats to the rights and livelihoods of and indigenous and local communities;
- Cross-sectoral policy coordination must be in place when undertaking REDD+ ;
- Strategies need to be in place for REDD+ to become a reality. Monitoring, accounting and verification systems also need to be established;
- Consultations with indigenous and local communities must pay careful attention to the principles of “free prior informed consent”;
- Bureaucracy requirements must be reduced for REDD+ demonstration activities to bring down implementation costs, while consistent financing to start REDD+ projects is crucial.

* REDD+: Reducing Emissions from Deforestation and Forest Degradation and conservation of forest carbon stocks, sustainable management of forest, enhancement of forest carbon stocks

Session Summary

In this session, the moderator gave an introduction to REDD+ and the evolution of the negotiations on climate change. The guest speakers provided insights on the development of REDD+ at the national and the local levels in Papua New Guinea, Indonesia, and Cambodia.

Indonesia is a good example of how REDD has evolved through its readiness preparation proposal, as presented by Lesley McCulloch. But the country is also faced with many challenges, especially with a lack of intersectoral coordination (though it is working on improving this). It also needs to improve communications with sub-national/local



governments and improve the multi-stakeholder dialogue to strengthen the national strategy. Indonesia was the first country to develop a legislation for REDD, but now it is realizing that many of those regulations cannot be implemented due to gaps and incompatibilities with much of the existing legislation. Therefore the existing rules need to be revised.

Gewa Gamo of Papua New Guinea (PNG) discussed how the country is developing its REDD+ National strategy and is supportive of the Copenhagen Accord. PNG has established the Office of Climate Change and Development (OCCD) with a mandate to coordinate all sectors towards Climate Change Mitigation (REDD+), Adaptation and Low-carbon Growth. High priorities for the OCCD are to develop a Measurement, Reporting and Verification system (MRV), establish a Fund Distribution Mechanism as well as benefit sharing models that ensure benefits accrue equitably to resource

owners. The PNG Forest Authority (PNGFA) is responsible for managing PNG's forests and has taken innovative steps to address REDD+ including its own re-structuring, revising the National Forest Development Guidelines (incorporating REDD+), and developing the Forestry & Climate Change Framework for Action 2009 - 2015. PNG is also implementing REDD+ pilots in four regions of the country.

Political commitment is crucial for the success of REDD+. In Aceh the provincial government issued an indefinite moratorium on logging, it is redesigning the forest management framework in Aceh and it is evaluating all concessions (logging, mining, plantations etc.). Policy decision makers are also faced with several challenges including regulatory overlaps, weak law enforcement and lack of coordination between government agencies (local and national) (among other challenges). Another significant challenge facing the implementation of REDD+ in Aceh is that the process has been exclusive rather than inclusive of indigenous and local communities.



Regarding the REDD+ plus project in Cambodia (Oddar Meanchey), the project is expected to sell its first carbon credits this year, according to Amanda Bradley. It is a community forest project and pursues to actively include local communities (11 community forestry groups), including giving them the right to own carbon credits. PACT Cambodia works together with the Forestry Administration. The project has been certified by the Climate, Community and Biodiversity Alliance (CCBA) and it is undergoing a certification process under the Voluntary Carbon Standard (VCS). It is expected to generate approximately USD39 million over the lifetime of the project (30 years). The project is challenged by the difficulty of coordinating negotiations with many stakeholders and the need to improve community awareness.



The inventory work is hampered by landmines. Controlling the drivers of deforestation such as agriculture in CF areas and migrants-population growth in others is also a significant challenge to the project.

Lessons learned from the project include the fact that demonstration activities can provide critical on-the-ground experience crucial for the development of national strategies. Another significant lesson is that there is a need to define benefit-sharing as clearly as possible before revenues arrive.

MAINSTREAMING ADAPTATION: LINKING RESEARCH AND ACTIONS ON THE GROUND

[Moderator] Srinivasan Ancha, Asian Development Bank (ADB)

Sreeja Nair, The Energy and Resources Institute (TERI)

Khlok Vichet Ratha, Ministry of Environment, Cambodia

Kazuya Yasuhara, Ibaraki University

Eklabya Sharma, International Centre for Integrated Mountain Development (ICIMOD)

Mahesh Pradhan, UNEP Regional Office for Asia and the Pacific (UNEP/ROAP)

Daisuke Sano, Adaptation Team, Natural Resources Management Group, IGES

Prabhakar Sivapuram, Adaptation Team, Natural Resources Management Group, IGES

Md. Rabi, Uzzaman, Bangladesh Centre for Advanced Studies (BCAS)

Session Outline

The purpose of this session was to bring together members of the UNEP Asia-Pacific Adaptation Network and other key players in national level policy research and policy decisions to have discourse on the issue of how networking of service providers and clients can be effective in initiating pragmatic adaptation policy actions. After presenting the status of adaptation globally and within the Asia-Pacific region by the moderator, panellists presented adaptation needs in countries across the region, how those needs can be met by the nation, international cooperation, and the role of the Network.



Following the Q&A period with the audience, Dr. Ancha summarised the session: 1) more scientific and policy research is needed through the institutes represented in the panel, 2) more actions on the ground are needed, and 3) the Network has the potential to link gaps with opportunities.

Key Messages

- Climate change impacts and adaptation needs have been identified and documented, yet the adaptation policies are at a very nascent stage in the developing Asia-Pacific region, both in research and implementation domains;
- Developed countries have technological, institutional and policy innovation that could help developing countries plan and implement pro-active adaptation actions on the ground;
- Since many developed countries have not been able to fully understand the developmental and adaptation needs of the developing countries, South-South or South-South-North collaboration could be an alternative;
- Knowledge institutions such as IGES, ICIMOD, TERI of India, Bangladesh Centre for Advanced Studies (BCAS), and Ibaraki University, Japan are joining together in conducting policy relevant research for addressing questions on effective adaptation actions in the region;
- Adaptation networks such as UNEP Asia-Pacific Adaptation Network and the Adaptation Platform are playing a vital role in bridging the gap between scientific knowledge and implementation;
- Networks must make available location-specific knowledge products to non-governmental and governmental agencies at all levels for capacity building.

Session Summary

The open session on “Mainstreaming Adaptation: Linking Research and Actions on the Ground” was facilitated under three stages, which were 1) introduction, 2) panel discussion, and 3) question and answers. The session was moderated by Dr. Ancha Srinivasan of the Asian Development Bank.

After the introductory remarks made by Dr. S.V.R.K. Prabhakar of IGES, Dr. Srinivasan introduced the outline, objective and members of the session in addition to presenting the status of adaptation globally and within the Asia-Pacific region.



Six panellists presented adaptation needs on themes such as adaptation needs in their country, how those needs can be met by the nation, international cooperation, and the role of network. A short summary of each presentation is listed as follows in the order of presentation.



“Current state of the adaptation research in India” was presented by Ms. Sreeja Nair, TERI, with the focus on adaptation needs such as region specific requirements in India. She also highlighted the need for clear definitions, better models, and reliable standardised methodologies for monitoring and evaluating adaptation to reduce the uncertainties of adaptation policies.

“Current state of adaptation research in Cambodia” was presented by Ms. Khlok Vichet Ratha, Climate Change Department of the Ministry of Environment, Cambodia. She explained Cambodia’s state vulnerability - change. The nation is facing poverty, drought, and severe floods. Although Cambodia has already prepared the NAPA (National Adaptation Programme of Action) assessment programme, she emphasised that the nation still needs further assistance to strengthen capacity, raise awareness, and disseminate knowledge from international support including the Network.



“Current state of adaptation research in Japan and contribution to the region” was presented by Prof. Kazuya Yasuhara of Ibaraki University, Japan. He noted that many adaptation policies are already in place in Japan,

but they are carried out in a sectoral manner and their approaches vary from social to natural sciences-based. With experience of research on compound disaster vulnerability to climate change in Japanese coastal areas, he stated that Japan can apply adequate technologies to support developing countries in synergising both traditional and



advanced technologies for disaster management and the international networks such as UNEP Adaptation Network will be useful to disseminate such technologies.

Dr. Daisuke Sano of IGES presented *“How can IGES help in realising informed adaptation decision-making in the region?”* He emphasised that a comprehensive adaptation approach is needed. In this regards, he explained IGES research plan on identifying adaptation assessment indicators and identifying effective and integrated adaptation decision-making frameworks. He further explained that the research outputs will be shared with other stakeholders through networks such as UNEP Asia-Pacific Adaptation Network.



“Current state of adaptation research in Hindu Kush-Himalayas (HKH) and ongoing efforts by the Adaptation Platform” was presented by Dr. Eklabya Sharma, ICIMOD. He explained the complexity and dynamics of HKH region while highlighting the need for adaptation policies not only local/community based approaches but also on a trans-boundary/regional scale. He also presented the roles of ICIMOD in Adaptation Platform and other international partnerships.

Lastly, Mr. Mahesh Pradhan of UNEP/ROAP underlined the role of the UN in linking adaptation research and policy actions. After presenting the background of the UNEP Global Adaptation Network that consists of eight regional networks, he stressed the importance of downscaling of climate change impact projections to the local level and possible contribution of the Network in bridging the knowledge gaps. He also noted the challenges of adaptation such as capacity building, adaptation policy integration across sectors, financing at the national level as well as international cooperation (south-south, north-south, and south-north) and harmonisation of methodologies which may contribute to the successful UNFCCC/COP16 in Cancun, Mexico.



Discussion

Several questions and comments were raised by the audience including questions regarding flexible funding and strategies by the United Nations, research in coastal areas and urban planning, how to respond the adaptation policy gaps, effectiveness assessment in capacity building, and the need for horizontal and vertical approaches and identification of priority areas for adaptation. Each panellist responded to the questions and comments as follows; Ms. Nair answered that the Rockefeller foundation funded the urban coastal planning project for TERI; Ms. Ratah responded that Cambodia has a project on urban planning and coastal management for adaptation; Prof. Yasuhara explained that the network can provide standardised indices for effective adaptation; Dr. Sharma noted that regional networks have the potential to facilitate adaptation approaches under uncertainty; Mr. Pradhan agreed with the need for some flexibility in funding system; and Dr. Sano noted that research cannot fix the policy gaps in adaptation but can be addressed through consultation.

During this stage, the planned panellist Dr. Md Rabi Uzzaman of BCAS arrived and explained that Bangladesh is a country vulnerable to climate change with lack of livelihood security, health, water and food. He emphasised gaps in institution and knowledge. He further noted that Bangladesh needs low-cost adaptation technologies and capacity building with the support from international cooperation. Lastly, Dr. Srinivasan summarised the session with three main points: 1) more scientific and policy research is needed through the institutes represented in the panel, 2) more actions on the ground are needed, and 3) the Network has the potential to link gaps with opportunities.

TRANSITIONING TO SCP: OPPORTUNITIES FOR ASIAN PROSPERITY ON A FINITE PLANET

[Moderator] Anthony Chiu, Asia Pacific Round Table for Sustainable Consumption and Production

Maria Jolanta Welfens, Wuppertal Institute for Climate, Environment and Energy

Kohmei Halada, National Institute for Materials Science (NIMS)

Patrick Schroeder, China Association for NGO Cooperation (CANGO)

Satoshi Kojima, Economy and Environment Group, IGES

Magnus Bengtsson, Sustainable Consumption and Production Group, IGES

Session Outline

This session provided an opportunity for the sharing of diverse perspectives on sustainable consumption and production. The moderator began the discussion by speaking about demand-side SCP issues and the overemphasis on production-side solutions. The panelists shared their experiences and insights on core and emerging issues in this field. Education was greatly emphasised in this session as a tool to address these demand-side issues and change consumption patterns by influencing lifestyles and values. Narrow focus on individual consumption patterns may be insufficient; SCP needs to be discussed within the broader context of social capital and infrastructures of provision with consideration for relationships with the environment. For the movement towards SCP, the supply side needs to consider proper resource use so as to reduce external costs on one hand, and demand sides should reshape the current intrinsic consumption patterns through the social and cultural frameworks on the other hand.



Key Messages

- **More active discussion on consumption side for sustainability is required;**
- **Socio-cultural frameworks including education on sustainability and research on social science will play a major role in changing individual values and lifestyles;**
- **SCP needs to be discussed within the broader context of social capitals and structures which have been formulated under the interaction with environment;**
- **Resource efficiency needs to be improved so as to reverse the current trends of increasing resource use and demands;**
- **Regional cooperation is essential for promotion of SCP on a global scale and effective and efficient policy designs;**
- **A new economic model which decouples economic growth from resource throughput needs to be developed on the basis of a holistic approach;**
- **Leapfrogging is required for developing countries to bypass the outdated development model of industrialised countries and to realise SCP from the outset.**

Summary

The moderator, Prof. Anthony Chiu, began the session with a presentation on the current SCP debate, which mostly focuses on the production side (e.g. eco-design, green procurement) and does not sufficiently mention the consumption side, because the notion of sustainable consumption is still not well understood. For establishment of life cycle perspective and transition towards SCP, changes in values and lifestyles in addition to policy frameworks, market forces and technological innovation are required. In this context, education on sustainability and research on social science (e.g. psychology, philosophy) will increase their importance.



Dr. Maria Jolanta Welfens

The targets for a sustainable world by 2050 ambitiously aim at a drastic reduction of GHG emissions, resource and energy use, and our ecological footprint. Towards this target, resource efficiency needs to be improved so as to reverse the current trend of increasing resource extraction and CO₂ emissions which strongly correlate with resource use. It is also necessary to promote awareness raising of consumers, greening markets and making sustainable consumption easier for the purpose of fundamental change in existing frameworks for production and consumption. Overall, changing consumption patterns will be possible through education on sustainability.

Dr. Kohmei Halada

Materials required for eco-innovation (e.g. platinum, lithium) often demand higher energy input during extraction and processing, and involve a great amount of waste or unused materials from the mining process. Due to increasing resource demands, consumption of some materials will exceed the amount of reserve base and accumulated total material requirements (TMR) will reach to 2 trillion tons by 2050. For sustainable resource use, we need to reduce our materials consumption to 2 tons of resource-view weight per capita, implying a reduction by a factor of eight in the case of Japan. Alternative, efficient and circulating use of materials is required to achieve true eco-innovation and economic development for developing countries.



**Dr. Satoshi Kojima**

Current problematic global economic structures accelerate consumption inequality - over-consumption by the rich and under-consumption by the poor. For genuine achievement of SCP, we need simultaneous policies and actions to reduce mass-consumption in developed countries and to meet basic human needs in developing countries. Taking into account the transnational environmental problems including resource deficit and hazardous pollution, regional cooperation will be essential both for the purpose and the means, namely, promotion of SCP at the global scale and effective and efficient policy designs.

Dr. Magnus Bengtsson

Consumption consists of two aspects - consumption of resources and consumption of products and services. In terms of environmental sustainability, consumption of resources needs to fall within the carrying capacity of the Earth. Due to rapid economic development, however, the Asia-Pacific region leads the trend of an increase in resource use per capita and per unit GDP. For transition towards SCP, a new economic model which decouples economic growth from resource throughput needs to be developed. In doing so, a holistic approach targeting from upstream (e.g. resource efficiency) to downstream (e.g. recycling) and encompassing ecological, industrial and social system will be essential.

**Mr. Patrick Schroeder**

The concept of technological leapfrogging is mentioned as a way for developing countries to bypass the outdated development model of industrialised countries such as environmental Kuznets curve and to realize SCP patterns from the outset of economic development. Technological approaches need to be combined with the promotion of innovative low-impact lifestyles which would achieve poverty alleviation as well as eco-efficient lifestyles simultaneously. Examples include promotion of public transportation and bicycles instead of motor vehicles, encouragement of traditional healthier foods and discouragement of "fast-foods", and use of bamboo for construction as renewable materials.

Comments from panellists

Due to time constraints the moderator requested two of the panellists to reflect on the other presentations. For the movement towards SCP, supply sides need to consider proper resources use so as to reduce external costs for the movement towards SCP, on one hand, and demand sides should reshape the current intrinsic consumption patterns through the social and cultural frameworks on the other hand. Strategies for changes in consumption patterns differ between developed and developing countries; the former may need to consider the possibility of “degrowth”, and the latter shall require establishment of new lifestyles not imitating the “West”. However, a narrow focus on individual consumption patterns may be insufficient; SCP needs to be discussed within the broader context of social capita and structures which have been formulated through interaction with environment.

Discussion

The first commenter noted that as discussed earlier, a narrow focus on individual consumption and lifestyles may overlook the significant factors for SCP. Wider perspectives incorporating socio-cultural and ethical disciplines will be essential so as to consider social production and social consumption as a whole.

The second comment addressed global consumption inequality and how we may require different education between countries, namely, education on the negative impacts of wasteful consumption for developed countries and education on new lifestyle not replicating consumption-oriented societies for developing countries. However, education is not sufficient for converting the current trends of production and consumption into more sustainable forms under the current market mechanism. Rather, rule-making or changes in market rules through governmental intervention may play more important roles in rectifying the distortion of the global market mechanism.

The third commenter noted that it may be natural for developing countries to prioritise economic development and seek opportunities for production with low cost and abundant resources. However, GDP is not necessarily a useful indicator to demonstrate human welfare. Development of alternative benchmarks to measure the quality of life as well as impacts on environment will be required.

The final comment addressed sustainable consumption, noting that sustainable consumption in developed countries does not necessarily lead to sustainable production in developing countries, since goods produced in Asia tend to be transported towards other developing countries, such as from China to Turkey and East Europe. In this context, SCP analysis requires broader geographical viewpoints.

COPING STRATEGIES FOR GROUNDWATER UNDER THREAT

[Moderator] Akio Morishima, IGES

Chayawee Wangcharoenrung, Pollution Control Department, Thailand

Jianqing Yang, Center for Groundwater Monitoring, Ministry of Water Resources, China

Tomochika Tokunaga, University of Tokyo ; the Japanese Association of Groundwater Hydrology

Devesh Sharma, TERI University

Yatsuka Kataoka, Freshwater Sub-Group, IGES

Session Outline

Groundwater has been deteriorating in both quality and quantity in Asia due to rapid economic development and population growth. The moderator explained the importance of groundwater for sustainable development in Asia and also explained the background of the groundwater research of IGES; while the panel session aimed to facilitate the understandings on the state of groundwater problems in Asian countries and measures taken to face the issues at hand. However, groundwater issues are not well recognised by many



people in the region partly because of insufficient data and information available. Because climate change will affect both surface and ground waters, we need to see water resources in a package as part of a whole integrated system with solutions found through better policy and management techniques; education and advocacy; and public participation.

Key Messages

- **Groundwater, a predominant reservoir of freshwater, is under increasing threat of degradation by rapid expansion of exploitation and pollution accelerated by urbanisation, industrial development, and agricultural and mining activities, which cause direct impacts on human health and food security;**
- **Understanding of all stakeholders on aquifer systems, groundwater use status and problems is very important to promote sustainable management of the resource;**
- **Sustainable groundwater management should incorporate an integrated approach in which wider aspects of social, economic and environmental concerns are considered together. Integration of surface water and groundwater management is also very important for sustainable use of water resources;**
- **Solutions of groundwater problems should reflect local conditions, but principles or hints for management can be found in the region. It is important to share lessons of groundwater management in different areas of the region to find better solutions;**
- **Enhancement of awareness and strong political will are very much in need to deal with the increasing threats to groundwater resource especially under the growing concerns of climate change.**

Session Summary

At the beginning of the session, Prof. Akio Morishima, the moderator, highlighted the importance of groundwater for sustainable development in Asia and also explained the background of the groundwater research of IGES.



Ms. Yatsuka Kataoka, Freshwater Sub-group IGES, explained the importance of groundwater in an Asian context. Groundwater has been developed in many areas of the region, especially at the beginning of development because of its easy access, lower cost of use and stable temperature. On the other hand, rapid expansion of groundwater extraction has caused depletion of the resource and land subsidence. Arsenic and fluoride pollution, salinisation, and contamination by hazardous substances have also become critical. In addition to the existing problems, impacts of climate change may increase pressure on groundwater in the future. She stressed the importance of groundwater management for sustainable development in the region and also of lesson sharing of good groundwater management practices among relevant stakeholders. In conclusion, she drew attention to the role of IGES as the regional knowledge hub for groundwater management of the Asia-Pacific Water Forum in knowledge creation and accumulation for better groundwater management.

Mr. Chayawee Wagcharoenrung, Pollution Control Department (PCD) of Thailand, discussed groundwater contamination in *Map Ta Phut* industrial complex. In 2004, local people started to complain about the groundwater quality and some NGOs sampled and tested the groundwater quality where excess amounts of heavy metals were found. According to monitoring by PCD, the percentage of cases exceeding the standard of heavy metals in shallow and deep wells was about 50% in 2008-2009. Arsenic, manganese and hydrocarbons are the major substances found by PCD monitors. PCD marked the groundwater contaminated wells by green, yellow and red symbols which represent drinkable groundwater, usable groundwater except for drinking purposes, and unusable groundwater for all purposes, respectively. He raised some challenges faced by the PCD to mitigate the pollution problems, including no direct authority over industrial pollution, no standards for monitoring wells, difficulty in identification of the contaminated sites and no experience of large scale remediation.



Dr. Jianqing Yang, Center for Groundwater Monitoring, Ministry of Water Resources of China, presented the strict groundwater management system in the country. With a brief background summary on groundwater resources, Dr. Yang highlighted critical groundwater issues in China such as continuously decreasing regional groundwater level, and pollution from agricultural activities. To cope with groundwater problems, the Ministry of Water Resources introduced “the most strict groundwater management system” in 2009.



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This system outlines the key indices for water consumption bottom line regarding volume, efficiency and pollution in different regions. The regions are divided into exploitation, reservation and protection zones based on groundwater availability. A cap for groundwater pumping is decided according to the areas, and extraction wells are closed down in the area where groundwater is overexploited. The performance of local governments is evaluated annually as to whether the bottom lines are broken or not. Through the system, the government of China expects the restoration of groundwater levels, mitigation of pollution, improvement of water use efficiency, and rational allocation of surface water and groundwater. In conclusion, he stressed that more efforts are necessary to achieve the goal of the system through better policy and management techniques, education and advocacy, and public participation.



Dr. Devesh Sharma, of TERI University, explained about some of the critical issues on groundwater in India, which is the largest user of groundwater in the world. More than 29% of groundwater blocks are in a critical situation, and more than 60% will be in a critical condition after 20 years if the current level of exploitation continues. He also shared the alarming figures of carbon emissions from groundwater pumping using diesel and electricity. India has various problems in quantity and quality of groundwater, and immediate actions are required for the sustainable development of groundwater resources. Dr. Sharma pointed out that policies in India are not always in line with the groundwater realities such as scarcity and quality degradation. In addition, lack of awareness among users, inefficient monitoring, and weak coordination among different agencies are



raised as the management issues of groundwater. Impact of climate change is also an issue that groundwater management should consider. Dr. Sharma stressed the importance of an integrated approach to sustainable groundwater management in which social, economic, and environmental concerns should be integrated in consideration with past experiences and future scenarios. To promote such an integrated approach, he raised the following points to be promoted: understanding about the drivers of groundwater use and degradation, proper management of aquifers, public private partnership, effective regulation and pricing, community management (interaction between government and community), and groundwater recharge and demand management.

Dr. Tomochika Tokunaga, of the University of Tokyo, presented a case example from Tokyo on the temporal changes of groundwater-related problems in the urban geosphere. Tokyo mitigated depletion of groundwater and land subsidence problems by prohibition of groundwater pumping and by provision of surface water as an alternative to groundwater. However, groundwater levels have now recovered in Tokyo, which in fact caused some problems to underground infrastructures through seepage of water and upward water pressure. He stressed that surface water and groundwater are like two sides of the same coin, and groundwater cannot be managed separately from surface water. Climate change will affect both surface and ground water and so we need to see the resources as a package. Dr. Tokunaga also stressed need for the integration of monitoring and modelling approaches to provide proper information to stakeholders for effective management of groundwater resources. He concluded that we need to understand the behaviour of groundwater and learn from past lessons so as not to repeat past groundwater problems.



THE CHALLENGES AND OPPORTUNITIES FOR IMPROVING CORPORATE ENVIRONMENTAL MANAGEMENT (CEM) IN DEVELOPING ASIA

[Moderator] **Masanobu Ishikawa**, Kobe University

Lei Shi, Tsinghua University

Prosanto Pal, The Energy and Resources Institute (TERI)

Suehiro Hanada, City of Kitakyushu

Tomohiro Shishime, IGES Kansai Research Centre

Xianbing Liu, IGES Kansai Research Centre

Yuki Shiga, IGES Kansai Research Centre

Session Outline

The fast economic growth in developing Asia has caused various environmental problems and inarguably contributed to global climate change. To fill the gap between traditional pollution control and the mitigation of carbon emissions, it is necessary that corporate environmental management (CEM) in this region should be improved dramatically. The objective of this session was to outline the challenges and opportunities for improving CEM in developing Asia. To this end, the speakers discussed ongoing CEM initiatives, such as corporate environmental information disclosure programs, eco-towns, and eco-industrial clusters in China and Japan. The environmental management and compliance of small and medium enterprises (SMEs) in India was reviewed. A common consensus achieved was that a comprehensive policy mix is highly needed to encourage active participation for better CEM in Asia. The session lastly addressed the importance of low-carbon technology transfer from developed countries to enhance the capacity of CEM in developing countries.



Key Messages

- CEM is still nascent in developing Asia, especially for SMEs;
- Corporate Environmental Information Disclosure (EID) scheme in developing Asia holds promise for promoting CEM. This programme should work as a part of an environmental policy mix jointly with command and control, and market-based instruments;
- Eco-industrial parks and eco-towns provide new opportunities for better CEM due to the advantages of collective environmental activities of groups of companies;
- Heterogeneity of companies and industrial sectors must be recognised to promote CEM on a large scale. More efforts should be oriented for capacity building for environmental management of SMEs; particularly in developing countries.
- Transferring low-carbon technologies from developed countries to developing countries may be a promising way to bridge the gap existing for sustainable development and the alleviation of climate change.

Session Summary

Dr. Shishime offered opening remarks, noting that the fast economic development in developing Asia has caused various environmental problems and contributed to global climate change. He emphasised that the traditional mechanisms, such as command and control tools, failed to promote CEM to a significant level. As new strategies, he briefly introduced the concept of corporate Environmental Information Disclosure (EID), and eco-town and eco-industrial clusters, and outlined how these approaches would work to promote CEM practices. Dr. Shishime concluded his remarks by introducing the moderator and panelists of the session.

As the session moderator, Prof. Ishikawa invited the speakers consecutively to give their presentations. He kindly suggested that questions from the audiences would be addressed at the end of the session.



Dr. Xianbing Liu started by explaining the overall policy frame for enhancing CEM, and then took a quick glance at the CEM project conducted at IGES Kansai Research Centre over the past three years. As the main content, Dr. Liu discussed EID as an effective strategy for enhancing CEM. As voluntary EID of companies is still marginal in developing Asian countries, he showed a policy evaluation study of mandatory EID programme implemented in China. The result confirmed that the companies with the worst rating records would be more likely to improve their environmental performances. He pointed out that a mandatory disclosure programme did encourage the participating companies to be more critical of their internal environmental problems. The deterrent and enhancement functions of the programme are still weak due to the marginal pressures from the external stakeholders like investors, business partners and creditors. The influence of the public, such as neighbouring communities and environmental NGOs, is also weak.

Dr. Liu summarised his presentation by proposing some policy recommendations. He suggested that EID strategy could work effectively in combination with other policy tools. Due to the sensitivity of firms to market stakeholders, further efforts shall be made to provide the market actors with easier access to environmental information of companies.

Prof. Lei Shi from Tsinghua University, China, pointed out that Eco Industrial Parks (EIP) may provide new opportunities for CEM. He stressed that clustering of business and development of inter-firm networks is a promising way to improve the environmental performance of business that can also bring economic benefit to the local community. The current industrial progress in China is based on EIP, and that this is more of a success than a failure as in Europe or the US. Prof. Shi summarised the features of China's EIP development, including the government-oriented



promotion model, the sustained industrial growth, the centralised infrastructure mode and the under-developed national industrial symbiosis network. He showed several successful stories of EIP as well as unsuccessful cases. EIP can promote CEM practices on a more significant scale if some of the related remaining problems are solved, such as institutional barriers, low capacity on eco-innovation, weak economic incentives, and lack of information platform.



Mr. Prosanto Pal from TERI noted that environmental management is more problematic for SMEs in India. The SME sector plays a significant role in the country's economy while manufacturing activities are polluting in nature. Mr. Pal claimed that although several environmental regulations for industries have been declared, there have been difficulties in their enforcement. He listed the reasons for this as: lack of awareness among enterprises of health and other environmental hazards; insufficient knowledge of existing legislation; poorly staffed Pollution Control Board (PCB) that cannot effectively monitor the SMEs geographically dispersed over large areas; and the fact that the PCB does not provide technical guidance but only acts as an enforcement agency. He suggested several actions to overcome these barriers such as: supporting demonstration projects on cleaner technologies for SMEs; providing attractive financial incentives to SMEs for upgrading to cleaner technologies; and having the Government support the establishment of local delivery systems to replicate the demonstrated

cleaner technologies among SMEs. Furthermore, he thinks that the PCB needs to play an advisory role and provide guidance for appropriate technology application. A question from the audience about his presentation was whether there is a strong correlation between large companies and SMEs in India, similar to the one seen in Japan? His answer was no, and that the situation has not changed over time.

Mr. Suehiro Hanada stated that serious environmental pollution in Kitakyushu city has diminished over time thanks to considerable efforts from local government, civil society, and the private sector. Kitakyushu has a clear strategy for developing the city through promoting a structural shift from heavy industries to environmental industries. Mr. Hanada mentioned that Kitakyushu city has established the "Kitakyushu Eco-Town Plan" as a recycling-oriented industrial park in 16.8 hectares area of the city's Hibikinada area. The plan is about ultimately reducing waste generation to zero, by taking the "waste" generated in citizen lifestyles and industrial activities, and using it to the greatest extent as raw materials in other industries. Mr. Hanada highlighted that the eco-town is attracting attention not only from Japan but also from overseas. Eco-town receives a growing number of visitors and study tours with about 840,000 visitors. He stressed that eco-town provides a new opportunity for CEM. For a successful project, multistakeholder partnerships that integrate government, civil society, private sector, academic and research institutions should be established.



Lastly, Mr. Yuki Shiga stated that realizing a low-carbon society is one of the global priorities in the 21st century. Addressing the issue of environmentally sound technology transfer from developed to developing countries can play a large role in realizing a low-carbon society on a global scale. He introduced an ongoing project conducted by IGES Kansai Centre that aims to accelerate the transfer / application of appropriate low-carbon technologies from Japan to India.



CAN BIOFUELS CONTRIBUTE TO BUILDING A SUSTAINABLE SOCIETY?

[Moderator] Kazuhiko Takeuchi, United Nations University (UNU) ; Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Zakri Abdul Hamid, Centre for Global Sustainability Studies at Universiti Sains Malaysia ; the Government of Malaysia

Hiroataka Matsuda, Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Osamu Saito, Waseda Institute for Advanced Study, Waseda University

Masahiro Matsuura, University of Tokyo

Mark Elder, Governance and Capacity Group, IGES

Session Outline

This session discussed issues relating to the sustainability of using biofuels to reduce fossil fuel consumption, based on recent research by IGES and other institutions. Topics discussed ranged from food-fuel conflict and land use change to analysis of stakeholder viewpoints and specific issues relating to Japan and other Asian countries. On one hand, biofuels are new and seemingly have great potential, not only for reducing fossil fuel consumption but also for reduction of greenhouse gas emissions and rural development. On the other, hand there are also various challenges associated with them, including the potential for direct and indirect land use change associated with biofuels, especially from deforestation, to result in food-fuel conflict, biodiversity loss, and offsetting of greenhouse gas emission reductions. Land and water availability are important concerns. Results of biofuels are mixed so far, and their benefits depend on the local situation and stakeholders. There are many different stakeholders relating to biofuels, and it is challenging to develop policies that meet all of their expectations. In this regard, this session sought to discuss these and other challenges and opportunities for biofuels in the Asian context.



Key Messages

- **Benefits of biofuels differ depending on the specific local conditions of their production and use. It is especially important to consider direct and indirect land use change and availability of resources such as land and water.**
- **There are many different stakeholders involved in biofuels, and they have many different viewpoints. These are influenced by a variety of factors including domestic political institutions, domestic policies and regulations, transport and refining infrastructure, investment environment, etc.**
- **Multistakeholder dialogues to develop commonly recognised sustainability criteria may be one effective way to promote the sustainability of biofuel production and use.**
- **The economic viability of biofuels varies widely depending on local conditions. Government assistance is often necessary for biofuels to be economically viable for example in the US, but in Brazil, government assistance is less important. Government assistance should promote sustainability of biofuel production and use.**
- **Biofuels may make modest contributions to Japan's policy goals of GHG emissions reduction, energy security, rural development, and sound material cycle society, but imports would be required for large scale use. It is important to examine to what extent imports could be produced sustainably.**
- **Biodiversity considerations should be included when assessing the sustainability of biofuels and developing policies to ensure their sustainability.**

Session Summary

Dr. Abdul Hamid Zakri began the discussion by introducing biofuels and biodiversity, noting that biofuels are new and have great potential, but he called attention to the potential threats on biodiversity. In order to minimise the damages to biodiversity, he suggested three principles. Firstly, biofuel crops should be grown under sound environmental practices. Secondly, the ecological footprint of biofuels should be minimised. Thirdly, biofuels with zero-carbon balance from the perspective of LCA should be given higher priority. He emphasised that the global community would need to develop policy frameworks to reduce the threats to biodiversity, conduct research on positive and negative impacts, and develop conventions to encourage the private sectors to improve social environmental benefit of biofuel production.



Dr. Hirotaka Matsuda gave a presentation from the perspective of international supply and demand of biofuels. He showed that some relationships have been observed between biofuels and crop prices after 2004 and pointed out that the economic viability of biofuel production differs from country to country. US bioethanol production needs subsidies while Brazil can produce in an economically viable manner. Based on the results of a simulation using a partial equilibrium model, maize price is expected to increase and the case to maximise US welfare would be different from the case to maximise global welfare.

Dr. Osamu Saito presented the application of the ontology to biofuels. Ontology is a tool that can be used to put the issues into a structure, visualise them, and seek solutions, based on a sustainability approach to address the specific factors that are not sound in a society. It helps different stakeholders to explore multi-perspective conceptual chains and develop their individual concept maps and reach final solutions from the interaction of those maps. A developed ontology tool can provide a map linking selected key-words related to biofuels and now being under experiment before the finalisation. It is being planned to be utilised for stakeholder analysis and for mapping of policy options.



Dr. Masahiro Matsuura applied stakeholder analysis to biofuels and conducted interviews with stakeholders in Brazil and Indonesia. The stakeholders identified included feedstock producers, refineries, investors, transportation operations, governments, and NGOs. The result showed



that the enabling and limiting factors are various including domestic policy, domestic political culture, infrastructure, investment environment, interactions with supranational institutions, mechanization, domestic/international demands. He lastly presented key implications for Japan such as lack of a committed mandate by the government, lack of appropriate infrastructure, and internalising sustainable standards into Japanese regulatory structure.

Dr. Mark Elder addressed the question of whether the expected benefits of biofuels can be really achieved. He specifically noted the issue of land and water availability for biofuel production and pointed out that potential “solutions” being considered, namely, nonfood crops, unused wasteland, and second generations, all have difficulties in reality. From the case study in Asia, in terms of poverty reduction benefit, the results provided mixed evidence.



The case study on Japan indicated that Japan would need to rely on imports if it seeks a large scale biofuel introduction and the question arises of where the imports would come from. He concluded that initiatives on sustainable criteria would play a crucial role.

Following the presentations, moderator Prof. Kazuhiko Takeuchi summarised some key points, namely, differences in the perceived benefits among stakeholders, frameworks for analysis based on objective data, and relationships with biodiversity. The summary of discussions by the speakers on the suggested key points is as follows.

Stakeholders

Dr. Zakri noted that the benefits of biofuels depend on the local situation and stakeholders. Dr. Matsuura discussed that if stakeholders do not interact well, the result would be a suboptimal solution. An example is the bioethanol production in the United States.

Objective data

Dr. Zakri re-emphasised the importance of examining new feedstocks including jatropha and algae. Dr. Matsuura pointed out that it is very difficult to secure “objectivity” and that the collecting data needs discussion in the first place.

Biodiversity

Both Dr. Saito and Dr. Matsuda mentioned the difficulties related to evaluation of biodiversity. The reasons include lack of data and difficulty to monetize differing and subjective local values. Dr. Zakri introduced one estimate of monetized value of ecosystem services and biodiversity which was as high as USD 3 trillion.

In addition to the above issues, Dr. Saito and Dr. Matsuda pointed out that smallholders in Indonesia cannot apply for certificates and that developing a comprehensive system and conducting monitoring is very difficult. Dr. Elder called for attention to a policy issue on whether government should provide policy support to expand biofuel introduction beyond the amount that would be defined under market systems.

Discussion

One audience member pointed out that given the limitation in land availability, it is important to consider in which area biofuels should be applied. For example, aircrafts might be more focused than motor vehicles since such vehicles could be powered by other energy sources than liquid fuels. Another participant shared her experience in bringing in smallholders into discussions about sustainable palm oil. In that case, smallholders expressed their need for access to processing facilities. The other participant asked what was considered in the evaluation of ecosystems that Dr. Zakri mentioned and questioned whether it is worth converting a biological system to biofuels if the biological system is so precious. Dr. Zakri provided an explanation on what components were included in the evaluations and noted that biofuels currently constitute only a small portion of biological resources.

HARNESSING BIODIVERSITY: STRATEGIC POLICIES AND CONCERTED ACTIONS

[Moderator] Charmine Koda, Journalist

Tsunao Watanabe, Ministry of the Environment, Japan

Zakri Abdul Hamid, Centre for Global Sustainability Studies at Universiti Sains Malaysia ;
the Government of Malaysia

Kazuhiko Takeuchi, United Nations University (UNU) ; Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Masanori Kobayashi, Programme Management Office, IGES

Session Outline

This session was aimed at promoting discussions on key policy issues on biodiversity conservation and sustainable use of biological resources, and drawing important points for consideration during deliberations at the 10th Session of the Conference of the Parties to the Convention on Biological Diversity (CBD/COP10) to be held in Nagoya, Japan in October 2010. Views and insights were shared by the panellists on such issues as international cooperation in the area of biodiversity, strategies for raising awareness and mobilising stakeholder support, integrated ecosystem management and meaningful interaction between rural and urban stakeholders. It was also discussed about lessons and findings from the Asia-Pacific Forum for Environment and Development (APFED), a forum hosted by IGES for the past few years.



Key Messages

- Awareness raising activities should continue to be undertaken on the value of biodiversity and the need for its conservation and sustainable use;
- Lean production of diverse products must be pursued through enhanced community partnership and business model innovation;
- Empowerment of local community is a key to achieve sustainable biological resource use;
- Information measures including labelling and certificates are instrumental tools in providing information on the sustainability of products and promoting informed choice;
- Income generation and alternative livelihood improvement are the key components for promoting biodiversity conservation particularly in developing countries.



Session Summary

Ms. Koda underlined the importance of biodiversity and ecosystem conservation and growing awareness on the issue in the light that the CBD/COP10 will be held in Japan this year which has been designated as the International Year of Biodiversity.

Dr. Zakri asserted, in response to Ms. Koda's question on the reason for the failure of achieving the Biodiversity 2010 Target, that public awareness and policy priority need to be mobilised more ebulliently. The Millennium Ecosystem Assessment, launched in 2005 and considered as a milestone document, was sidelined as a newspaper headline as its launch coincided with the death of the Pope. He said that it would be vital to set an ambitious and effective 2020 Biodiversity Target based upon the proper assessment of the progress made towards achieving the 2010 Target.



Prof. Takeuchi, reacting to Ms. Koda's comment on the integrated ecosystem management and the meaningful interaction between rural and urban stakeholders, emphasised that ecosystems provide not only biodiversity and livelihood bases but also spiritual and cultural grounds. He said that the international community had come to the point of waving away from a mass production system and pursue alternatives for achieving sustainable development. He stated that *Satoyama*, the traditional use of land as part of an integrated ecosystem management in Japan offers multiple biological and socio-economic functions and has commonality



with good practices observed in other countries such as agroforestry in Tomê-Açu, northern part of Brazil, where planting multi-layers of fruit trees, medicinal plants and coffee with animal husbandry achieves high land productivity and prevents soil erosion. He commented that the elderly population can be a potential group to fill the human resource gap in promoting such land use systems and that consumption of local products, for instance, in school lunch programmes, can also help revitalise local product marketing. Direct income support to rural farmers was said to be unlikely to provide impetus to rural community empowerment.

Mr. Watanabe, responding to Ms. Koda's inquiry on the key issues for the CBD/COP10, stated that a number of key issues are at stake at COP10 and its preparatory processes including the Biodiversity Target and access, access and benefit sharing and the International *Satoyama* Initiative. He said that the Japanese government intends to play a leading role in ensuring success at COP10 in forging policies and international cooperation effective in promoting biodiversity and ecosystem conservation and sustainable use of biological resources. Reacting to Ms. Koda's query on the strategies for raising awareness and mobilising stakeholder support, he stated that according to a recent opinion poll, about 60% of Japanese people have not heard of the word "biodiversity" and awareness-raising and stakeholder involvement remain challenging tasks. Local governments and businesses were said to be important in creating a movement towards achieving the CBD objectives. Information-based measures were also deemed as instrumental policy tools and successful experiences need to be capitalised upon for such a purpose in reference to labelling schemes promoted, for instance by the Forestry Stewardship Council and the Marine Stewardship Council.



Mr. Kobayashi was asked by Ms. Koda to comment on international cooperation in the area of biodiversity and spoke about lessons and findings from the Asia-Pacific Forum for Environment and Development (APFED). He stated that income generation and increase is vital in establishing long-term involvement of local communities in activities for conserving biodiversity and promoting biological resources referring to several projects studied or supported under APFED. At the same time, he also said that climate change impacts or their linkages

are already observed in the project sites as the local communities remain vulnerable to such impacts. He underlined the importance of involving external facilitators in order to provide impetus in mobilising, organising and institutionalising local communities.

Discussion

A question was raised as to whether a call for promoting the consumption of local products has any implication to international free systems. It was said that in that respect, information-based measures are suggested as a way for enabling consumers to make an informed choice and to not suggest trade restrictive measures. It was also stated that incentive measures are key to stakeholder mobilisation. In that context, further explanation was made on an example of ibis rice - rice labelled as a product produced by farmers who reduce or eliminate agro-chemicals in paddy land in order to conserve a suitable habitat for the ibis - an endangered and protected bird species in Japan. With such labelling, certified rice is sold at a price about 20% higher than non-certified rice and such price premiums provide farmers with incentives for continuing environmentally friendly farming. It was said that the same type of ibis rice project has been implemented in Cambodia with the support of APFED. Ms. Koda concluded the discussions by emphasising the importance of promoting concerted actions towards promoting biodiversity conservation and sustainable use.

▶ Open Seminar

WHAT'S HAPPENING IN THE CDM?: SEARCHING FOR THE TRUTH THROUGH THE IGES DATABASES

[Moderator] Yuji Mizuno, Market Mechanism Group, IGES

Kazuhisa Koakutsu, Keisuke Iyadomi, Nozomi Okubo, Kentaro Takahashi, Chisako Urayama
Market Mechanism Group, IGES

Session Outline

IGES Market Mechanism Group (MM group) 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. The group has also developed various databases related to the Kyoto Mechanisms and updates them regularly. This session was conducted to explore responses to the title question about what is happening in the CDM by utilising original IGES work, and presented entirely by IGES researchers. The aim was to introduce new findings from quantitative analysis using IGES CDM/JI databases related to the current status and challenges the CDM/JI are facing. It also discussed how to improve the CDM in order to mitigate climate change as well as to promote sustainable development.

Key Messages

- Current protracted CDM procedures have significant influence on the future CDM credit supply even after the 1st commitment period of the Kyoto Protocol, which may halve the credit supply between 2013 and 2020 from the original estimation made by the CDM project participants;
- Effective guidance will streamline the current back-logged CDM registration process and it should contain specific actions and quantitative numbers. Establishment of default values (i.e. Grid Emission Factors) have reduced number of review request and it should be further adapted. Also, guidance for investment analysis has ample room for improvement from lessons-learned;
- Benchmark rate used in the investment analysis is one of the reasons to undertake a review and was rejected by CDM executive board (EB). In China, the government and power sectors have published the official benchmark rate and those sectors could especially promote the development of hydro power CDM project. The development of a common benchmark rate approved officially such as that approved by the Chinese government, may remove the barriers to the investment analysis;
- Programme of Activities (PoA) is a new type of CDM in which procedures were adopted at the EB meeting in June 2009. Its original features seem to contribute to making its trends different from the normal CDM and also to promote solving problems related to the normal CDM;
- Green Investment Scheme (GIS) has started to compete with the CDM in transfer of Kyoto units. In addition, growing uncertainty in certified emission reduction (CER) issuance might drive the demand for Kyoto units from the CDM to GIS. To prevent this happening excessively, it is important to take measures to improve the procedures of CER issuance.

Session Summary

The first presenter, Mr. Keisuke Iyadomi presented the potential CDM credit supply between 2013 and 2020 based on statistics and analysis from the IGES CDM Project Database. He summarised five major risks that were involved in the CDM process might downsize the original estimation made by the project participants, such as 1) protracted validation process, 2) high dropout during the validation process, 3) protracted registration process with high rejection rate by the CDM EB, 4) operational risks after registration, and 5) low issuance success rate. Due to such risks, 17 billion tons of CDM credits in that period according to the original estimation of the Project Design Documents and simple projection on future projects coming into the pipeline might become almost half (9.6 billion tons). In addition, he also demonstrated how international decisions on the CDM might influence future supply, using three hypothetical scenarios. He explained that future supply continued to rely on the countries currently dominating the CDM market such as China, India, Brazil, Mexico, and Republic of Korea.



Participant asked him how Japan's domestic situation would influence the supply of CDM credits and Mr. Iyadomi responded that CDM projects have kept increasing despite the weak signal from the COP15 towards the CDM post 2013. He added that more than 100 projects were submitted every month in 2010, compared with 82 projects in the total average.



Mr. Kazuhisa Koakutsu presented how the current CDM process could be streamlined and what guidelines would be effective to facilitate the CDM process, based on IGES Review and Rejected CDM database. According to the database, in 2009, 50% of the projects applying for registration received a review request and 67% of them were additionality-related reasons whereas 27% of them were methodology-related. He pointed out the question that additionality mainly originated from the investment analysis despite introducing the guideline for the analysis. On the contrary, the guideline for prior consideration of the CDM, which includes quantitative indicators, worked to reduce

review requests. Therefore, he pointed out that more elaboration of investment analysis and use of quantitative indicators would address the currently delayed CDM process.

A participant raised a question about whether some default values on the IPCC GHG inventory could be used for calculating emission reductions in some projects. Mr. Koakutsu responded that many parameters were not provided by IPCC, but some methodologies had been adopted as default values. Another participant pointed out that input values used in investment analysis could be manipulated to maximize profit for a company. Mr. Koakutsu replied that certain parameters such as tariff price and investment benchmark (i.e. IRR) should be fixed to prevent project developers from deciding such inputs. Also, there was some clarification on the number of currently accredited DOEs and their qualification by UNFCCC. He responded that about 30 DOEs had been accredited until now and that the accreditation panel under the CDM executive board assessed the entities' expertise.

Mr. Kentaro Takahashi made a presentation about the investment analysis which was required to demonstrate the additionality of CDM project. Firstly, he gave a brief introduction on the status of investment analysis in the registered CDM projects by project scale and type. Then his presentation focused on the benchmark rate in more detail and explained what kind of benchmark rates had been selected. He pointed out the variety of benchmark rates by country and project type and also mentioned the official benchmark rate published by Chinese government which had had an impact on hydro power projects in the registration process. Finally, taking the national circumstances into consideration, he concluded that the common benchmark rates by project type in each country would contribute to reduce the transaction cost and time required for project proponents.



A participant asked him about the feasibility of development of common benchmark rates in developing countries except for China and India. Mr. Takahashi answered that it might not be easy to set up common benchmark rates in Least Developed Countries. However, it might be possible to propose the necessity of clear guidance for selecting the benchmark rate to the UNFCCC Secretariat in order to improve the current investment guideline.



Ms. Chisako Urayama showed comparisons between the CDM Programme of Activities (PoA) and the normal CDM which suggested that the PoA had different features. The majority of PoAs were small scale, though only half of the normal CDM projects were small scale. The most popular PoA type was energy saving, which was ranked at seventh in the normal CDM. In addition, she pointed out an original regional balance of PoA host countries.

A participant asked if the original procedure for the additional CDM Programme Activities (CPAs) under a registered PoA would reduce procedural burdens for the Coordinating or Managing Entity (CME), the PoA implementer. Ms. Urayama and other researchers commented that while allowing no additional registration fee for an additional CPA would reduce the cost for the CME, the CPA should pass the simplified validation process. Therefore, the effect on the total burden for the CME was unknown. Another participant asked how the PoA and the normal CDM coexist in the same framework of "the CDM". IGES answered that the PoA was launched to promote a project which could not be a CDM project such as a small-scale energy saving programme initiated by the government and there was the big potential for promoting small-scale projects under the PoA framework.

The last presentation was made by Ms. Nozomi Okubo, who talked about the status of Kyoto unit transfer in 2008 and 2009 and where the CDM was positioned in this regard. She first gave a brief explanation on the other two market mechanisms, Joint Implementation (JI) and Green Investment Scheme (GIS), under which ERUs and AAUs were transferred respectively. She then focused on the results of the analysis on CERs and AAUs. Countries which do not need foreign Kyoto units to meet their emission reduction targets, such as the UK and Switzerland, have transferred most of the CERs they acquired and are considered as transfer points, while Japan has transferred a small part of the CERs they acquired. AAU transfer under GIS increased in 2009 and some of them are to be utilised for compliance. She concluded her presentation with a statement that improvements need to be made to the CER issuance procedure so as not to drive the demand for CERs to AAUs under GIS.



A participant asked whether it was probable that Japan acquired AAUs under GIS to meet its target and Ms. Okubo answered that there still remained country risks in GIS and therefore Japan would probably not rely on only GIS.

Expert Workshops

Engagement of Japanese Organisations in REDD+: Update on progress and planning

12 July 2010, 13:15-15:30

Outline

The Government of Japan as well as Japanese research institutes, environmental NGOs, and private sector organisations are involved in a variety of REDD+ initiatives. The objective of this workshop was to provide an opportunity for organisations in Japan working on REDD+ to present and discuss their work, as well as for strategising. Following a total of five presentations, experts from Asia-Pacific developing countries sought feedback on REDD+ research and work conducted by organisations in Japan. The purpose was to identify how the Japanese Government and Japanese organisations can work most effectively and efficiently to support REDD+ initiatives in developing countries of the region. Participants discussed at which administrative level REDD+ demonstration activities need to be measurable, reportable and verifiable (MRV), how work in a country like Japan could be implemented in another country's context – such as Cambodia, and they discussed the meaning of the “plus” in REDD+. Finally, participants were given the opportunity to discuss both the work of organisations in Japan and in developing countries in the region.

Key Messages

- The Government of Japan, Japanese research institutes, environmental NGOs, and private sector organisations in Japan have initiated a variety of REDD+ activities in developing countries of the Asia-Pacific region. These activities involve forest sample plot surveys, research on forest monitoring and participation of local communities in measurement, monitoring and reporting of carbon stocks, socio-economic studies, and implementation of, or support for REDD+ demonstration activities.
- Although some progress has been made, in developing countries there is a need at national and sub-national levels for comprehensive forest monitoring, a need to reinforce the capacities of national institutions and local stakeholders for the development of a REDD/MRV system, and a need for broad policy reforms to be able to effectively implement REDD+.
- Capacity building of forest administration and local communities requires a large budget from financial institution and more stakeholder involvement including private donors and institutions.
- There is a need for MRV systems at the project level to meet the expectations of investors, but also at sub-national and national levels to develop and implement robust REDD+ policies.
- Research gaps exist on co-benefits of REDD+ activities and on the involvement of indigenous people in REDD+ projects.
- While in some countries national REDD+ criteria have been developed, consensus on international criteria would be desirable.

[Presenters]

Dr. Enrique Ibarra Gene, Policy Researcher, Forest Conservation Team, Natural Resources Management Group, IGES

Dr. Yoshiyuki Kiyono and Mr Yasuhiro Yokota, Forestry and Forest Products Research Institute

Dr. Hwan Ok Ma, International Tropical Timber Organization (ITTO)

Dr. Mitsuru Nasu, Asia Air Survey Co., Ltd., Japan

Mr Hiroto Mitsugi, Deputy Director General, Forestry and Nature Conservation Group, Global Environment Department, Japan International Cooperation Agency (JICA)

Workshop Summary

Dr. Henry Scheyvens, Director of the IGES Natural Resource Management Group welcomed participants to the expert workshop and briefly outlined the workshop proceedings.

Dr. Enrique Ibarra Gene presented ongoing and planned REDD+ research at IGES, comprising action research on participatory methodologies to engage local communities in measurement, monitoring and reporting of carbon stocks, a survey to track the involvement of Japanese organisations in REDD+, REDD+ capacity building workshops and an online REDD+ database. Observations from recent research IGES include: The implementation of REDD demonstration activities requires inter-sectoral policy coordination. The risk of international displacement of emission reductions through increased timber imports from neighbouring countries needs to be considered. Strategies to attend to the demand for timber need to be devised, as timber supply shortages in the short term may increase the profitability of logging (legal and illegal).

Dr. Yoshiyuki Kiyono and Mr. Yasuhiro Yokota, Forestry and Forest Products Research Institute (FFPRI), presented on REDD+ Related Endeavours of FFPRI. FFPRI has conducted research examining forest degradation and deforestation in the context of REDD+, explored methods for forest monitoring and has undertaken a socio-economic study in Lao PDR and Cambodia. In July 2010, FFPRI set up a REDD Research and Development Centre with the mission of building consensus and knowledge about REDD+. FFPRI presenters argued for the right balance between flexibility for tackling various types of DD and conditionality for resolving problems of governance.

Dr. Hwan Ok Ma, International Tropical Timber Organization (ITTO) presented on Lessons Learned from the Implementation of the ITTO REDDES (REDD and Enhancing Environmental Services). ITTO is undertaking 10 REDDES demonstration projects in selected member countries with a total allocation in 2009 of USD 4 million, partly through public-private partnerships. In many countries, there is a need at national and FMU levels for comprehensive forest monitoring, a need to reinforce the capacities of national institutions for the development of a REDD/MRV system, and a need for broad policy reforms to be able to effectively implement REDD+. Dr. Ma stressed the importance of both increased public financing as well as substantial private investment to address these needs in tropical countries.

Dr. Mitsuru Nasu, Asia Air Survey, presented some preliminary results of a case study for implementing REDD in Lao PDR. The study focuses on an integrated approach rather than a specialised technical approach for realising a REDD implementation framework. This year additional research and development activities will be carried out for improving the technological level of each component of the integrated system including various field verifications of the results, more forest sample plot surveys, and higher resolution satellite image analysis.

Mr. Hiroto Mitsugi presented on REDD+ related activities of the Japan International Cooperation Agency (JICA). The main activities are forest resource assessment, emission assessment, REDD+ demonstration and capacity development. Main lessons include that capacity-building of forest administration requires a large budget from financial institution and more stakeholder involvement including private donors and institutions. Good practice of REDD+ demonstration and carbon assessment provides guidance to partner countries and attracts investors to carbon offset as well as forest and nature conservation.

Discussion

Participants discussed at which administrative level REDD+ demonstration activities need to be measurable, reportable and verifiable (MRV). One participant pointed out that in the case of the recent Norway-Indonesia MoU-based USD 1 billion funding for demonstration activities in Indonesia, MRV systems will relate to the FMU, district and provincial levels. A participant from Indonesia emphasised that in the case of the Ulu Masen demonstration activity in Aceh Province investors were interested to see funds work at the project level, requiring project developers to establish a MRV system at the project level.

A project developer from Cambodia commented that the ongoing REDD+ related work of organisations in Japan was impressive, but wondered how much of this work could be implemented on the ground in a country like Cambodia with many stakeholders. She pointed out the challenges faced by her organisation when developing a system to work with communities that included more than 70 indicators, and recommended a reality check of what type of activities are actually feasible at the village level. Appreciating that considerable research effort of organisations in Japan addresses technical aspects, she hinted at research gaps on co-benefits of REDD+ activities and on the involvement of indigenous people. A participant from Papua New Guinea stressed the importance of capacity building and resources from the perspective of a developing country. He also noted that while PNG has developed REDD+ criteria, agreed international criteria would be desirable.

Participants also discussed the meaning of “plus” in REDD+. While REDD+ is sometimes understood as additionally targeting to achieve co-benefits such as sustainable forest management, biodiversity or community related objectives, one participant clarified that under the UNFCCC negotiations the “plus” stands for an enhancement of carbon stocks. The project developer from Cambodia explained that their project can achieve premium credits from both an assessment of biodiversity related benefits and from enhancing carbon stocks through enrichment planting and silvicultural practices such as thinning and pruning.

Strengthening International Cooperation on Management of Regional Air Quality in East Asia

12 July 2010, 15:45-18:00

Outline

This session discussed the importance of more comprehensive regional air quality management in East Asia, and in the process identified some of the potential domestic factors that could affect efforts to enhance international cooperation to promote more comprehensive regional air quality management. After these discussions the intention was to explore a possible regional framework to address regional air quality problems and strengthen regional cooperation to improve air quality management in East Asia. To facilitate these outcomes the participants discussed the current state of debate on co-benefits and the development of integrated climate-air pollution strategies, options for establishing regional standards for air quality instead of borrowing standards from other regions ad-hoc, and the main obstacles to international cooperation in East Asia on air pollution such as the apparent conflict between economic growth and pollution control – in addition to other critical topics.

Key Messages

- **There is a need for a process to promote international consensus on air pollution measures:**
 - Expanding EANET to include larger epistemic community would benefit international cooperation,
 - Strengthening linkages between regional efforts and LRTAP and UNEP would strengthen international framework on air-pollution,
 - Improving information exchange between scientists and decision-makers;
- **More science action on integrating transboundary transport of air pollution with co-benefits aspects would strengthen the argument for both national level and internationally concerted action;**
- **Better integration of environmental concerns into trade agreements;**
- **Inclusion of air-pollution (Black Carbon and Ozone) in the next IPCC Assessment Report.**

[Participants]

Mr. Richard Mills, Director of the International Union of Air Pollution Prevention Associations and Joint Convener of the Global Atmospheric Pollution Forum

Dr. Hajime Akimoto, Director General, Asia Center for Air Pollution Research

Dr. Mark Elder, Principal Researcher Governance and Capacity Group, IGES

Prof. Katsunori Suzuki, IGES Senior Fellow and Professor at Kanazawa University

Mr. Masaru Moriya, Deputy Director General of the Global Environment Bureau, Ministry of Japan

Dr. Monthip Tabucanon, Principal Inspector General, Ministry of Natural Resources and Environment, Thailand

Ms. May Ajero, Air quality management and co-benefits specialist at the Clean Air Initiative for Asian Cities (CAI-Asia)

Workshop Summary

Presentation 1

Mr. Richard Mills summarised the current state of debate on co-benefits and the development of integrated climate-air pollution strategies, including in the European Commission, the LRTAP Convention and major member states in Europe and North America. He then described some developments that could enhance international cooperation, including the review of the LRTAP long-term strategy. He further mentioned that there was no global framework, similar to, for instance, the UN Law of the Seas that could cover air-pollution; even though regional air-pollution networks do exist, they are in very varying states of action and also do not yet cover hemispheric pollution. He proposed solutions for strengthening integration on air pollution, including bringing it into the climate change framework, where Black Carbon and Ozone issues could be approached on a sectoral basis and have significant co-benefit impact and also concluded that global cooperation could be strengthened by developing closer linkages between LRTAP and UNEP.

Comment on Mr. Mill's paper from Dr. Monthip Tabucanon that monitoring of air quality can bring useful inputs into policy making. The question was however, how to influence policies to safeguard the environment. She stated that we need technological regulatory measures, adding that prevention is superior to treatment. She elaborated that some countries had already taken steps to reduce fuel consumption and practice fuel substitution. Secondly, air-pollution can also be regulated through ambient air quality standards. The industrial sector for instance, should strictly adhere to these standards before being allowed to make investments. Finally, taxation according to pollution level could work as incentive-based instrument. She also added that capacity building and information exchange across disciplines featured in this conference are important for enhancing regional understanding on these matters.

Mr. Mills agreed on the importance of quality improvement, but added that it was actually technology that drives the quality improvement.

Presentation 2

Dr. Hajime Akimoto gave a presentation entitled Scientific Background of Regional Air pollution in East Asia and the Need for more Comprehensive Regional Air Quality Management. He gave a comprehensive overview of global and regional emission trajectories focusing on China and Japan and the scientific proof of their transboundary connection. He showed that the intercontinental transport of air pollutants is quite large. He gave scientific background on Black Carbon and Ozone and showed that the climatic forcing properties of both were substantial. He stated that there was a need for science action on the issue of better integration of transboundary transport of air pollution and the climatic/health related co-benefits of mitigation. Furthermore his presentation emphasised the importance of epistemic communities for creating a common understanding on this matter. Finally his presentation mentioned the importance of launching satellites to collect data on air-pollution and inform decision makers on scientific facts arguing for the need for integrated action in this issue.

The comments for Dr. Akimoto included that no air quality database currently existed and it was suggested that UNEP should be able to work with member states on collection of the information. Dr. Elder commented that air quality standards in developing countries were of very varying quality and thus difficult to compare. He mentioned the example of Thailand, where there were weak points, even though they follow the US EPA standard. He suggested an option of formulating a regional standard. Mr. Moriya commented that this presentation was important because it could show causes and sources of pollution, and also touched on challenges on the political level. He added that a 3rd phase could be carried out to establish a regional framework of cooperation. There needs to be further discussion regarding the kind of regional agreement

and framework that should be established. He added that the co-benefit nature of the air pollution measures also included the impact of air pollution on important ecosystems. Finally, climate change negotiators are preoccupied with their own negotiations, and it would be difficult but crucial to try and achieve the inclusion of air pollution factors in the next round of negotiations, especially if the EANET could expand from focusing on dry deposition to air quality.

Mr. Mills answered that IPCC would play a critical role in including this air pollution issue. It is very important to push them to move on this matter. Many scientists in this framework will not open their eyes enough, and maybe fresh eyes are needed in terms of including this issue as well in the next AR.

Presentation 3

Dr. Mark Elder gave a presentation on national constraints and opportunities for addressing air pollution issues in selected East Asian countries. He told the audience of current research comparing lessons from the EU experiences with the domestic policies of four countries (Japan, China, Republic of Korea, and Thailand). He emphasised that international agreements depend on national level implementation and noted that more research was needed into the constraints for stronger domestic policies. Moreover, he mentioned the importance of identifying the interplay between business and policy, stating that actors sometimes base policy intervention on interests. Using the European LRTAP as an example he showed that international strategic factors such as competitiveness played strong roles in forming agreements, and also that the creation of epistemic communities played equally decisive roles in creating the right environment for an agreement. He elaborated that while the background for international cooperation could be more complicated in Asia, the diversity of European countries was quite large as well. He stated that there are a number of trends that can lead us to cautious optimism, but there is still need for continued upgrading of capacity within governments, including on municipal levels to deal with air-pollution. Finally, he concluded that the main obstacles to international cooperation in East Asia on air pollution included 1) level of information and uncertainty on effects; 2) uncertainty regarding coping costs and the effects on economic competitiveness; and 3) institutional structure and decision making process.

Presentation 4

Prof. Katsunori Suzuki made a presentation on Asian co-benefits partnership, presenting an overview of initiatives to promote this approach in Asia. He focused on challenges in creating a better regional cooperative framework. His overview focused on EANET, its structure and major achievements including highly reliable data quality, local ownership, solidarity among air pollution community at intergovernmental level and the creation of mutual trust between the participating countries. There had also been improvement in capacity building, stronger scientific community, tradition of decision making by consensus, and burden sharing by all countries with UN assessment scale. His presentation proceeded to give an overview of the 1999 Gothenburg Protocol, summarising key information on its structure and modalities of the integrated approach. In comparison with Asia, he stated that an integrated framework in this region might have to use incentive-based structure such as emission targets because European regulatory approaches could be more challenging in terms of compliance. Finally he gave an overview of the Joint Forum on Atmospheric Environment in Asia and the Pacific, stating that a co-benefits approach had received growing attention in Asia and that strengthening the argument for co-benefits approach would require more research into methodology and interactions between atmospheric pollution and climate systems.

Dr. Monthip Tabucanon commented on Prof. Suzuki's presentation that EANET had indeed made considerable progress. She added that EANET would focus on achieving its objectives. However there is not yet sufficient capacity and sites to get good information on spatial and other factors of pollution. She proposed that

an inclusion of PoPs and other chemical compounds' concentration in groundwater and precipitation could strengthen the argument for action on these kinds of airborne pollutants. She also mentioned that forest fires and land fires, and accumulation of ozone in forest areas should also be considered for future research. She added important points for the improvement of EANET including emission inventories quality assurance and control (QA/QC), strengthening the co-benefit argument, promotion of public awareness and establishment of a sound financial framework.

Prof. Suzuki responded that EANET has achieved a great deal but in terms of QA/QC improvements, there is still more work to do. However, without political commitment, he added that it would not be feasible to move further on it and elaborated that the issue was how to go from merely monitoring onto implementing policies and measures. He added that we need to assist countries to undertake appropriate action and finally that we also need more monitoring sites and more scientific research, to improve the scope for concerted action on air-pollution abatement in Asia.

Overall comments

Mr. Moriya included the main points are related to improving cooperation in East Asia. He stated that problems are becoming bigger with industrialisation and urbanisation. Many countries are becoming aware of their transboundary relationships in terms of pollution. Scientific research is critical, and transparent information exchange is crucial as well, along with policies and measures to counter the pollution. Thus today's suggestions included forming a mechanism of regional exchange of information that could include national emission inventory to provide a scientific basis for analytical modeling of evolution of pollution.

Ms. Ajero added that what was missing in this discussion was to emphasise the need for strengthening air-quality standards. In Asia, although there are many facets to air quality standards, not all countries have ambient air quality standards (including Bhutan, Pakistan etc). Even Hong Kong took more than a decade to change their priorities in terms of air quality. She concluded that countries need a roadmap for ambient air quality standards with actual implementation plans. She elaborated that a fuel quality standards, and CO₂ roadmaps, and then air quality could also easily be incorporated into this. She added a comment on science and air quality monitoring stating that there was a need to connect scientists with decision-makers. CAI Asia for instance has been working hard to bring decision-makers into these meetings so that they can come up with ideas on where they want to be in terms of air quality, in 10 years.

One of the key areas for air quality management is to improve capacity on local levels. China has made large improvements on identifying point source pollution; however, improvement still needs to be done to connect them with the overall pollution levels they are experiencing. On a sub national level, China is also increasingly cooperating from city to city. With this improvement in China's capacity she predicted that they would soon be able to cooperate on a regional level. It was added that the Stockholm Environment Institute has developed a Low Carbon Economy master plan for China and that the country is advancing rapidly.

Dr. Elder commented that of the biggest problems for improving air quality is the apparent conflict between economic growth and pollution control. Here in Japan the focus is on EANET, but in Republic of Korea, it is LTP that focuses more on modelling.

Planning Meeting on the Regional Water Knowledge Hub for Groundwater Management of Asia-Pacific Water Forum

12 July 2010, 13:15-17:30

Outline

IGES has been conducting strategic research on groundwater management issues, both quantity and quality aspects, in Asia-Pacific regions for more than six years. In June 2009, IGES was approved as the regional water KnowledgeHub for groundwater management of the Asia-Pacific Water Forum (APWF). APWF regional water KnowledgeHubs is a network of centre of excellences covering more than 17 priority topics on water and with a focus on addressing water scarcity in the Asia-Pacific region. As a KnowledgeHub, IGES should play a leading role in addressing and solving a range of problems and issues related to sustainable groundwater management in the Asia-Pacific through innovative and strategic research, strengthening networks with clients and partners, and knowledge sharing and capacity development activities. The IGES freshwater sub-group organised a two-day planning meeting for the KnowledgeHub on groundwater management and invited groundwater experts, potential partners, clients from different countries in order to discuss and identify priority issues, research topics on groundwater management, knowledge sharing and capacity development needs, and fostering networking with clients and partners in future. The planning meeting aimed to meet the following objectives: to identify and discuss priority issues on groundwater management in Asia, prioritise areas of possible joint research collaboration, and identify potential sites for comparative studies; to identify potential areas of capacity development for the improvement of groundwater management; and to discuss potential knowledge sharing services to be provided by the KnowledgeHub for groundwater management.

Key Messages

- **IGES as the APWF regional water KnowledgeHub for groundwater management should play a leading role in the region by creating knowledge based products, implementing joint research with partners and clients, and also through capacity development activities;**
- **A number of groundwater problems such as aquifer depletion, contamination (such as Arsenic and other anthropogenic contaminants), salt water intrusion, land subsidence, and climate change impacts are becoming serious, while there are several groundwater management issues such as governance, regulation, rural-urban conflict, and awareness that also need to be addressed for the sustainable groundwater management;**
- **There is immediate need to focus on output oriented activities such as baseline information collection, comparative case studies, and development of groundwater database for the region, all of which are crucial for policy and decision-making;**
- **Lack of awareness is still a major issue in groundwater management, and capacity development activities should focus on all levels from general users, managers, to policy and decision makers;**
- **IGES outreach strategies should focus on how to reach to the clients and partners in effective way by providing necessary groundwater knowledge in a useful form. Making stakeholders aware of the existence of KnowledgeHub and its services is very crucial for boosting the profile of KnowledgeHub in the region;**
- **Collaboration with partners and clients to identify priority research issues, conduct joint research, organise capacity development programmes, and share of knowledge is an important strategy to enhance networking;**

[Participants]

Mr. Devesh Sharma, Assistant Professor TERI University India

Mr. Ganesh Pangare, Coordinator, Regional Water and Wetlands program, Asia, The International Union for Conservation of Nature (IUCN) Thailand

Mr. Hari Prasad Dhakal, Executive Director Kathmandu Valley Water Supply Management Board (KVWSMB) Nepal

Mr. Juanqing Yang, Vice Director Groundwater Monitoring Center, Ministry of Water Resources China

Mr. Mao Saray, Director Dept. of Rural Water Supply, Ministry of Rural Development Cambodia

Ms. Midori Matsumura, Assistant Manager Japan Water Forum Japan

Mr. Ramon Alikpala, APWF KnowledgeHubs Secretariat Asian Development Bank (ADB) Philippines

Mr. Sangam Shrestha, Assistant Professor Asian Institute of Technology (AIT) Thailand

Mr. Satoshi Takizawa, Professor/IGES Senior Research Fellow, University of Tokyo Japan

Mr. Shigeo Fujii, Professor, Kyoto University Japan

Mr. Tadashige Kawasaki, NARBO Associate Asian Development Bank Institute (ADBI) Japan

Mr. Tatsuo Kunieda, Japan Water Agency Japan

Mr. Tomochika Tokunaga, Associate Professor and Representative of JAGH, University of Tokyo Japan

Ms. Tran Thi Hue, Head of Division for Water Resource Planning and Exploitation Management Dept. of Water Resource and Management, Ministry of Natural Resources and Environment Viet Nam

Mr. Hideyuki Mori, President, IGES Japan

Ms. Yatsuka Kataoka, Director, Freshwater sub-group, IGES Japan

Mr. Binaya Raj Shivakoti, Researcher, Freshwater sub-group, IGES Japan

Mr. Bhim Nath Acharaya, Researcher, Freshwater sub-group, IGES Japan

Mr. Bijon Kumar Mitra, Associate Researcher, Freshwater sub-group, IGES Japan

Ms. Ayako Hongo, Assistant, Freshwater sub-group, IGES Japan

Mr. Han Peng, Student, Hiroshima University China (Observer)

Workshop Summary

The meeting started with opening remarks by Mr. Hideyuki Mori, president of IGES. He mentioned that approval as APWF regional water KnowledgeHub for groundwater management was a significant milestone for IGES. IGES hoped to meet the expectation from all its stakeholders as much as possible and organising this meeting is one of its efforts in that direction. He hoped that the meeting will be very fruitful and successful.

Mr. Ramon Alikpala, APWF KnowledgeHubs Secretariat from ADB, gave an opening presentation about concept behind APWF regional water KnowledgeHubs. Solutions to all water related problems in Asia can be found within Asia, and therefore the beauty of KnowledgeHubs is to expand their knowledge throughout the region. Networking is the strength of KnowledgeHubs. KnowledgeHubs need to think about doing comparative studies and creating a regional database. He stressed the need to make KnowledgeHubs activities known to a majority of clients and partners, and activities like this planning meeting are very important to raise awareness and increase the profile of the KnowledgeHubs in the region.

Following this, representatives from potential client countries gave their presentations on the groundwater situation in their respective countries. Mr. Mao Saray mentioned that about 53% of the population in Cambodia are dependent on groundwater for drinking in the dry season. Recently, a large number of aquifers near the Mekong River were found to be contaminated with Arsenic, and 0.2 million people (in 1607 villages) have been exposed to these high risk aquifers. Mitigation measures such as education, introduction of household treatment technology, and providing alternative water sources in poor groundwater quality areas are being considered.

Mr. Hari Prasad Dhakal highlighted serious groundwater depletion as well as aquifer contamination problems in Kathmandu, the capital city of Nepal. Over the last 30 years groundwater has been continuously depleting and many of the natural springs have already dried out. Groundwater is now extracted by all sectors such as city water supply, individuals, government institutions, hotels, private water supply tankers and industries. Lack of basic information such as resource potential, recharge, and use trend is a major challenge for implementing the management plans and policies.

Dr. Jianqing Yang presented about groundwater management in China. Groundwater is facing great stress in China, both in urban and rural areas, such as from increasing water scarcity, aquifer depletion, contamination and salt water intrusion. The government of China is making several efforts such as automatic monitoring, modelling, closing of pumping wells in critical areas, as well as introducing 'most strict water resource management system'.

Ms. Tran Thi Hue presented about groundwater issues in Viet Nam. Groundwater supports 40% of water supply in urban areas and 80% in rural areas. Groundwater is a very important source of freshwater, especially during the dry season. Depletion of aquifers by over-extractions and contamination by organic pollutants are serious issues in major cities. In lower deltas in Viet Nam, the influence of sea level rise due to climate change is becoming a threat to groundwater resources.

Following the country presentations, potential hub-partners shared their experiences of working in water management issues and also proposed possible actions to be taken.

Dr. Ganesh Pangare discussed IUCN recent experiences on groundwater management activities in Asia. In spite of various uses of groundwater, the issues on groundwater have not been well addressed in the region, especially in the Lower Mekong region. He also shared the idea about an upcoming capacity building tool kit on groundwater management (SPRING), which could be a valuable reference for the KnowledgeHub. He also emphasised data sharing issues, where KnowledgeHubs could play a significant role in future.

Dr. Devesh Sharma shared the activities of TERI such as the KnowledgeHub for Water and Climate Change Adaptation in South Asia and also challenges and approaches for the sustainable management of groundwater. India is the largest user of groundwater and is facing many challenges such as aquifer depletion, quality deterioration and sea water intrusion. Lack of good governance is the major challenge of groundwater management. Due to the complexity of problems in groundwater management, various kinds of approaches are considered such as resource assessment, community approach, promoting 4R (reduce, reuse, recycle, and recharge), regulating and pricing mechanism and rainwater harvesting.

Dr. Sanagam Shrestha mentioned AIT experiences and expertise on groundwater management. For a long time, AIT has been providing training and conducting research activities on groundwater management in Asia. AIT is very strong especially on capacity development and it also conducts courses on groundwater. There are also a number of students who are focusing their research work on groundwater issues in Asia. He expressed his strong support for AIT to fulfil the mission and vision of KnowledgeHub activities.

Prof. Shigeo Fujii from Kyoto University shared his networking experiences while conducting different joint research and education activities on water environment in Asia. Studies on water environment mainly depend on multidiscipline human resources, as it is not possible to deal with water issues without considering different interrelated aspects of hydrology such as river flow, lakes and groundwater. He stressed that collaborative research is usually beneficial for both sides and he also showed the interest in working with KnowledgeHub for Groundwater Management.

Prof. Satoshi Takizawa from the University of Tokyo facilitated discussion to identify priority research issues based on all the previous presentations. Groundwater contamination (especially Arsenic), groundwater depletion, impacts of climate change and rural-urban conflict for groundwater resources and groundwater governance were identified as priority issues during discussion. Possible solutions and major difficulties/challenges to implement them were also discussed.

On the second day, discussions were focused on capacity development needs and outreach strategies of KnowledgeHub. In the session on capacity development, participants listed what areas of capacity development are necessary to solve groundwater issues, for whom we need to do capacity development, and who should be the first priority. Participants indicated that capacity development should be targeted at all levels from users to private sector, groundwater managers, national and local government and decision-makers. There were various areas of capacity development raised by participants including monitoring techniques, how to interpret groundwater data, prevention measures against pollution, raising awareness of water conservation, as well as designing regulations and policies. Participants then shared IGES KnowledgeHub outreach strategies such as the concept of 'word of the month' and 'groundwater KnowledgeHub policy brief'. Other knowledge sharing ideas were proposed by participants such as including animations, thematic maps and access to existing training manuals and databases. Publishing in local languages was also raised as a point to be considered.

The meeting concluded with closing remarks from Mr. Ramon Alikpala, emphasising the importance of enhancing the KnowledgeHub network.

Economic Modelling of Resource Circulation Issues

12 July 2010, 13:15-15:30

Outline

The focus of this session was on understanding and discussing the possibilities of incorporating resource constraints and resource circulation into economic modelling. Discussion focused on which approaches would be useful when creating economic models to find out effective policies for optimal distribution of scarce natural resources and disseminating 3R policies in the Asian Pacific region. The three main speakers shared their own economic modelling and opened the floor to other participants for candid feedback and dialogue, including discussion on what would be the most effective way to model the resource circulation issue using the CGE model, and whether additional factors such as GHG and multiple regions could be included in the models presented. Advantages and difficulties of incorporating resource circulation issues to the computable general equilibrium (CGE) model were discussed.

Key Messages

- The Economy and Environment (EE) Group will be modelling resource circulation and will be dealing with reflecting the impact of resource constraints and resource circulation into the economic model.
- Advantages and difficulties of incorporating resource circulation issues into the computable general equilibrium (CGE) model were discussed.
- Standard input-output analysis (IOA) did not consider the physical flow of waste and the activity of waste management so the waste input-out (WIO) model was developed to cope with this problem.
- Since the waste and treatment process is not a one-to-one correspondence, the WIO model requires the WIO table to be transformed into a square matrix by using the allocation matrix.
- A case study to estimate the global carbon footprint of a commodity produced in Japan was presented and the effectiveness of the global link input-output (GLIO) model was shown.

[Participants]

Speakers:

Dr. Satoshi Kojima, Director of Economy and Environment group, IGES

Prof. Shinichiro Nakamura, Faculty of Political Science & Economics, Waseda University

Dr. Keisuke Nansai, Senior Researcher, Research Center for Material Cycles and Waste Management, National Institute for Environmental Studies

Participants:

Prof. Shinichiro Nakamura

Dr. Kentaka Aruga

Dr. Nansai Keisuke

Mr. Kei Kabaya

Dr. Satoshi Kojima

Dr. Yasuhiko Hotta

Dr. Zhou Xin

Ms. Chika Aoki

Dr. Anindya Bhattacharya

Mr. Shiko Hayashi

Dr. Takashi Yano

Mr. Yoshiaki Totoki

Workshop Summary

Dr. Kojima presented what the Economy and Environment Group at IGES has been doing since IGES's fourth research phase (2007-2010) and its research objectives. He started by showing the importance of resource circulation issues and stated that policy demand and 3R policies are becoming very important in Japan and the Asia-Pacific regions. Then he explained the advantages and difficulties of using the CGE model for resource circulation issues and mentioned about extending the model to a multi-regional one. In the second part Prof. Nakamura showed the WIO model he developed by incorporating waste products into the standard IOA model. He talked about the basic concepts, application and recent developments of WIO model. In the third section Dr. Nansai introduced the GLIO model and showed the global greenhouse gas (GHG) intensities for copper, aluminum, pig iron and pulp products in Japan. He suggested that the GLIO model can be useful for describing the relationship between the production and consumption systems of Japan and foreign countries even when input-output tables and data are lacking for some countries.

In the first section Dr. Kojima showed the recent research activity on combining CGE and IOA models to create economic models for resource circulation in the Asian Pacific region. Prof. Nakamura suggested that it was a very ambitious plan to extend the CGE model for multi-regions and asked how realistic the study

would be. He also recommended that the group include Australia and China in their multi-regional model. Dr. Kojima responded that he knew the difficulty of the modelling and explained that EE group is in the process of finding out the landing point through receiving suggestions from experts and by setting crude assumptions. He also mentioned that the group needs to overcome the lack of detailed technological specifications and limited sectoral disaggregation for the modelling.

In the second section Prof. Nakamura explained his WIO model. His model was different from the standard IOA model in that he included the waste management sector in the IOA model. There were discussions on how different the WIO model is from the standard Leontief-Duchin model and what kind of data will be needed for the modelling. Prof. Nakamura answered that the fundamental difference of his model is that he used the allocation matrix to transform the generation waste into treatment activity since the waste and its treatment process is not a one-to-one correspondence. For obtaining data for the modelling he suggested that it all depends on the study purpose. There was also a question on whether or not his model considered the GHG emissions in the IO table. Prof. Nakamura replied that since his study focus was on the metal form of the products he did not look into the GHG emissions.

In the third section Dr. Nansai gave a presentation on his GLIO model. His model included the overseas sector in addition to the domestic sectors when creating the IO table. There was a question on whether or not the data regarding to substances other than the CO₂ such as methanol was included in the model for the GHG emissions. Dr. Nansai responded that the current version of his model only used CO₂. There was also a question about how he obtained the data. He explained that most of his data were obtained from the global trade analysis project (GTAP).

In closing, there was discussion on what would be the most effective way to model the resource circulation issue using the CGE model and Prof. Nakamura and Dr. Nansai suggested that either combining the linear programming (LP) with the IOA may be one option. They also mentioned that the mechanisms of CGE model to derive the results are usually a black box and that it is necessary to be aware of the difficulty of explaining the results without decomposing the model.

Expert Review of Transportation Cobenefits Guidelines

12 July 2010, 15:45-18:00

Outline

For the past year, researchers at the Institute of Global Environmental Strategies (IGES) have worked with faculty at Nihon University and collaborating institutions in Thailand and the Philippines on developing Transport Co-benefits Guidelines (TCG) to build capacity to quantify co-benefits from public transport projects in Asia. This session solicited feedback on a draft of the guidelines, which will later be incorporated into a revised version of the guidelines. Based on the results of the expert review and revisions the TCG will be prepared for field testing in Thailand and the Philippines. A final version of the guidelines will be published at the end of this fiscal year. The faculty at Nihon University and collaborating institutions in Thailand and the Philippines on developing Transport Co-benefits Guidelines (TCG) to build capacity to quantify co-benefits from public transport projects in Asia.

Key Messages

- The co-benefits (carbon dioxide (CO₂), urban air pollution, public health, vehicle operating costs, time savings and accident reductions) of transportation policies are estimated to be greater in Asia than other regions. Among possible transport options, public transportation projects have the highest co-benefits.
- Co-benefits might become part of the evaluation criteria for nationally appropriate mitigation actions (NAMAs) under a future climate change regime or project appraisals from multilateral development banks.
- Decision-makers in Asia will need a simple set of guidelines to quantify co-benefits from public transportation projects. Simplicity will be particularly important for estimating the co-benefits during the initial concept phase of transport project planning.
- The transport co-benefits guidelines should account for lifecycle emissions and rebound effects. They should also clarify whether they can be used only for projects, policies, or both.

[Participants]

Dr. Jane Romero, Policy Researcher, Climate Change Group, IGES

Dr. Eric Zusman, Policy Researcher, Climate Change Group, IGES

Dr. Akira Ogihara, Senior Coordinator, Climate Change Group, IGES

Mr. Alvin Mejia, Air Quality Researcher, Clean Air Initiative for Asian Cities, Manila, Philippines

Mr. Cornie Huizenga, Joint Convener, Partnership on Sustainable Low Carbon Transport, Shanghai, China

Mr. Kotaro Kawamata, Environment Specialist, Asian Development Bank, Manila, Philippines

Prof. Atsushi Fukuda, Department of Transportation Eng. and Socio-Tech, Nihon University, Japan

Prof. Hisa Morisugi, Regional and Urban Planning Laboratory, Graduate School of Information Sciences, Tohoku University, Japan

Mr. Noynoi Fukuda, President, Asian Transport Research Society, Bangkok, Thailand

Dr. Heru Sutomo, Professor, Gadjah Mada University, Yogyakarta, Indonesia

Mr. Yasuki Shirakawa, Consultant, Climate Consulting, Japan

Prof. Karl Vergel, Philippines National Center for Transportation Studies, Manila, Philippines

Ms. Li Liping, Researcher, Policy Research Center for the Environment and the Economy, Beijing, China

Prof. Sitanon Jedsapipat, Center for Natural Resources and Environmental Management, Bangkok, Thailand

Mr. Yoshihiro Kimura, Ministry of Environment, Japan

Prof. Karl Vergel, Philippines National Center for Transportation Studies, Manila, Philippines

Prof. Sittha Jaensirisak, Ubon Ratchathani University, Bangkok, Thailand

Ms. Noriko Kono, Researcher, University of Hawaii, Manoa, United States

Workshop Summary

Dr. Eric Zusman made an introductory presentation on the quantification of co-benefits in the transportation sector. He began with a definition and illustrations of co-benefits. He then noted that the transport co-benefits guidelines will quantify reductions in CO₂, urban air pollution, respiratory disease, vehicle operating costs, time savings and accident reductions. It is important to quantify these co-benefits because indexing carbon finance to only reduced CO₂ will limit the number of transport projects/ policies receiving that finance. The future climate regime (or development assistance programmes) may therefore use co-benefits as a criterion in allocating financial and other forms of support. A set of guidelines for quantifying co-benefits might anticipate these changes.

Dr. Jane Romero provided a review of the feedback received from experts attending the meeting. She noted that there is a growing consensus that co-benefits should be quantified, but the operative question is how this should be done. She then explained the transportation co-benefits guidelines are meant to be an initial assessment tool, giving decision-makers an approximation of the co-benefits in the conceptualisation stages of a transport project. This will be different from the clean development mechanism (CDM) and the Global Environmental Facility (GEF) appraisal techniques which tend to be more data intensive and time consuming.

Ms. Li Liping reflected on some of China's experiences with co-benefit quantification tools and their relation to the IGES guidelines. She noted that her institute has conducted several studies on co-benefits in the energy sector, and is currently looking at expanding to other sectors and other co-benefits. She emphasised that one of the important considerations when quantifying co-benefits is leakage.

Mr. Karl Vergel provided feedback on the transportation co-benefits guidelines. He suggested that the guidelines use a conventional four-step project evaluation framework. He further noted that the guidelines themselves may not be as important as data on local emissions factors used to measure benefits.

Discussion

The discussion focused on a few key points. One expert suggested that it is important that the guidelines clarify whether it is focusing on transport project or policies. Another observed that the guidelines should demonstrate where in the decision-making process it will be applied (the project concept phase, the planning phase or the implementation phase). Several experts focused on capturing lifecycle emissions and controlling for rebound effects. Both of these factors might have a significant influence on measuring emissions in the transportation sector in Asia.

Possible Collaboration Activities for Supporting Country-based Model Cities Programme

13 July 2010, 15:15-17:30

Outline

As the Secretariat for the High-Level Seminar in Environmentally Sustainable Cities (HLS ESC), which had been convened under the framework of the East Asia Summit Environmental Ministers Meeting (EAS EMM) in March 2010 in Jakarta, Indonesia, IGES is leading follow-up activities for actual implementation of the five activities recommended by the HLS ESC. Towards this, IGES is proposing a platform to facilitate the initiation of country-based model cities programmes in a number of East Asian countries, which could incorporate components such as capacity building activities, technical assistance, knowledge sharing, public-private partnership, and an awarding scheme. Each country programme would be linked under a regional framework to facilitate cross-country learning and cooperation. This workshop aimed to share the progress of the follow-up activities from the HLS ESC and invited inputs from participants to improve a proposal for country-based model cities programmes, as well as to explore collaboration opportunities. The workshop also provided an opportunity for information exchange among participants on ongoing and planned activities related to capacity-building for local government officers in environmental management and development of ESC.

Key Messages

- **Bottom-up initiatives are crucial for realising sustainable cities.**
- **While local governments will be responsible for taking the lead in implementing ESC, cities need support from their national governments, while also tapping into a range of tools and resources offered by international stakeholders such as regional organisations, and donor agencies, through joint initiatives in knowledge sharing and capacity building.**
- **'Pioneering' Asian cities which have been innovative in the area of urban environmental management could be promoted as role models for inspiration and emulation by others. Further encouragement and support should be given to such cities to sustain their momentum.**
- **The challenge remains on how support could also reach other cities which have not yet made significant progress, but nevertheless demonstrate potential and express willingness to make improvements.**

[Participants]

Moderator: Mr. Toshizo Maeda (Workshop Facilitator), Senior Researcher / Acting Director, IGES KUC, Japan

Ms. Naoko Hamashima, Manager, Regional Revitalization Bureau, Cabinet Secretariat, Japan

Mr. Masaru Tokuhara, Manager, International Environmental Strategies Division, Kitakyushu City, Japan

Ms. Mikiko Uchiyama, Manager, International Cooperation Division, Yokohama City, Japan

Mr. Alvin Mejia, Environment Specialist CAI-Asia

Mr. Shigenobu Sato, Assistant Secretary General, CITYNET Secretariat

Ms. Bernadia Irawati Tjandradewi, Programme Director, CITYNET Secretariat

Ms. Sonya Poller, Information and Communications Officer, CITYNET Secretariat

Mr. Arshad Baharudin, Programme Officer, CITYNET Secretariat

Ms. Michie Kishigami, Director, ICLEI

Mr. Naoki Mori, Deputy Director General, JICA, Japan

Mr. Naoto Furukawa, Training Programme Division 1, JICA, Japan

Dr. Sivanappan Kumar, Professor and Coordinator, Energy field of study, Asian Institute of Technology

Dr. Shobhakar Dhakal, Executive Director, Global Carbon Project, National Institute for Environmental Studies, Japan

Dr. Jose Puppim de Oliveira, Assistant Director and Senior Research Fellow, UNU-IAS, Japan

Mr. Makoto Ogawa, Visiting Researcher, Center for Regional Research, Hosei University, Japan

Mr. Hideyuki Mori, President, IGES

Ms. Ikuyo Kikusawa, Researcher, IGES KUC, Japan

Mr. Premakumara Jagath Dickella Gamaralalage, Researcher, IGES KUC, Japan

Ms. Shom Teoh, Associate Researcher, IGES KUC, Japan

Ms. Miwa Abe, Associate Researcher, IGES KUC, Japan

The session was also attended by around 10 – 20 observers.

Workshop Summary

The workshop commenced with a round of self-introduction by all participants. In the first presentation, Mr. Toshizo Maeda introduced the background of the EAS EMM and the outputs of the HLS ESC, as well as IGES' role as Secretariat for the HLS ESC. He highlighted the five recommendations contained in the HLS ESC Chair's Summary, namely: 1) Establishment of an East Asia 'Model Cities' Initiative; 2) A clearinghouse for ESC-related data and information; 3) A Public and Private Sector Forum on ESC; 4) ESC Capacity Building Programme; and 5) EAS ESC Awards based on performance indicators. He explained the idea of starting with the initiation of several country-based Model Cities programmes in East Asia, which could act as an 'umbrella' to include the other four recommended activities in the region. He also shared a timeline for pursuing the follow-up activities towards the 2nd EAS EMM, which would be held in Brunei Darussalam. By then, it is hoped that a more concrete proposal on the EAS Model Cities programme could be presented to the ministers.

Next, Ms. Shom Teoh made a presentation on the findings and observations of a baseline review conducted by IGES on existing country-based initiatives for promoting sustainable cities, focusing on the East Asian region. She highlighted two types of initiatives – City Award Schemes and Urban Investment Programmes, and noted that Award Schemes can be found in many EAS countries. Such schemes indicate the existence of nationally-defined frameworks of sustainable cities, systematic evaluation and selection mechanisms. The innovative features in certain schemes could serve as inspiration and references for designing relevant future initiatives. In the context of the proposed EAS Model Cities Initiative, it is suggested that existing

frameworks and mechanisms of city award schemes in each country can be leveraged upon to develop a country-based Model Cities programme, while also incorporating new ideas and features for a more comprehensive approach.

Mr. Maeda made another presentation to share proposed frameworks and structures of the proposed EAS Model Cities Programme and the flow for the implementation, using sample cases of the Philippines and Indonesia. He explained that national governments would manage country-specific implementation, but a regional platform is required to coordinate and facilitate collaboration between all stakeholders for programme activities. IGES is willing to act as the Secretariat of this platform, and is seeking support and ideas to make this a reality. In line with that, a second HLS ESC was proposed to be organised in Kitakyushu in February 2011. He then opened the floor for open discussion.

Ms. Bernadia Irawati Tjandradewi sought clarification on the expected timeframe, desired final impacts, implementation structures, and number of countries to be involved in the EAS Model Cities programme. She also suggested that perhaps country-based programmes could be linked to the Millennium Development Goals (MDGs) since many Asian cities have yet to make sufficient progress in achieving MDGs even though the deadline would be reached in less than five years.

Dr. Shobhakar Dhakal pointed out that more attention needs to be devoted to clarify the conceptual meaning of a Model City, as well as the development of clear and consistent indicators and thematic areas. To realise actual on-the-ground impacts, he raised the need to involve development and donor agencies into the programme to address the issue of limited resources. Additionally, he emphasised that it was necessary for mechanisms to involve less active and motivated cities as they are the most in need of support from the proposed programme.

Mr. Naoki Mori explained that JICA could fund technical assistance activities of the proposed programme on condition that requests are made through national governments. He suggested that the proposed programme should be endorsed by the respective national governments.

Dr. Sivanappan Kumar introduced a new project launched by AIT, called 'Action towards Resource-Efficient and Low-Carbon Cities in Asia', which will provide training and technical support to 10 selected Asian cities in local sustainability initiatives, and AIT is ready to collaborate with other partners on this.

Dr. Jose Puppim de Oliveira enquired about the selection and judging methods of Model cities and highlighted the feasibility of a bottom-up monitoring approach that could strengthen civil society. He cited the example of Bogota City in Colombia, where citizens monitored the progress of local initiatives, and which also gained the support of the private sector.

Ms. Michie Kishigami emphasised that clear definitions are needed as to what constitutes 'Model Cities'. On one hand, some commonly-accepted baseline requirements can be derived and constituted in a kind of 'Charter', but on the other hand, it is crucial that cities themselves should have their own interpretations and definitions. Top-down approaches are not feasible, but national governments can be requested to make commitments to support cities. A city network like ICLEI can support by organising city conferences, and providing tools and training.

Mr. Shigenobu Sato stressed that the purpose of Model Cities programme is not 'competition' per se, but to achieve outcomes that ultimately benefit citizens. He noted that it is very challenging to define a common idea of Model Cities. A unified, quantitative framework may not be feasible as cities are in different stages of

development. Apart from promoting good models for replication and 'spill-over' effects, it is also important to convey the mistakes or negative experiences of unsuccessful cities. Cities may be able to learn from each other through city to city network and cooperation.

Ms. Naoko Hamashina shared details about Japan's Eco-Model Cities Initiative and explained how it would be succeeded by the new 'FutureCity Initiative', which would promote public-private partnership as one of the main goals, as well as implement various measures in several cities shortlisted from the existing Eco-Model cities.

Mr. Masaru Tokuhara spoke about Kitakyushu City's recently-established Kitakyushu Asian Center for Low Carbon Society. Ms. Uchiyama Mikiko announced that Yokohama City is also planning to establish a centre to promote international techno-environmental cooperation. Mr. Alvin Mejia expressed that CAI-Asia is happy to cooperate with the implementation of activities especially in the area of knowledge management, under the proposed Model Cities programme.

Mr. Maeda acknowledged and responded to the issues raised by the participants. He clarified that the framework and themes for country programmes could be left largely to the respective national governments. However, the Secretariat could provide and recommend a set of goals, concepts and principles regarding Model Sustainable cities, which could be made consistent across all country programmes. The 2nd HLS ESC might be a good occasion to discuss such definitions. Based on current budget plans of the proposed programme framework, there is only enough to fund two persons from 15 cities per year; hence cost-sharing with national governments and other stakeholders is anticipated.

Finally, each participant was invited to speak briefly about their ongoing programmes and upcoming activities relevant to ESC. To conclude the workshop, Mr. Maeda thanked everyone for their valuable inputs, promising to incorporate all ideas raised in this meeting in the programme proposal and to update all participants on future progress following this workshop.

Evaluation of the sustainability of Biofuels from multiple perspectives

13 July 2010, 12:45-15:00

Outline

This workshop presented recent research evaluating the sustainability of biofuels from multiple perspectives, based on a sustainability science approach. Environmental, economic and social impacts of biofuels, including the food-fuel conflict and land use change, were discussed with examination from the standpoints of various stakeholders. From a scientific perspective, biofuels like ethanol are energy efficient based on lifecycle accounting, and they could achieve higher efficiency if we make use of the by-products and waste such as bagasse. From an economic perspective, the increasing usage of biofuels makes it closely related to the agricultural market. Thus, it is important to evaluate the welfare impact of biofuels for both consumers and producers. From a political perspective, the stakeholders involved in the biofuel policy making process are diverse. Thus, it is important to identify the standpoints of different stakeholders. Implications for Japan and other Asian countries were addressed.

Key Messages

- **Biofuels have been recognised worldwide due to potential for reasons of GHG reduction, renewability, carbon-neutrality, energy security and rural development. However, biofuels are also blamed as the main cause for the increase in food price, water shortage and lifecycle green house gas emission.**
- **From a scientific perspective, biofuels like ethanol are energy efficient based on lifecycle accounting, and they could achieve higher efficiency if we make use of the by-product and waste such as bagasse.**
- **From an economic perspective, the increasing usage of biofuels makes it closely related to the agricultural market. Thus, it is important to evaluate the welfare impact of biofuels for both consumers and producers.**
- **From a political perspective, the stakeholders involved in the biofuel policy-making process are diverse. Thus, it is important to identify the standpoints of different stakeholders.**
- **Land and water availability has become a major constraint for the wider adoption of biofuels.**

[Participants]

Moderator: Prof. Kazuhiko Takeuchi, Vice Rector, United Nations University (UNU) ;
Deputy Executive Director, Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Dr. Hiroataka Matsuda, Project Lecturer/Ph.D, Transdisciplinary Initiative for Global Sustainability (TIGS),
Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Mr. Kiyotada Hayashi, Team Leader, Environmental Assessment and Management,
National Agricultural Research Center, National Agriculture and Food Research Organization

Dr. Keisuke Hanaki, Department of Urban Engineering, University of Tokyo

Mr. Shinichi Arai, Senior Research Fellow, Institute for Sustainability and Peace,
Global Environment Outreach Center, United Nations University

Dr. Masahiro Matsuura, Associate Professor, Graduate School of Public Policy, University of Tokyo

Dr. Osamu Saito, Assistant Professor, Waseda Institute for Advanced Study, Waseda University

Dr. Mark Elder, Principal Researcher and Director, Governance and Capacity Group, IGES

Workshop Summary

Prof. Kazuhiko Takeuchi made an introductory presentation on evaluation of the sustainability of biofuels from multiple perspectives. He pointed out that biofuels have been recognised worldwide due to potential for GHG reduction, renewability, carbon-neutrality, energy security and rural development. However, biofuels are also blamed as the main cause for the increase in food price, water shortage and lifecycle greenhouse gas emissions. There is a need to evaluate the environmental, economic and social impact of biofuels based on a sustainable science approach, analyse the standpoints of different stakeholders and identify policy implications for Japan and Asian countries.

Dr. Hiroataka Matsuda made a presentation on the social and economic analysis of international supply and demand in the agricultural market. His analysis showed a statistically significant relationship between the prices of biofuels and agricultural products after 2002 and indicated this correlation may be caused by the increasing market power of farmers against milling factories. He then proposed a framework to analyse the welfare impact of the US biofuel policies by estimating consumer and producer surplus. Based on the simulation using a partial equilibrium model, the result shows that under domestic subsidies, the US welfare

is maximised. He finally developed two policy implications: 1, developing countries could sell agricultural products that could be used as materials to produce biofuels; 2, it is important to introduce other substitutes such as sorghum and potatoes.

Mr. Kiyotada Hayashi examined the land use change caused by biofuel production from the perspective of input categories, greenhouse gas emissions, cumulative energy demand (CED), and the quality and biodiversity of ecosystem. He addressed the importance of land use change in life cycle accounting (LCA) and proposed to generate scenario analysis.

Dr. Keisuke Hanaki evaluated the sugarcane bioenergy systems from the perspective of LCA. His research showed that bagasse could be used more efficiently to produce renewable energy than to produce second generation ethanol. He therefore emphasised the importance of the byproduct and waste from the production of the first generation ethanol.

Dr. Mark Elder addressed the question of whether the expected benefits of biofuels can be really achieved. He specifically noted the issue of land and water availability for biofuel productions and pointed out that potential “solutions” being considered, namely, nonfood crops, unused wasteland, and second generations ethanol, all have difficulties in reality. From a case study in Asia, in terms of poverty reduction benefit, the results provide mixed evidence. The case study on Japan indicates that it would need to rely on imports if it seeks a large scale biofuel introduction and the question arises of where the import comes from. He concluded that initiatives on sustainable criteria would play a crucial role.

Mr. Shinichi Arai made a presentation on the sustainability criteria and indicators (SCI) of biofuels. He reviewed SCIs at different levels, including GBEP, RSB at the international level, EU, Japan and the US standards at the regional level and crop specific standards such as RSPO. He also introduced the existing compliance-checking measures as voluntary auditing and bilateral and multilateral agreements. He finally recommended incorporating greenhouse gas emissions and land use change into the future SCIs.

Dr. Masahiro Matsuura applied stakeholder analysis to biofuels and conducted interviews with stakeholders in Brazil and Indonesia. The stakeholders included feedstock producers, refineries, investors, transportation operations, governments and NGOs. The result showed that the enabling and limiting factors are various including domestic policy, domestic political culture, infrastructure, investment environment, interactions with supranational institutions, mechanisation, as well as domestic/international demands. He presented key implications to Japan such as lack of government’s committed mandate, lack of appropriate infrastructures, and internalising sustainable standards into Japanese regulatory structure.

Dr. Osamu Saito introduced the application of ontology to biofuels. Ontology helps different stakeholders to explore multi-perspective conceptual chains and develop their individual concept maps. A final solution can be reached through the interaction of concept maps from different stakeholders, based on a sustainability approach to address the specific factors that are not sound in a society. Ontological engineering is now under experimentation before finalization. It is planned to be utilised for stakeholder analysis and for mapping of policy options.

Discussion

One participant recommended incorporating trade analysis into the evaluation of biofuel policies. He pointed out that to increase the worldwide usage of biofuels, countries should relax or eliminate trade protections that are against the WTO spirit. Also, he questioned the justification of food-fuel conflict in the production process of biofuels. Dr. Elder explained that the food-fuel conflict essentially originated from the shortage of land and water. However, the availability of land and water differs from country to country. For example, the food-fuel conflict is not as evident as it is in India.

Is Asia in a Good Position to Achieve Sustainable Low-Carbon Development?

13 July 2010, 12:45-17:30

Outline

The purpose of this workshop was to introduce key findings from an IGES research project on sustainable low-carbon development in Indonesia and discuss opportunities for expanding the scope of the research to include China and India. The workshop featured three sessions on: 1) low-carbon energy technologies; 2) low-carbon transportation and decentralisation; and 3) Nationally Appropriate Mitigation Actions (NAMAs) and Measurable Reportable and Verifiable (MRV) under a post-2012 climate change regime.

Key Messages

- The promotion of the Renewable Energy (RE) distributed power systems can contribute to low-carbon development in Asia. The following should be considered to realise the potential of these systems: available RE resources; a supportive policy framework; reliable assessments of power demand; opportunities for acquiring technologies; and adequate human resources.
- The IGES low-carbon society project will employ three methods—a status report on RE-based distributed power systems, barrier analysis, and policy analysis—to determine whether findings from research on RE distributed systems in Indonesia apply to India and China.
- To improve the enabling environment for low-carbon technologies in the energy sector, more research is required on analysing gaps in current policy measures. More work is also needed on the contribution of the conventional and nuclear energy to achieving low-carbon development goals in India and China.
- Decentralisation is an institutional trend that merits more attention in modelling studies on low-carbon development in Asia.
- Decentralisation has been both good and bad for low-carbon transport in Indonesia. On one hand, it has enabled policy innovations such as bus rapid transit (BRT) systems. On the other, it has strained the fiscal capacity and administrative coordination needed to capitalise on promising transport reforms.
- Defining nationally appropriate mitigation actions (NAMAs) and measurement, reporting, and verification (MRV) will be important for both developing and developed nations in terms of receiving/providing support for implementing mitigation actions domestically.
- A domestic verification system exists in China. Information collected on energy can be reported and subject to international consultation and analysis. Continuity will be a key to improving emissions inventories (M and R).

[Participants]

Moderator: Professor **Shuzo Nishioka**

Mr. Koji Fukuda, Researcher, Climate Change Group, IGES

Mr. Nandakumar Janardhanan, Researcher, Climate Change Group, IGES

Prof. Ucok Siagian, Bandung Institute of Technology, Indonesia

Prof. Jusen Asuka, Director, Climate Change Group, IGES/Tohoku University

Dr. Anindya Bhattacharya, Researcher, Economy and Environment Group, IGES

Framing presentation by Dr. Eric Zusman, Researcher, Climate Change Group, IGES

Prof. Shinji Kaneko, Hiroshima University, Japan

Dr. Heru Sutomo, Gadjah Mada University, Indonesia

Dr. Jane Romero, Researcher, Climate Change Group, IGES

Prof. Fei Teng, Tsinghua University, China

Dr. Frank Ling, Associate Researcher, Climate Change Group, IGES

Dr. Kentaro Tamura, Sub-Director, Climate Change Group, IGES

Workshop Summary

Session 1

Enabling conditions for low-carbon technologies in the energy sector

The purpose of this session was to discuss opportunities for and barriers to introducing low-carbon energy technologies in Indonesia, China and India. The session started with an overview of current and future trends on conventional energy use in Asia. Mr. Koji Fukuda of IGES introduced the major findings of research on the potential for Renewable Energy (RE)-based distributed power generation systems in Indonesia. The research identified core elements needed to realise their potential: 1) presence of available RE resources; 2) presence of a policy framework; 3) assessment of power demand; 4) opportunity of acquiring technologies; and 5) adequate human resources. Three methods—a status report of RE-based distributed power system, barrier analysis and policy analysis—will help determine whether these results apply to India and China.

Mr. Nandakumar Janardhanan of IGES presented on key challenges to low-carbon energy technology development in India, China and Indonesia, and results of examination of the future policy options towards low-carbon energy technologies. The high share of primary energy demand in these three countries indicates that the shift of fuel types and the usage patterns is mandatory and that there is a need for policies and measures to promote their uptake. Some of the identified policy options demonstrate the importance of working on technology, awareness raising, capacity building, commercial opportunities, public-private partnerships, creation of a green channel, and the decoupling database of fossil fuel consumption from poverty reduction. Further studies should include gap analysis of the current policy and measures. The role of conventional and nuclear energy in India and China in achieving low carbon development goals should also be identified by future research.

Following the presentation, experts provided their views on enabling conditions for low-carbon energy technologies from a Chinese and Indian perspective.

Prof. Ucok Siagian, Bandung Institute of Technology, Indonesia pointed to the critical role of local universities in building capacity for 1) the local government to implement RE policies; and for 2) local banks to identify

what kind of risks and benefits exist in RE businesses. He stressed the importance of building comprehensive systems to address these issues.

Prof. Jusen Asuka of IGES highlighted the uncertain status of the future RE CDM in China. He discussed the following constraints: 1) a small amount of expected emission reductions from RE projects, 2) the difficulty of accurate monitoring of emissions from households, 3) conflict between Chinese government and CDM-EB on the additionality of several wind power CDM projects. He also noted the difficulty of predicting the future of RE due to the uncertain status of the CDM post-2012. Dr. Anindya Bhattacharya of IGES explained that the success of electrification in India was due to an efficient local franchised system, where every city is responsible for making its own electricity distribution businesses. The local franchise model actually creates local employment and now 80,000 villages receive these benefits. He also stressed that there should be studies on applying the local franchised system to other countries like Indonesia and China.

Session 2

Central-local government relationships and low-carbon transportation

Dr. Eric Zusman presented on “Institutions and Low Carbon Transport in Indonesia.” He noted that more rigorous research on institutions is needed in studies on low-carbon development in Asia. He further suggested that decentralisation is an institutional trend that merits more attention in these studies. In presenting the conclusions of his study, he argued that decentralisation has been both good and bad for low-carbon transport in Indonesia. On one hand, it has enabled policy innovations such as bus rapid transit (BRT) systems. On the other it has strained the fiscal capacity and administrative coordination needed to capitalise on promising transport reforms. Dr. Kaneko commented on the “Institutions and Low Carbon Transport in Indonesia” presentation and discussed opportunities for collaboration between Hiroshima University and IGES on the session’s theme. He noted that one of the main issues with decentralisation is that it opens opportunities for corruption (as previous studies on Bangladesh have revealed). He further argued that in order to bring institutions into low-carbon modelling activities there needs to be clearer linkage between the variables in the model and the institutional variables. Dr. Heru Sutomo discussed low-carbon transport and decentralisation in Indonesia. He noted that most people in Indonesia are not aware of the climate impacts of transportation. In fact, people are just starting to recognise the impacts on local air quality, and even here the monitoring, control and enforcement system is still limited. He concluded that while decentralisation might affect low-carbon development, it is important to demonstrate a linkage between actions at the local/global level with co-benefits. Dr. Jane Romero suggested that the presentation employs a novel approach in analysing low-carbon development strategy within the context of decentralisation. She also noted that identifying strengths and weaknesses can help address how low-carbon transport policy and projects work under the decentralisation scheme.

Session 3 NAMAs/MRV

Dr. Kentaro Tamura opened the session with a presentation on Nationally Appropriate Mitigation Actions (NAMAs) and Measurement, Reporting, and Verification (MRV). Without a concrete formula for NAMA, developing countries have submitted various kinds of NAMAs to the United Nations Framework Convention on Climate Change (UNFCCC). He then categorised NAMAs into four groups: building basic infrastructure; project or sector based mitigation actions; pledges for carbon neutral; and economy-wide numerical targets. Three issues remain regarding NAMA/MRV: 1) classification and definition of NAMAs; 2) MRV system and its transparency and credibility; and 3) lack or inadequacy of domestic verification procedures. Dr. Tamura posed several questions for discussion: 1) How can NAMAs be classified into those which are subject to domestic MRV and those which are subject to international MRV? 2) What would be the entry point to estab-

lish full-fledged inventory systems and what are the strengths and weaknesses of existing inventory or MR processes in China, India and Indonesia? 3) How can we determine key parameters and improve accuracy of these systems? 4) How can international consultation and analysis (ICA) of domestic MRV be structured and function?; and 5) What verification system exists in India, China and Indonesia?

Dr. Fei Teng expressed his views in response to questions posed by Dr. Tamura and other participants. He mentioned that autonomous action will be subject to domestic MRV. Developing countries will report this information through national communications and it will be subject to ICA. Supported actions will be subject to international MRV together with the support received. Regarding the inventory system, he mentioned that support will be required to expand the existing inventories and ensure continuity over time. He discussed China's existing domestic verification system and possible future directions for its use. NAMAs, additionality, mitigation costs, definition of verification, and views on supported and domestic actions were covered as well.

Dr. Frank Ling made a presentation on China's MRV in the coal sector. He commented that adopting a transparent system for MRV in China will require "a real cultural shift." He further stressed the importance of building the capacity to accurately collect and report emissions data because the system must operate at the provincial, municipal and local levels.

Dr. Nishioka thanked all participants for their active discussion and reiterated the importance of NAMAs when considering low-carbon development in Asia.

Dr. Asuka provided the closing remarks. He reflected on each session and the main findings from the Low Carbon Development Workshop. He expressed his gratitude to the participants for travelling to Yokohama to participate in the sessions to discuss these difficult but important issues (including low-carbon technology, co-benefits, decentralisation, changing human nature, accountability and communication, MRV, BAU).

Adaptation in Agriculture and Water Sectors in Japan and Its Relevance for Developing Countries in the Asia-Pacific

13 July 2010, 13:00-17:00

Outline

The aim of this workshop was to understand the strengths and weaknesses facing Japan in promoting adaptation through reviewing existing specific expertise and experiences in the agriculture and water sectors. The workshop was divided into five sessions including, 1) introduction, 2) scientific basis and technologies for adaptation, 3) policies for adaptation, 4) institutional mechanisms for adaptation, and 5) overall discussion. Through their presentations and discussions on these issues, the participants sought to identify better approaches to help developing countries in the Asia-Pacific region to overcome barriers to mainstreaming adaptation in their development plans. The experts presented and discussed Japanese adaptation policies in agriculture and associated sectors from three different perspectives: scientific and technological development, policies, and institutional arrangements.

Key Messages

- Climate change projections have indicated significant impacts in agriculture and water sectors in Japan but the progress on implementation of adaptation actions on the ground is still in nascent stages.
- Japan can play a major role in promoting science-based adaptation through financial and technological support to developing countries in the Asia-Pacific region. Japan has proven capability in the areas of downscaling climate change impacts to the smaller grid level, disaster management, irrigation water management and crop development and management.
- Japan also has experience in community development in agriculture and water sector which has not received sufficient attention thus far and may be relevant to developing countries in the region.
- Lessons can be drawn from Japan's challenges including fragmented and complex institutional systems, poor coordination across sectors, and insufficient emphasis on communications and dissemination of adaptation measures.
- Technologies and experiences should be tailored to the specific conditions found in developing countries when transferred, taking into consideration the combination of hard support (financial and/or infrastructure) and soft support (science and knowledge) so that location specific anticipatory-adaptation can be promoted.

[Participants]

Moderators:

Dr. Daisuke Sano, Deputy Director, Adaptation Team, Natural Resource Management Group, Institute of Global Environmental Strategy (IGES), Japan

Dr. S.V.R.K Prabhakar, Policy Researcher, Adaptation Team, Natural Resource Management Group, Institute of Global Environmental Strategy (IGES), Japan

Dr. Mariko Fujimori, Deputy Director, PC-Institute for Global Environment Research (PC-IGER), Pacific Consultants Co., Ltd., Japan

Prof. Kazuya Yasuhara, Professor Emeritus, Ibaraki University, Japan, Researcher, Institute for Global Change Adaptation Science (ICAS), Japan

Speakers:

Prof. Makoto Tamura, Associate Professor, Institute for Global Change Adaptation Science (ICAS), Ibaraki University, Japan

Dr. Toshihiro Hasegawa, Senior Researcher, Agro-Meteorology Division, National Institute for Agro-Environmental Sciences, Japan

Mr. Yoshinori Oikawa, Senior Scientific Officer, Climate Prediction Division, Japan Meteorological Agency, Japan

Prof. Tsugihiko Watabe, Professor, Division of Coordination Center for Coordination, Promotion and Communication, Research Institute for Humanity and Nature (RIHN), Japan

Dr. Fuminori Koike, Deputy Director, Global Environment Policy office Environment and Biomass Policy Division, Ministry of Agriculture, Forestry and Fisheries, Government of Japan

Ms. Masako Konishi, Climate Change Project Leader, WWF Japan

Dr. Taro Kawasato, Subsection Chief, Office of Research and Information, Global Environment Bureau, Ministry of Environment Japan

Prof. Rajib Shaw, Associate Professor, Graduate School of Environmental Studies, Kyoto University, Japan

Dr. Takeshi Takama, Research fellow, Stockholm Environment Institute

[Participants]

Observers:

Dr. Toshinao Okayama, Coordinator of the Regional Hub for Asia Pacific Climate Change Adaptation Network, Senior Researcher, Bangkok Office, Institute of Global Environmental Strategy (IGES), Thailand

Dr. Satya Priya, Senior Technical Coordinator, UNEP (United Nations Environment Programme) RRC.AP (Regional Climate Change Adaptation Knowledge Platform for Asia), Thailand

Mr. Akira Ogihara, Senior Coordinator, Project Management Office, Institute of Global Environmental Strategy (IGES), Japan

Dr. Ancha Srinivasan, Senior Climate Change Specialist, Asian Development Bank

Dr. Md Rabi Uzzaman, Research Officer, Bangladesh Centre for Advanced Studies (BCAS), Bangladesh

Prof. Eklabya Sharma, Programme Manager, Environmental Change and Ecosystem Services, International Centre for Integrated Mountain Development (ICIMOD)

Workshop Summary

The expert workshop on “Adaptation in Agriculture and Water Sectors in Japan and its Relevance for Developing Countries in the Asia-Pacific” was divided into five sessions including, 1) introduction, 2) scientific basis and technologies for adaptation, 3) policies for adaptation, 4) institutional mechanisms for adaptation, and 5) overall discussion. A brief summary of the expert workshop is provided below.

Session I Introduction

Dr. Daisuke Sano of IGES gave the opening remarks.

Dr. S.V.R.K. Prabhakar of IGES introduced the outline and objectives of the workshop. He identified the important challenges being faced in mainstreaming climate change considerations in development planning and emphasised the role of developed countries in overcoming those challenges. He suggested that Japan, being a significant player in promoting development, could be seen as a major player in adaptation in terms of adaptation technologies, policies and institutional mechanisms. His presentation set the overarching question of how Japan can contribute to the adaptation in terms of technological, institutional and policy areas.

Prof. Makoto Tamura of the Institute for Global Change Adaptation Science (ICAS), Ibaraki University presented an overview of adaptation research in Japan with an analysis on the completed and on-going research projects on climate change adaptation supported by the Global Environmental Research Fund of the Ministry of the Environment, Japan.

Session II Scientific basis and technologies for adaptation

In this session moderated by Dr. S.V.R.K. Prabhakar of IGES, Dr. Toshihiro Hasegawa of the National Institute for Agro-Environmental Sciences highlighted that rising temperature is already been observed in some areas in Japan affecting the quality of crops (rice, vegetables and fruits) and emphasised that there is no one ‘magic wand’ that can single-handedly deal with climate change adaptation and thus comprehensive understanding of the mechanism of climate change and impacts is needed to respond to needs in Japan as well as in the region. Mr. Yoshinori Oikawa of the Japan Metrological Agency introduced the latest technology for downscaling the climate forecasting existing in Japan, which is one of the outcomes of the “KAKUSHIN Climate Forecasting Research Programme” funded by the Ministry of Education, Culture, Sports, Science and Technology, Japan. For effective adaptation strategies, Prof. Tsugihiko Watanabe of the Research In-

stitute for Humanity and Nature stressed that there is a need for an integrated impact assessment which is based on not only scientific knowledge but also traditional knowledge accumulated at the local level, taking into account the uncertainties and adaptability of local stakeholders in managing resources. In the following Q&A session, Japan's possible contribution to capacity building to tailor the adaptation technologies to the local needs of developing countries was noted.

Session III Policies for adaptation

The presentation on Japanese adaptation policies in agricultural sector was introduced by Mr. Fuminori Koike, Ministry of Agriculture, Forestry and Fisheries facilitated by the Moderator, Dr. Mariko Fujimori of the Pacific Consultants. Mr. Koike explained the Ministry's approaches on climate change adaptation in the agricultural sector encompassing its strategies, budgets, research activities and aid for developing countries. Ms. Masako Konishi of WWF Japan presented the lessons learned from perception of the local communities based on the survey of WWF's "Climate Witness" project conducted in Japan. Mr. Taro Kawasato from the Ministry of the Environment presented the Ministry's approach on "wise adaptation," which was one of the outputs from the Global Environmental Research Fund introduced by Prof. Tamura in the introduction session. He also emphasised the importance of holistic and integrative adaptation approaches at both national and local levels. During the Q&A session, credibility of the observations by communities and Japan's engagement in adaptation issues of trans-boundary nature (fisheries) were discussed.

Session IV Institutional mechanisms for adaptation

Moderated by Prof. Kazuya Yasuhara of Ibaraki University, Prof. Rajib Shaw of Kyoto University presented the roles of government, NGOs, local communities and the business sector in implementing adaptation policies, with examples found in disaster management in Japan. He also pointed out the importance of the calibration of disaster risk reduction measures to fit the local conditions and the effective combination of hard and soft technologies. In addition to the strengths of Japanese institutional mechanisms in adaptation, Dr. Takeshi Takama of the Stockholm Environmental Institute emphasised that Japan has advantages in access to technologies and funds and these can be effectively transferred to developing countries if local needs, including political, social, economical and cultural aspects, are fully considered. In response to these presentations, Prof. Kazuya Yasuhara pointed out the problems of fragmented institutional arrangements found in Japan.

Session V Discussion

In this session, each speaker was requested to identify two strengths and two weaknesses of Japan in promoting adaptation in their respective fields. The majority of the participants identified scientific advances made in agriculture, climate forecasting and disaster management as strengths that could help Japan to promote science-based adaptation in developing countries. Existing institutional capacity at both national and local levels as well as financial support were also raised as strengths. On the other hand, fragmented sectoral approaches, poor coordination across sectors, complex institutional arrangements and funding frameworks, and too much emphasis on technological solutions with little emphasis on communication and dissemination were identified as weaknesses. The participants expressed appreciation that the workshop provided a valuable insight and stakeholder perspectives on technological, institutional and policy aspects of adaptation in Japan and how relevant they could be for the developing Asia-Pacific region.

Network Meeting

AECEN Regional workshop Replicating Good Practices on Soil Contamination

12-13 July, 2010

1 Background to the network

Improper management of toxic and hazardous waste and other materials due in part to inadequate enforcement of environmental laws and regulations has led to an increasing number of contaminated sites in many countries in Asia. Challenges facing by Asian regulatory agencies related to land contamination prevention and management include: (i) lack of legal and institutional frameworks including standards and guidelines to manage and remediate contaminated sites; (ii) inadequate transportation, storage, treatment and disposal systems; (iii) overlapping authorities of agencies to effectively manage and enforce relevant laws and regulations; (iv) lack of participation from the public and private sectors; (v) inadequate financial mechanisms to support remediation of contaminated sites; and (vi) lack of proper technology to remediate and rehabilitate contaminated sites.



Recognizing the urgent need to address soil contamination, some Asian countries have established national policies and legal framework for preventing soil contamination and rehabilitating contaminated land. In particular, Japan enacted the Soil Contamination Countermeasures Act, which the Ministry of Environment Japan has been implementing successfully for over 8 years. Facing similar challenges, the Department of Environment of Malaysia recently developed the Contaminated Land Management Framework, guidelines for assessing and reporting of contaminated land, and guidelines for planning and management of contaminated land including training modules for environmental officers. With assistance from the Asian Environmental Compliance and Enforcement Network (AECEN), the Pollution Control Department (PCD) of Thailand established a twinning partnership with the Ministry of Environment, Government of Japan to support development of a national policy framework on soil contamination countermeasures.

2 Objectives of the meeting

As a side event to the International Forum for Sustainable Asia and the Pacific: ISAP 2010, on July 12-13, 2010, the Ministry of Environment, Government of Japan will host a regional workshop in collaboration with AECEN. The Institute for Global Environmental Strategies (IGES) and Environmental Cooperation-Asia (ECO-Asia), a regional program of the United States Agency for International Development (USAID), will provide coordination and funding support. The objectives of the event are to:

- Share best practices, policies and innovative approaches and lessons learned from Asian countries on land contamination with a focus on challenges and solutions for effective soil contamination prevention and management including remediation methodologies, enforcement mechanisms, and natural resource damage assessment;
- Present an assessment of soil contamination management status and initiatives to tackle land contamination management in Asia;
- Conduct a focused workshop to develop a regional replication roadmap for Asian countries on regulatory control of land contamination; and
- Identify opportunities for AECEN member-to-member “twining” initiatives.

3 Participants

Workshop participants include environmental officials, policymakers, and other environmental experts from 8 countries in Asia.

Country	Name	Position, and Organization
INDIA	Ms. Barna Majumdar	Environmental Engineer West Bengal Pollution Control Board
	Dr. Rashid Hasan	Director Control of Pollution Ministry of Environment & Forests Government of India
INDONESIA	Mr. Daru Adianto	Civil Law Enforcement Officer Ministry of Environment of the Republic of Indonesia
MALAYSIA	Ms. Hanili Ghazali	Principal Assistant Director Department of Environment
PHILIPPINES	Engr. Vicente E. dela Cruz	Section Chief Environment Management Bureau - Region 3 Toxic Chemical, Chemical Substances and Hazardous Waste Section
THAILAND	Mr. Chayawee Wangcharoenrung	Environmental Officer Water Quality Management Bureau
	Dr. Supat Wangwongwatana	Director General Pollution Control Department
	Ms. Suwalak Joosawat	Legal Officer Legal Division

Country	Name	Position, and Organization
THAILAND	Mr.Thanee Charunat	Environmental Officer Pollution Inspection Division
	Dr. Warapong Tungittiaplakorn	Environmental Officer Pollution Control Department
THE UNITED STATES OF AMERICA	Mr. Thomas K. Lieber	The North Shore Land Alliance
VIETNAM	Mr. Hoang Canh Duong	Master of Environment technology – Environmental expert Department of Natural resources and Environment
	Ph.D. Nguyen My Hang	Office of National Steering Committee 33 Ministry of Natural Resources and Environment
AECEN SECRETARIAT	Mr. Hon Seng, Ng	Regional Managing Director, Environment, SE Asia AECOM International, Inc.
	Mr. Peter Noel King	Secretariat AECEN
	Mr. Paul Violette	Secretariat AECEN
	Ms. Watcharee Limanon	Secretariat AECEN
JAPAN	Mr. Makoto Nakashima	Director Kokusai Environmental Solutions Co., Ltd. Nakashima Laboratory
	Mr. Masaaki Hosomi	Professor Institute of symbiotic Science and Technology Tokyo University of Agriculture and Technology
	Mr. Shin-ichi Kurozu (Observer)	Director Centre for Environmental Technology, Sumitomo Heavy Industries Environment Co., Ltd.
	Mr. Toshihiko Kasai	Director National Institute for Environmental Studies, General Affairs Division
	Mr. Toyohiro Egawa	Soil Monitoring Manager Soil Contamination Countermeasures Division Ministry of the Environment of Japan
	Mr. Yukio Murai (Observer)	General Manager Research and Planning Department Geo-Environmental Protection Center
INSTITUTE FOR GOLBAL ENVIRONMENTAL STRATEGIES (IGES)	Ms. Aya Watarai	Researcher Institute for Global Environmental Strategies (IGES)
	Mr. Masanori Kobayashi	Coordinator Institute for Global Environmental Strategies (IGES)
	Ms. Emiko Doi	Researcher Institute for Global Environmental Strategies (IGES)
	Ms. Sana Okayasu	Researcher Institute for Global Environmental Strategies (IGES)

4 Summary of discussion and activities

During 2 days workshop, 7 experts presented contaminated land from their own academic backgrounds and work experiences. First of all, Dr. Supat Wangwongwatana, Chairman, Asia Environmental Compliance and Enforcement Network (AECEN) Executive Committee, and Director General, Polluted Control Department of Thailand, gave opening remarks.

In Day 1, presenters and participants discussed contaminated land situations and its countermeasures (best practices) for each country. Ms. Hanili Ghazali, Principal Assistant Director, Department of Environment, Indonesia talked about “Law on Soil Contaminated in Malaysia.” She explained situation of contaminated soil, Malaysia’s experience in developing the framework (Contaminated Land Management/ CLM) and guidelines for managing contaminated land. As challenges for Malaysia, she concluded carcinogenic risk, awareness of CLM frameworks, capability and resources are necessary for implementing CLM, and also establishing appropriate standard is needed. Mr. Toshihiko Kasai, Director, General Affairs Division, National Institute for Environmental Studies (NIES) (Former Director, Soil Contamination Countermeasures Division, Ministry of the Environment of Japan) presented “Japanese case of soil contamination countermeasures.” In order to remove contaminated substances from soil, he explained financial support scheme by State and municipalities was operated in Japan. In wrap-up session, Dr. Supat made some comments that guideline and manual for soil contamination should be taken into account, and information of specific condition for each country and some comments also should be shared with other countries.

In Day 2 workshop, participants discussed regional replication. First, Mr. Paul Violette, AECEN Secretariat, introduced AECEN Mission “promotion of replication, scale up of innovation and good practice,” and the role of Twinning Programmes are step by step basic approaches. After that, he explained the most pressing issues related to land contamination to participants. (1) Priority topics for regional cooperation and (2) timeframe (short, mid, and long-term) for addressing regional priorities are discussed among participants. Selected high priority approaches for each timeframe are; capacity building (short term), remediation technologies (mid term), and legal and policy framework (long term). Also training and networking and toolkits and publications were mentioned for improving Twinning Programmes implementing more.

Mr. Masanori Kobayashi, Senior Coordinator, Programme Management Office, IGES, talked about background of Japan-Thailand twinning programme from the perspective in Japan. Japan-Thai twinning programme, “soil contamination countermeasures” has been started since 2008, in order to disseminate activities for removing contamination from soil. Problem is that different priority among relevant actors, so stakeholder coordination for generating and sharing up-to date, and balanced/ representative input are future challenge. From the view of Thailand, on the other hand, Mr. Warapong Tugittiplakorn, Environmental Expert, Environmental Quality and Laboratory Division, introduced “Soil Contamination in Thailand.” Also he addressed that some merits through Twinning workshop. In the workshop, comparison of some approaches, and understanding situation in Thailand can be implemented with participants from Thailand and Japan. Therefore he believed the strengthen of soil contamination countermeasures act in Thailand.

Lastly, Mr. Peter King and Mr. Masanori Kobayashi gave closing remarks in this regional workshop.

ISAP Open Session Programme

► Day 1 12 July 2010

9:30-12:15

Plenary: Opening Session

Opening Remarks

Hironori Hamanaka, Chair of the Board of Directors, IGES

Guest Remarks

Shigefumi Matsuzawa, Governor of Kanagawa Prefecture

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

Keynote Session

“Long-Term Perspectives to Build a Low Carbon Asia-Pacific”

[Moderator] Ryokichi Hirono, Professor Emeritus, Seikei University

Bindu N. Lohani, Vice-President (Finance and Administration), Asian Development Bank (ADB)

Said Irandoust, President, Asian Institute of Technology (AIT)

Hoesung Lee, Vice-Chair, Intergovernmental Panel on Climate Change (IPCC)

Panel Discussion

“Establishing an Asian-style Cooperative System towards a Low-Carbon Asia-Pacific 2020”

[Moderator] Shuzo Nishioka, Senior Research Advisor, IGES

Young-Woo Park, Regional Director, UNEP Regional Office for Asia and the Pacific

Nay Htun, Professor, State University of New York, Stony Brook

Monthip Sriratana Tabucanon, Principal Inspector General, Ministry of Natural Resources and Environment, Thailand

Yasushi Fukuizumi, Deputy General Manager, Sustainable Energy & Environment Strategic Planning Department, Mitsubishi Heavy Industries, Ltd.

12:15-13:15

Lunch Break

Sessions on Individual Themes

13:15-14:15

Asia-Pacific Perspectives on Future Climate Regime

[Moderator] Takejiro Sueyoshi, Special Advisor, UNEP Finance Initiative and the Principles for Responsible Investment in the Asia Pacific Region

Fei Teng, Associate Professor, Tsinghua University

Rizaldi Boer, Professor, Bogor University of Agriculture

Jusen Asuka, Director, Climate Change Group, IGES

Yuji Mizuno, Director, Market Mechanism Group, IGES

14:15-14:30

Break

14:30-15:30

Accounting for Co-benefits: Towards stronger climate change, development, and air pollution policies in Asia

[Moderator] Charmine Koda, Journalist

Richard Mills, Convener, Global Atmospheric Pollution Forum

Cornie Huizenga, Joint Convener, Partnership on Sustainable Low Carbon Transport Initiative (SLoCat)

May Ajero, Air Quality Program Manager, Clean Air Initiative for Asian Cities (CAI-Asia) Center

Kotaro Kawamata, Environmental Specialist, Environment and Safeguards Division, Regional and Sustainable Development Department, Asian Development Bank (ADB)

Katsunori Suzuki, Professor, Frontier Science Organization, Kanazawa University

Eric Zusman, Policy Researcher, Climate Change Group, IGES

15:30-15:45

Coffee Break

15:45-16:45

REDD+: Progress, Challenges and Ways Forward - from the Local to the Global

[Moderator] Zakri Abdul Hamid, Director, the Centre for Global Sustainability Studies, Universiti Sains Malaysia; Science Advisor, the Government of Malaysia

Amanda Bradley, Country Director, Community Forestry Programme Pact Cambodia

Lesley McCulloch, Researcher, Eye on Aceh, Indonesia

Gewa Gamoga, Officer, REDD & Climate Change Branch, Forest Policy Planning Directorate, Papua New Guinea

Henry Scheyvens, Director, Natural Resources Management Group, IGES

16:45-17:00

Break

17:00-18:00

Mainstreaming Adaptation: Linking research and actions on the ground

[Moderator] Srinivasan Ancha, Senior Climate Change Specialist, Asian Development Bank (ADB)

Sreeja Nair, Associate Fellow, Centre for Global Environment Research, Earth Science and Climate Change Division, The Energy and Resources Institute (TERI)

Khlok Vichet Ratha, Climate Change Department, Ministry of Environment, Cambodia

Kazuya Yasuhara, Professor Emeritus, Ibaraki University

Eklabya Sharma, Programme Manager/Ecologist, International Centre for Integrated Mountain Development (ICIMOD)

Mahesh Pradhan, Regional Environmental Affairs Officer, UNEP Regional Office for Asia and the Pacific

Daisuke Sano, Deputy Director, Natural Resources Management Group, IGES

Prabhakar Sivapuram, Policy Researcher, Adaption Team, Natural Resources Management Group, IGES

Md. Rabi Uzzaman, Research Officer, Bangladesh Centre for Advanced Studies (BCAS)

► Day 2 13 July 2010

9:30-10:15

Plenary: White Paper III Launch

Opening Remarks

Hironori Hamanaka, Chair of the Board of Directors, IGES

Keynote Discussion

“Moving Away from the Mass-Production and Mass-Consumption Economy: An alternative development model in Asia?”

[Moderator] Hideyuki Mori, President, IGES

Saburo Kato, Chairperson, Japan Association of Environment and Society for the 21st Century (JAES21)

Peter King, Representative, IGES Bangkok Office; Senior Policy Advisor, IGES

Sessions on Individual Themes

10:15-11:45

Transitioning to SCP: Opportunities for Asian prosperity on a finite planet

[Moderator] Anthony Chiu, President, Asia Pacific Round Table for Sustainable Consumption and Production

Maria Jolanta Welfens, Project Coordinator, Wuppertal Institute for Climate, Environment and Energy

Kohmei Halada, Managing Director, National Institute for Materials Science (NIMS)

Patrick Schroeder, International Advisor, China Association for NGO Cooperation (CANGO)

Satoshi Kojima, Director, Economy and Environment Group, IGES

Magnus Bengtsson, Director, Sustainable Consumption and Production Group, IGES

11:45-12:45

Lunch Break

Special Lunch Session

12:00-13:30

Key Messages from the IGES White Paper III:

Current responses and the future direction of SCP in the Asia-Pacific region

The IGES White Paper III is a unique publication for its breadth of coverage and depth of analysis using original IGES research findings and case studies, and the focus on practical, policy-oriented key messages relevant to the Asia-Pacific region. The purpose of this session was for the authors to reflect on these key messages of the White Paper and to allow the audience to become familiar with the core concepts and challenges for SCP in the region through discussion between the authors and during the Q&A session.



【 Moderator 】 Hideyuki Mori, President, IGES

Yasuhiko Hotta, Deputy Director, Sustainable Consumption and Production Group, IGES
 Kimihiko Hyakumura, Policy Researcher, Natural Resources Management Group, IGES
 Satoshi Kojima, Director, Economy and Environment Group, IGES

12:45-13:45

Coping Strategies for Groundwater Under Threat

【 Moderator 】 Akio Morishima, Special Research Advisor, IGES

Chayawee Wangcharoenrung, Environmental Officer, Water Quality Management Bureau, Pollution Control Department, Thailand

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

Devesh Sharma, Assistant Professor, TERI University

Tomochika Tokunaga, Associate Professor, Department of Environment Systems, School of Frontier Sciences, University of Tokyo (as a representative of the Japanese Association of Groundwater Hydrology)

Yatsuka Kataoka, Director, Freshwater Sub-group, IGES

13:45-14:00

Break

14:00-15:00

The Challenges and Opportunities for Improving Corporate Environmental Management in Developing Asia

【 Moderator 】 Masanobu Ishikawa, Professor, Graduate School of Economics, Kobe University

Lei Shi, Associate Professor, Department of Environmental Science and Engineering, Tsinghua University

Prosanto Pal, Senior Fellow, Industrial Energy Efficiency Division, The Energy and Resources Institute (TERI)

Suehiro Hanada, Manager, Industrial Policy Division, Office for Environmental Model City Promotion, City of Kitakyushu

Xianbing Liu, Senior Policy Researcher, IGES Kansai Research Centre

Yuki Shiga, Researcher, IGES Kansai Research Centre

15:00-15:15

Coffee Break

15:15-16:15

Can Biofuels Contribute to Building a Sustainable Society?

[Moderator] Kazuhiko Takeuchi, Vice Rector, United Nations University (UNU) ; Deputy Executive Director, Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Zakri Abdul Hamid, Director, the Centre for Global Sustainability Studies at Universiti Sains Malaysia; Science Advisor, the Government of Malaysia

Hirotaaka Matsuda, Project Lecturer, Transdisciplinary Initiative for Global Sustainability (TIGS), Integrated Research System for Sustainability Science (IR3S), University of Tokyo

Osamu Saito, Assistant Professor, Waseda Institute for Advanced Study, Waseda University

Masahiro Matsuura, Associate Professor, Graduate School of Public Policy, University of Tokyo

Mark Elder, Principal Researcher and Director, Governance and Capacity Group, IGES

16:15-16:30

Break

16:30-17:30

Harnessing Biodiversity: Strategic policies and concerted actions

[Moderator] Charmine Koda, Journalist

Zakri Abdul Hamid, Director, the Centre for Global Sustainability Studies at Universiti Sains Malaysia; Science Advisor, the Government of Malaysia

Kazuhiko Takeuchi, Vice Rector, United Nations University (UNU) ; Deputy Executive Director, Integrated Research System for Sustainability Science (IR3S)

Tsunao Watanabe, Deputy Director-general, Nature Conservation Bureau, Ministry of the Environment, Japan

Masanori Kobayashi, Senior Coordinator, Programme Management Office, IGES

17:30-18:00

Plenary: Closing Session

Summing up ISAP2010 with Selected Moderators

Charmine Koda, Journalist

Takejiro Sueyoshi, Special Advisor, UNEP Finance Initiative and the Principles for Responsible Investment in the Asia Pacific Region

Ryokichi Hirono, Professor Emeritus, Seikei University

Akio Morishima, Special Research Advisor, IGES

Closing Remarks

Hironori Hamanaka, Chair of the Board of Directors, IGES

Exhibition and Poster Display

Under the theme of low-carbon development, ISAP2010 held an exhibition and poster display on the main floor with posters of the latest research activities of IGES as well as attractive displays from three companies, two local governments and relevant organisations, including some electronic vehicles from Nissan and Mitsubishi.



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