Meeting Report

Regional Workshop on "Mainstreaming Ecosystem Services Approaches into Development: Application of Economic Valuation for Designing Innovative Response Policies"

6 – 9 February, 2012
The Renaissance Bangkok Ratchaprasong Hotel, Bangkok, Thailand

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Introduction

There has been significant enhancement in recent years in the knowledge-base on ecosystem services and its importance for human well-being and development processes, as exemplified by some key global initiatives such as the Millennium Ecosystem Assessment in 2005, the Green Economy Initiative and the Economics of Ecosystems and Biodiversity (TEEB) in 2010 to name a few. The ongoing process on the establishment of an intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES) is another example of efforts made to strengthen the knowledge base on ecosystem services and their contribution to policy-making processes.

On the other hand, limited success has been achieved so far in mainstreaming ecosystem services approaches into development planning processes at national level, and ensuring effective on the ground management practices that ensure the delivery of ecosystem services. Furthermore, there is a growing recognition of the need to develop and apply tools and methodologies that take into account the strong links between poverty alleviation and ecosystem management approaches.

There is compelling need to further bring together experts and policy-makers involved in economics, science, finance and policy development to identify and implement practical actions to address unsustainable consumption of natural resources. More attention is needed to concentrate efforts at the highest policy and decision-making level and address capacities at technical level to ensure a more effective approach in disseminating TEEB findings and experiences relating to other key initiatives, and promoting sustainable financing mechanisms such as payments for ecosystem services (PES) schemes and other innovative response policies and initiatives.

It is within this context that the United Nations Environment Programme (UNEP) and the ASEAN Centre for Biodiversity (ACB), in collaboration with the British Foreign and Commonwealth Office and with funding support from the European Commission, co-organized the “Regional Workshop on Mainstreaming Ecosystem Services Approaches into Development: Application of Economic Valuation for Designing Innovative Response Policies”. The workshop was held on 6-9 February 2012 in Bangkok, Thailand.

The workshop aimed at enhancing capacity of policy-makers and technical experts in applying methodologies that can assist them in mainstreaming ecosystem management approaches into poverty alleviation and development policies, with specific focus on the following four main topics:

- Policy context of economic valuation ecosystem services;

- Methodologies, data needs and applicability of economic valuation of ecosystem services;
- Successful cases of economic valuation of ecosystem services from Asia, particularly South Asia and Southeast Asia; and
- Use of economic value in innovative response policies and tools for management of ecosystem services (e.g. PES, wetland banking and biodiversity offsets).

Experts who had been involved in some of the key ongoing initiatives being implemented in the region, such as the sub-global assessments (SGAs) follow-up programme, UNDP-UNEP Poverty-Environment Initiative (PEI), GEF-funded project for ecosystem services (ProEcoServ) and the TEEB follow-up initiative were invited to attend the workshop. The list of participants as well as the agenda of the workshop are attached to this report (see Annex I and II).

Objectives

The specific objectives of the workshop were:

- To enhance knowledge and skills on the application of economic valuation and innovative response policies and tools by using the information on economic values of ecosystem services;
- To allow networking among experts, policy-makers and practitioners who participate in the workshop to share their experiences and promote their partnership development.

Summary of the workshop

The meeting was attended by approximately seventy participants, including policy-makers from South and Southeast Asian countries, practitioners and technical experts. The meeting was opened by Dr. Dechen Tsering, Deputy Regional Director of UNEP/ROAP, followed by welcome remarks by Dr. Rodrigo U. Fuentes, Executive Director of ACB.

An introductory presentation was made by Dr. Pushpam Kumar who highlighted two key challenges faced in efforts to mainstream ecosystem service-considerations into development planning processes. The first challenge relates to the fact that currently, growth accounting does not fully incorporate ecosystem services, leading to erroneous sense of economic gains and losses. The second challenge relates to negative effects of various economic activities on the flow of

ecosystem services and social welfare, such as subsidies that cause overfishing, export that causes loss of biodiversity and land use change, and devaluation of exchange rate causing soil erosion. He emphasized the need for providing strong rationale for investing funds in conservation measures, such as through extended cost benefit analysis, designing cost effective response policies such as PES, and altering the set of options available to the public to balance development and conservation such as through market based instruments (MBIs). There is also a need to build on the general consensus reached among policy-makers and experts, that the valuation of ecosystems and biodiversity provides opportunities to develop innovative policy response, investing in ecological infrastructure and natural assets helps climate change mitigation and adaptation, and there is opportunity to move towards ensuring efficiency and fairness in a new green economy, both internationally and nationally. A summary of the sessions is provided in the following sections.

Training Workshop on "Mainstreaming Ecosystem Services Approaches into Development: Application of Economic Valuation for Designing Innovative Response Policies"

Methodologies, data needs and applicability of economic valuation of ecosystem services

The first part of the training workshop focused on various methodologies, data needs and applicability of economic valuation of ecosystem services. In the presentation entitled, "Use of economic valuation and design of policy instruments", Dr. Mike Christie from the Institute of Biological, Environmental and Rural Sciences of Aberystwyth University discussed about the concept of economic value, valuation tools and how to measure and catch the benefits from ecosystem services and natural resources management. He provided an overview of TEEB, the TEEB conceptual framework, and key findings from TEEB, with a focus on the concept of ecosystem service assessments and their applications. He then focused on introducing the concepts of value, building on the Millennium Ecosystem Assessment (2005) conceptual framework. He noted that conventional economic markets often failed to emerge for many environmental goods, and to fill this gap, environmental economists have developed a range of innovative non-market valuation methods to measure the value of environmental goods, where this value might include all or some components of total economic value (TEV). The links between the different types of ecosystem services with the components of TEV were also highlighted. The presentation also focused on approaches to valuing biodiversity and ecosystem services, including market and cost-based approaches, revealed preference, stated preference methods and value transfer.

Dr. Salman Hussain from the Scottish Agricultural College (SAC) delivered a presentation entitled, “Application of economic valuation of ecosystem services in future projection on cost of action vs inaction”. He discussed the application of economic valuation of ecosystem services in future projection on cost of action vs inaction. He introduced the biophysical policy model using GLOBIO3 model, which was undertaken by Netherlands Environmental Assessment Agency (PBL) to assess eight options to counteract terrestrial biodiversity loss. The presentation focused on examples where the economic estimates were developed based on the benefits of policy action versus policy inaction, and contributed to the marine protected areas policy. He also highlighted how the ecosystem approach might be applied in other policy contexts. Further, an example of the project which applied the economic valuation appraisal as the investment in agricultural knowledge, science and technology (AKST) was also introduced.

In the presentation entitled, “Valuation of coastal wetlands”, Dr. Paulo A.L.D. Nunes from CIESM Programme in Marine Economics, Mediterranean Science Commission, introduced methodologies to define and value ecosystem services provided by coastal wetlands and how the results could be used for developing conservation strategies. He discussed a concept of ‘Hybrid Economic Valuation Approach’ which will help to design an innovative response policy. The hybrid economic valuation approach is critical, where market price analysis is used for provisioning services, avoided damage costs approach is used for regulating services, and stated choice approaches are used for measuring cultural services. The application of spatial analysis using remote sensing and Geographic Information Systems (GIS) tools plays a vital role to preserve coastal wetlands by integrating biological, physical and social information. The case study in Southern Sinaloa, Mexico was introduced, where remote sensing and GIS were used to detect and classify wetlands, and to spatially characterize the distribution of ecosystem services and values, as estimated with the value transfer method. The findings from this research will be used to identify scenarios of land use and cover changes, characterize the effect of those changes on wetlands, and assess their possible economic impact.

Dr. Lalit Kumar from Delhi University presented a case study on “Valuation of coastal ecosystem services”, with a focus on the coral reefs in Gulf of Kachchh, Gujarat, India. He discussed trade-offs between ecosystem services, conservation and poverty reduction of local people. Coral reefs are main sources of income for local people because they depend their lives on it. Drivers of change to ecosystem services such as industrial development in the region, infrastructure development, over fishing and climate change are key threats to coral reefs. He presented the results of the study on economic values of coral reefs, where benefits of coral reefs were highlighted, by using different valuation methods such as financial analysis approach, expenditure and preventative pattern and benefit transfer method. The study focused on five services of the coral reefs, including fisheries, recreation and

tourism, protection of coastal aquifers (against salinity ingression), protection of coastal lands (against erosion) and biodiversity.

Dr. Ali Dehlavi from the World Wide Fund for Nature (WWF) Pakistan presented on "Valuation of wetland ecosystem services", with a focus on the case study in Keenjihar Lake, Pakistan's largest freshwater lake and a Ramsar site. The presentation focused on micro-analysis issues, best practices, and policy uptake of a USD 3,436 per hectare estimate of the lake's recreational value intended for assessing returns on conservation investments. The total cost method (TCM) was used in the study to estimate values (consumer surplus per visit) and the opportunity cost of time associated with recreational visits to Keenjihar using charter transportation. He highlighted the importance of accurate measurement of costs by applying a separate model to a subset of visitors using charter transportation (as is common across Asia) to analyze impacts on welfare measurement from varying assumptions on visitors' outset origins. He also discussed the policy mainstreaming process through the use of scenario analysis, national guidelines, capacity building and institutional process.

After the series of presentations, participants were invited to provide their views and join discussions focused on methodologies, data needs and applicability of economic valuation of ecosystem services, based on other cases from the region that they were aware of. Some of the key issues highlighted through the follow-up discussions, as well as presentations include:

- How to create/identify value of the matter for which the market traditionally does not exist (public goods, externality and property rights)
- Comparing cost of doing nothing with potential costs & benefits of different actions
- How to downscale the "large numbers" (from global to national analyses)
- Clarity and confidence of data (sample size, etc.)
- Valuation by different ecosystem service types
- Matching valuation theme with different methodologies, and/or developing hybrid valuation methodologies
- Cost/cost-effectiveness of valuation

Case study on economic valuation of ecosystem services

On the second day, Dr. Mike Christie from Aberystwyth University facilitated a training session focused on economic valuation of ecosystem services. It was an intensive training session on the theory and practice of (i) valuation methods and (ii) national and global ecosystem assessments.

The morning session focused on valuation methods. The methods were discussed in detail included:

- The travel cost method
- Contingent valuation
- Choice experiments

For each of these methods, the theory was explained and then practical case studies examples were used to illustrate how one might design, administer and analyse the methods in practice. Next, it was noted that many of the valuation methods available had been developed for use in a developed country context and that some of the approaches might need to be modified/refined to work effectively in a developing country context (particularly in the poorer, more remote areas). The findings of a Defra-funded review of valuation in developing countries (Christie et al., 2008) were presented, along with a case study of valuing the rainforest in the Solomon islands (Kenter, 2011)

Following the presentations, the session was opened up for discussion. Participants were asked to discuss:

- What ecosystems/services they had evaluated?
- Which economic methods they had use?
- What issues/problems they had encounter?
- What lessons they had learn?

Next, participants were asked to consider whether valuation approaches are applicable to Asia. To aid this discussion, participates were split into four groups and asked to discuss:

- Does valuation work in Asia?
    - What works?
    - What doesn't?
- How could valuation be improved/refined for application in Asia?
    - What are the key limitations/knowledge gaps/issues for valuation in Asia?
    - How might these be addressed?
- What are the future research/capacity building needs?

The discussions highlighted that although a number of high quality valuation studies had been undertaken in Asia, there were still many gaps in terms of coverage of both ecosystems and ecosystem services. Further, there was an uneven spread of studies across the various Asia countries. There were several examples of innovative approaches to address local issues for implementing

valuation in Asia. Key barriers to valuation included the lack of expertise/capacity to undertake such studies, as well as budget constraints.

The afternoon session focused on national and global ecosystem services assessments, with presentations on the TEEB report, and then the UK National Ecosystem Assessment. Following the presentations, participants were again split into four groups and asked to consider how they might undertake an ecosystem assessment of an Asian biome following the framework used in the UK NEA (2011). Specifically, they were asked to:

- Identify impacts (high, med, low) and trends of drivers of change (e.g. climate change, demographics, land use etc) on their selected biome.
- Identify impacts (high, med, low) and trends of drivers of change (e.g. climate change, demographics, land use etc) on the capacity of biome to deliver ecosystem services.
- Discuss the extent to which data are available for the above assessment + what are the knowledge gaps.

The groups discussed the impacts and trends. However, they also recognised that there were significant gaps in both the ecological and economic evidence base for undertaken a rigorous scientific assessment. While recognizing the usefulness of the exercises, participants also noted that these types of exercises are complex and would require further assistance.

Use of economic value in innovative response policies and tools for management of ecosystem services

The session on the third day focused on the use of economic value in innovative response policies and tools for management of ecosystem services.

Firstly, Ms. Makiko Yashiro presented updates on the SGA Network. SGAs are designed to meet needs of decision-makers at various scales, strengthen the global findings with on-the-ground data, and strengthen the local findings with global perspectives, data, and models. Building on 33 SGAs and associated assessments that were approved under the Millennium Ecosystem Assessment of 2005, the SGA follow-up programme was established by UNEP, in collaboration with a consortium of partners to provide support to SGAs. Currently, the secretariat of the SGA Network is hosted jointly by the UNEP-WCMC and The Cropper Foundation, which provides support for building the capacity of ecosystem assessment practitioners. The workshop in Bangkok was organized as part of the capacity building programme of the SGA Network. In relation to the global initiatives focused on ecosystem assessments, Ms. Yashiro also provided an overview of the process related to the establishment of IPBES, particularly, the

preparation for the second session of the plenary meeting on IPBES to be held in Panama on 16-21st April, where the platform was to be fully operationalized.

Dr. Salman Hussain from SAC delivered a presentation entitled, “The UK Marine Bill - Marine Nature Conservation Proposals - valuing the benefits”. It focused on the initiative to estimate the non-market benefits derived by UK residents from the conservation of ecosystem goods and services resulting from implementation of proposed Marine Conservation Zones under the UK Marine and Coastal Access Bill. The results were used to compare benefits to projected policy costs. The study showed that welfare improvements from the Marine Bill significantly outweigh projected regulatory costs. Dr. Hussain also introduced the initiative called, the Options for Delivering Ecosystem-based Marine Management (ODEMM), which aims at developing a set of costed ecosystem management options that would deliver the objectives of the Marine Strategy Framework Directive, the Habitats Directive, the European Commission Blue Book and the Guidelines for the Integrated Approach to Maritime Policy.

Dr. Priya Syamsundar from the South Asian Network for Development and Environmental Economics (SANDEE) delivered a presentation entitled, “Economic valuation and livelihoods: experiences in Asia”. The presentation focused on lessons from South Asia in undertaking environmental valuation. She provided an overview of different environmental problems in South Asia and highlighted how economic valuation could be used to assess these problems. Various challenges related to the valuation of ecosystem services were mentioned in her presentation, such as the weakness of inter-disciplinary researches and limited funding available for the valuation of non-market goods and services. The presentation also touched upon issues such as production externalities and their implications in agrarian settings, dilemmas in accounting for shared ecological and social systems, and pollution, health and productivity.

Dr. Roldan Muradian from the Centre for International Development Studies Nijmegen, Radboud University gave a presentation entitled, “PES: Challenges and limitations”. Dr. Muradian mentioned that the adoption of market-oriented policy approaches such as PES has been facilitated by: the compartmentalization of services, which has allowed their commoditization; and the need to create linkages between various levels and stakeholders (with differing interests) and to induce changes in property/use rights among the users of the resource base. He said that PES should be considered as incentives for collective action and the reconciliation of environmental protection and rural development. In the second part of his presentation, Dr. Muradin provided analytical insights from the literature on collective action and economic incentives, and discussed in which domains of application PES are more appropriate as policy instruments. He emphasized the importance for considering: how a particular arrangement fits the local ecological conditions; how rules are developed and adapted across time; and how social

actors perceive these arrangements in terms of legitimacy and equity.

The above presentations were followed by panel discussions facilitated by Dr. Dechen Tsering, Deputy Regional Director of UNEP/ROAP, where panelists, including Dr. Golam Rasul, International Centre for Integrated Mountain Development (ICIMOD), Dr. Enamul Haque, United International University, and Dr. Surender Kumar, Delhi University, introduced various cases on the use of economic value in innovative response policies and tools in the region.

Dr. Rasul introduced examples from the Greater Himalayan Region, also known as the 'Hindu Kush-Himalaya (HKH)', which stretches across eight countries: Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal, India, and Pakistan. The Himalayan ecosystems are unique with critical role in protecting the environment and providing livelihoods for a larger part of Asia and even to the rest of the world. It also has huge stock of water and is the source of hundreds of rivers of Asia, and also the storehouse of biological diversity. In terms of the challenges faced in the region in undertaking economic valuation and introducing innovative response policies, Dr. Rasul highlighted issues such as limited recognition of ecosystem services in economic decision-making, development planning and resource allocation, due partly to the fact that ecosystem services are currently not captured in GDP, inadequate or missing market for many of the ecosystem services, institutional failures that lead to insufficient compensation for ecosystem services, and knowledge gaps particularly on economic value of regulating and supporting services. As a way forward, Dr. Rasul emphasized that there is a need to improve communication to decision makers, engage diverse stakeholders, integrate valuation into project and program design including EIA, and to develop, test and disseminate best practices for business investment in ecosystem management.

Dr. Haque introduced an overview of the use of economic values in innovative response policies and tools in the region. Particularly, he focused on trans-boundary water issues, such as trans-boundary watershed management and pollution management. In order for international initiatives to be successful, there is a need for strong political will of the government, which depends on mutual understanding of benefits of cooperation, trade-off between benefits and costs within a nation, mutual dependence on use of common resources, as well as the current state of resource and regional stakes within nations. He introduced cases in Bangladesh and India, where disputes are common in trans-boundary water management. However, as of today, there is not clear scientific study that has quantified the adverse impacts and established the linkages between negative effects experienced in downstream and level of upstream water withdrawal. Economic valuation should account for regional interdependence for water use, institutional arrangements within a nation, property rights in a nation, global conventions on water uses, and changes in macro economic outlook due to

resource mismanagement.

Dr. Surender Kumar from the University of Delhi presented issues and challenges involved in the valuation of ecosystem services provided by forest biome. He particularly highlighted the examples on the use of economic value in innovative response policies and tools using various case studies. Forest biome provides provisioning, regulating and cultural ecosystem services. Several valuation methods can be applied to estimate the monetary value attached to each forest ecosystem services. By using the notion of TEV, and depending on the nature of the good being valued, the best available valuation method to be employed for the monetary estimation of each ecosystem services can be identified. In terms of challenges and lessons learned, Dr. Kumar highlighted issues such as double counting (e.g., health benefits and water quality and quantity benefits are counted separately of hydrological services), disconnect between valuation of ecosystem services and policy options in developing countries, an underestimate of the total social cost that would result from the business-as-usual scenario. He mentioned that future studies should combine valuation and program evaluation, so that valuation estimates are based on the observed impacts of real-world programs and policies.

After the above presentations of various case examples and experiences from the region, a panel discussion was held which focused on lessons learned and next steps on innovative policy responses. The session was facilitated by Dr. Pushpam Kumar, Chief of Ecosystem Services Economics Unit of UNEP/DEPI, involving the following panelists: Dr. Roldan Muradian, Radboud University, Dr. Mike Christie, Aberystwyth University, Dr. Jianchu Xu, International Center for Research in Agroforestry (ICRAF), Dr. Luke Brander, Hong Kong University of Science and Technology, and Dr. Salman Hussain from SAC.

Some of the key messages highlighted include the following: listening to the key stakeholder is vital aspect in order to develop policies that work well; sufficient understanding on the demand is critical and should be considered during policy design processes; cost effectiveness of response policies is critical, while recognizing also a long-term benefit of such policies; various stakeholders, such as governments, universities, community organizations and NGOs play an important role in initiating the response policies, while the willingness of government is critical in initiating the response policies.

Regional Policy Dialogue on the Economics of Ecosystems and Biodiversity: Transforming Policies into Actions

The Regional Policy Dialogue was opened / welcomed by ACB's Executive Director Rodrigo Fuentes, Regional Director of UNEP-ROAP Mr. Young Woo Park, Secretary General of Thailand's Office of Natural Resources and Environmental Policy and Planning Dr. Supat Wangwongwatana, and H. E. Ambassador Asif Ahmad of the British Embassy in Thailand.

Dr. Pushpam Kumar, Chief of Ecosystem Services Economics Unit of UNEP/DEPI, provided the Thematic Remarks for the day. He briefly gave a presentation on "Integrating the economics of ecosystem services into development planning". He highlighted four key challenges: (1) the productive base of the economy continues to be eroded without being reported and accounted; (2) to justify efficient allocation of competing resources; (3) the changing context of science-policy interface; and (4) providing the economics of ecosystem services for poverty alleviation. The UNEP-ESE Unit has been doing work on ecosystem services, such as the project on ecosystem services (ProEcoServ), developing tools for operationalizing economics of ecosystem services, and making the science and economics of ecosystem services usable, useful and accessible for decision makers, such as putting out the ESE Working paper Series. The key messages include valuing ecosystems and biodiversity which become opportunities for policy response; investing in ecological infrastructure / natural assets help in climate change mitigation/adaptation; informed choices result in efficiency, cost effectiveness and inclusive assessment; and towards efficiency and fairness in a new green economy, there are opportunities for action, at international and national level.

Director Rodrigo Fuentes gave a presentation on Biodiversity Conservation in ASEAN: Regional initiatives and the challenges of connecting to development. He presented the key results of the ASEAN Biodiversity Outlook, emphasizing on the drivers of biodiversity loss, and highlighting that climate change is a dominant direct driver of biodiversity loss. He provided the ASEAN response and imperatives for action towards these drivers, such as the ASEAN Heritage Parks, Biodiversity Corridor Initiative in the Greater Mekong Areas (GMS), and the Coral Triangle Initiative. Imperatives for action included targeting efforts to critical areas and ecosystems, mainstreaming biodiversity in the national development processes, connecting biodiversity management with climate change efforts, and recognizing the links between ecosystems degradation and persistence of rural poverty, among others.

Mr. John Pearson, Head of the Southeast Asia Climate Change Network at the British High Commission in Singapore discussed the UK National Ecosystem Assessment – Putting the Value of Nature into policy and decisions. Mr. Pearson

started his presentation by mentioning that the UK was the first country in the world to undertake an assessment of the value of nature at a very significant depth and scale.The NEA took place from 2009 to 2011, costing around £1.3M and involved around 500 natural scientists, economists, social scientists and policy makers. It was designed to produce the first assessment of the benefits that the UK natural environment provides to society and the economy, and undertaken to promote interdisciplinary working between diverse academics and the policy community, and to raise awareness of the value of nature to very many parts of the economy. The report looks back 50 years to examine how the ecosystems have changed in the UK, and then forward to another 50 years to see how things might change in the future. A framework for valuing ecosystem services in the UK was developed, with only the final goods deriving from ecosystems valued to avoid double counting. The report looked at the role that Biodiversity plays in delivering different ecosystem services, and the level of understanding of this relationship. The report also constructs six future scenarios in 2060, looking at two levels of climate change in each, designed to test different current policy uncertainties surrounding. Mr. Pearson added that the UK NEA was followed up by a Government White Paper (The Natural Choice), a statement of policy on the Natural Environment. The white paper sets out 92 commitments and actions, with the ambition that "we should be the first generation to leave the natural environment in a better state than we found it." A follow-up project has begun, exploring more of the economic and social value of ecosystem services, and how these can be incorporated together into decisions. The report is targeted to be out by April 2014.

Mr. Luke Brander of the Hong Kong University of Science and Technology presented Scaling-up Ecosystem Service Values for National Assessments. Mr. Brander cited that the GDP is a flawed indicator of human welfare, as it only includes marketed services. Ecosystem services are largely not traded in markets, thus, are therefore ignored in national accounts and public decision making. The 'addiction to GDP growth" distorts decision making. Mr. Brander emphasized that green national accounting should include ecosystem services values. The demand for national ecosystem service assessments is best reflected in the CBD's Aichi Target 2 – By 2020 biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting and reporting systems. Ecosystem service value estimates are generally for small scale ecosystem sites/parcels/patches. National assessments require ecosystem service values for all ecosystems within a country. Primary valuation studies are not feasible because it is expensive and takes time. As an alternative, Mr. Brander suggested that the transfer and "scaling-up" of existing value estimates would be determined instead. Value transfer is estimating the value of a 'policy site' using existing value information for a 'study site'. The differences in study and policy site characteristics and context (including socio-economic context) need to be accounted for. Scaling-up is value transfer across a larger geographic scale. The method for scaling up

values includes the meta-analysis of ecosystem service values; estimating the value function (site and context variables); obtaining the policy site data (site and context); and estimating site-specific values and aggregate. An example of the scaling up estimates was applied for wetland regulating services. Mr. Brander concluded by mentioningthat in scaling up values to large geographic scale, value transfer should be site specific, and the effects of scale, scarcity, population and income should be taken into account. The methodology is limited, however, in terms of allowing a limited number of studies for some regions, the reliability of primary valuation estimates, and having a high uncertainty. The national assessment of ecosystem service values and marginal changes under policy scenarios are definite uses of scaling up ecosystem service values in public decision making.

Mr. Asad Naqvi of the TEEB Secretariat hosted by UNEP in Geneva presented the Phase II of TEEB. He cited as a starting point that the global GDP reached US $58.22 trillion in 2009, and yet almost 80% of humanity continues to live on less than US $10/day. The poorest 40% of the world's population produce only 5 percent of global income. Mr. Naqvi asserted that the threat to the planet and inequality go hand in hand. Natural capital is essential to wealth creation, accounting for a quarter of wealth creation in the poorest countries, while such a share is only 2% in the world's richest countries. The GDP of the poor is most seriously impacted by ecosystem losses. Mr. Naqvi presented the different phases of the TEEB initiative. The first phase of TEEB was launched in response to a proposal by the G8+5 Environment Ministers (Potsdam, Germany 2007) to develop a global study on the economics of biodiversity loss. A TEEB Interim Report, which provided strong evidence of significant economic losses due to ecosystem degradation, was presented at the High-Level Segment of the Ninth Conference of the Parties to the Convention on Biological Diversity (CBD COP-9) in Bonn, Germany, in May 2008. The TEEB study follows a tiered approach in analyzing and structuring valuation and ultimately making nature economically visible: (1) recognizing value (a feature of all human societies and communities); (2) demonstrating value (in economic terms, to support decision-making); and (3) capturing value (introduce mechanisms that incorporate the values of ecosystems into decision making). Mr. Naqvi mentioned that the TEEB initiative has been very successful in raising the interest of policymakers in biodiversity and ecosystem valuation. Support for the TEEB findings and for building on the TEEB analysis at the national-level has been highlighted in a number of policy platforms and government decisions, such as in the G20 Leaders Statement from the Seoul Summit in November 2010 and the CBD COP 10 decisions. TEEB has also been widely referenced and discussed in the media as a result of TEEB outreach and communications. Over 1,100 news articles in 65 countries have referenced TEEB, as well as more than 1,300 websites and 1800 social media fora. Mr. Naqvi noted that one of the strengths of the TEEB initiative has been the development of a strong network of economists and policymakers. Over 500 professionals from 55

countries participated in the development of the various TEEB reports and over the last two years the TEEB initiative and its outcomes were presented at over 200 international, regional and national events. The TEEB Advisory Board agreed to extend the TEEB initiative into a Phase III, focusing on three areas: policy, business and communications/outreach. The objective of Phase III is to mainstream TEEB beyond the biodiversity policy sphere while ensuring scientific credibility. Mr. Naqvi ended his presenting the four main components of the international TEEB follow-up work: (1) Strengthening of the TEEB network of experts; (2) Promotion of outreach and communications; (3) Facilitating national studies; and (4) Supporting sectoral studies.

A panel discussion on experiences from the region on mainstreaming ecosystem services ensued with Dr. Salman Hussain of the Scottish Agricultural College in Edinburgh acting as facilitator. Panelists include Ms. Kim Thi Thuy Ngoc of the ProEcoServ Project in Viet Nam, and Ms. Souphith Darachanthara from Lao PDR implementing the Poverty-Environment Initiative Project. Among the key messages discussed include: the concept of valuing ecosystem services and biodiversity is difficult to explain to policy makers, thus, the challenge is to make them understand; information dissemination and transforming policy into action is very important. The private sector and grassroots level stakeholders also need to understand the importance of mainstreaming ecosystem services and biodiversity: political will should be evident to address environmental issues. The synergy between the finance and environment sectors is also essential and that there is a need to balance development and environmental priorities.

Dr. Young-Woo Park of UNEP/ROAP chaired the next session. Ms. Hitomi Rankine, Environmental Affairs Officer of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), gave a presentation on Investing in Natural Capital: Promoting Green Growth and Green Economy. Ms. Rankine commenced her presentation by pointing out that based on statistics, poverty reduction is jeopardized, with around 42M likely to have fallen into poverty in 2011. There are also signs of resource constraints, including the close-to-exhaustion stage of metals like iron, cobalt, platinum and palladium; the production peak of oil has already passed in 2006; and 60% of ecosystem services have already been degraded or used unsustainably. In Asia Pacific alone, more than 3 times of resources are being utilized to produce USD1 of GDP compared to the rest of the world. This translates into 60% of global resource being used to produce only 30% of global GDP in the midst of continuous conflicts, trade-offs and tensions. Ms. Rankine explained that green growth is seen as a system change. Economies need to be recalibrated to better fit to a new economic reality. The idea is to arrive at green economy where investment in renewable energies and other improvements in eco-efficiency. This means recalibrating the “invisible” structure of the economy. A green growth policy framework is needed to maintain investment momentum. The right market and regulatory conditions and incentives are needed

to close “price” and “time” gaps. In closing the price gap, opportunity costs of good management should be reduced, with regulation and government institutional and legislative support in place. In financing to close the time gap, it is important to have temporary/adaptable policy measures to compensate for financial outlays (buyer and seller) or provide incentives. Ms. Rankine mentioned that enabling conditions for policy support include the recognition of ecosystem services in law; giving users the legal right to manage non-private lands (especially state lands); recognition of intermediary institutions as joint managers (stakeholder groups); flexibility for direct beneficiaries to recover costs from users if needed (water and energy price regulatory framework affected); land use planning, which is ideally based on ecosystem service functions; and facilitation of cooperation across administrative boundaries. Investment in natural capital is critical for effective economic cooperation. Ms. Rankine shared four key messages in natural capital: (1) The demand for the services provided by natural capital is growing; (2) Use ecosystem service concepts to identify potential investors and partners and the specific policy support needed; (3) natural capital investments for green growth need specific institutional support; and (4) spatial (land use) planning and ecosystem service investments must be intimately linked. She concluded by stating that investment in natural capital can be encouraged, if (1) investors/buyers are clearly identified; (2) specific strategies are put in place to close price and time gaps; (3) spatial planning is linked; and (4) institutional support is provided. For regional cooperation, there needs to be focus on one or two key economic sectors; buyers should be linked to investment in shared high-value ecosystems with common policies; and specific institutional support to manage should be provided.

Dr. Berthold Siebert of GIZ presented about the Integration of Ecosystem Services into Development Planning. Dr. Seibert mentioned that conservation of biological diversity and the promotion of ecosystem services is the guiding principle of German Development Policy. From 2013 onwards, Germany will provide 500 million Euros per year for the conservation and sustainable use of Biodiversity. GIZ projects shall enhance their contribution to the conservation and sustainable use of biodiversity. This goes beyond traditional approaches towards the protection of nature, species and ecosystems. Dr. Seibert stressed that there is an urgent need for mainstreaming within German development policy and in relation to the policies and strategies of partner countries. The essence of GIZ’s approach – Integrating ecosystem services into development planning (IES) – is the recognition that biodiversity is the basis of functioning ecosystems; development is linked to the availability of ecosystem services; and development and economic activities can have negative impacts on ecosystems. Dr. Seibert explained that the IES approach is a systematic, stepwise approach to evaluate and value ecosystem services and to integrate them in development processes. Its purpose is to: (1) demonstrate the importance of considering ecosystem services in development planning; (2) visualize the impact of development on the availability of ecosystem services; (3) clarify risks and opportunities, and identify, assess and implement alternatives. The

approach is a logical consequence of the TEEB study and a first step towards implementation of the initiative. IES further addresses the issues and tries to find practicable solutions to some of the raised questions. Dr. Seibert cited that IES provides clear guidelines through the six-step approach, but the sixth step addresses implementation.

Mr. Peter Cutter of the World Wide Fund for Nature gave a presentation on Investing in Natural Capital in the Greater Mekong Subregion (GMS). He highlighted that the GMS is at a comparative advantage – impacts on natural capital are relatively low compared with its neighbors. The report "Realizing the Asian Century: A Strategic Framework in Asia 2050" states "The key policy implication for all Asian countries is that their future competitiveness and well-being depend heavily on improving the efficiency of natural resource use and winning the global race to a low carbon future.". Mr. Cutter gave examples of services provided bykey ecosystems. Forest ecosystems provide timber harvest, water storage, regulation of water flows, non-timber forest products (NTFPs), and climate change mitigation and adaptation. Key services of mangrove ecosystems, on the other hand, are coastal erosion prevention, buffering extreme events, fish spawning, and NTFPs. Coral reef ecosystems provide coastal erosion prevention, recreation, fish productivity, and mitigating storm impacts as its key services. Wetland ecosystems provide floodwater regulation, water purification, and fish spawning and production. River systems provide sedimentation, nutrient movement, fish reproduction and hydropower as key services. Mr. Cutter cited that in 2002, rivers, reservoirs, and other aquaculture produced USD1.5 billion in annual revenues in the Lower Mekong Basin. Investing in conservation is much less expensive than having to do restoration. Natural capital is easy to lose, a challenge to conserve, and expensive and very difficult to restore. Future scenarios need to be used for decision support. Decision-makers need this information on future outcomes, and the need to accept some uncertainty without getting into too much speculation. Mr. Cutter said that in WWF's current work in the region, the best tools available are being used to minimize uncertainty. Mr. Cutter ended his presentation posing the questions: Are patterns of benefit and natural capital distribution adequately captured in current analysis and policy structures? What are the implications for key national indicators if these additional dimensions of distribution of benefits are explicitly taken into account?

Professor A. K. Enamul Haque of the United International University in Dhaka, Bangladesh presented the Pathways to Integrate Ecosystem Services into the Development Sector: Tools and Methodologies. Prof. Haque revisited the classification of ecosystem services: Provisioning Services (where the productive power of nature is used to produce goods and services for human needs); Regulating Services (including flood control, erosion, sand/silt deposit and disease regulation using ecosystems); Cultural Services (tourism/aesthetic, educational values, spiritual); and Supporting Services (nutrient cycle, pollination, biodiversity,

water supporting the community, flood protection and water availability). Ecosystem services become affected by human interventions combined with natural disasters. Prof. Haque emphasized that, as framework of analysis, it is important to understand the pressure on the ecosystem due to development activities, such as urbanization and infrastructure development, and develop an understanding on the measure of changes in the state of pressure and its impact on the ecosystem services. Methods of valuation may be revealed preference method and stated preference method. The Cost-Benefit analysis is basically used as a tool of assessment. Method of analysis may be the surplus method and optimization. In the concluding part, Prof. Haque presented that key considerations should include the analysis of changes in the state of ecosystem health; analysis of pathways of impacts through ecosystem services; analyze the mitigating and avertive actions of the economic agents; analyze impact factors; and integrating it with traditional decision tree, among others.

Dr. Jian Liu, Director of the UNEP International Ecosystem Management Partnership, facilitated the following panel discussion that focused on "Mainstreaming biodiversity and climate change: Identifying and implementing policy options". Mr. Ali Dehlavi of WWF-Pakistan, Mr. Luke Brander of the Hong Kong University of Science and Technology, and Mr. Louis Lebel of Thailand's Chiangmai University joined the session as panelists. Summary of the points raised include: benefits can be derived from the assessment of climate change impacts and valuation of ecosystem services; there is a conflict or an imbalance in resource allocations for climate change and biodiversity; food security in the context of climate change is a critical issue; governments prioritize investments on trade liberalization than for natural resources management; and there is a need to implement a systematic approach for accounting of ecosystem services.

Dr. Mike Christie of the Institute of Biological, Environmental and Rural Sciences at the Aberystwyth University in the United Kingdom facilitated the plenary discussion on how to make the economics of ecosystem services credible and more useful. Mr. Paulo ALS Nunes (CIESM Programme) and Dr. Salman Hussain (Scottish Agricultural College) joined the session as discussants. Dr. Christie started off the discussion with the questions 'how applicable are economic methods used to capture the value of ecosystem services to Asia? How might data on the value of ecosystem services best be incorporated into policy/decision-making in Asia? What are the data/knowledge gaps? What are human capacity building needs within Asia to undertake economic analysis?" Regarding methodological issues, he pointed out the low levels of literacy, education and language; informal or subsistence economies; and valuation methods have been developed in developed countries. As for practical issues, there is a lack of local research capacity to design, administer and analyse research projects; and it is sometimes easier to administer valuation studies in developing countries. Policy issues include a lack of local research capacity; lack of empirical valuation studies in developing countries; and

the existing research is often extractive. In conclusion, he said that the way people in developing countries think about the natural environment is different to those in developed countries. Standard approaches to valuation are unlikely to effectively reveal the preferences of people in developing countries. Valuation may be more effective if local researchers are used throughout the research process, and if deliberative, participative and action research approaches are incorporated into the valuation methods. Dr. Christie recommends that further research is required to develop best-practice guidelines for valuation research in a developing country context; explore ways in which deliberative, participatory and action research approaches might best be incorporated into economic valuation; and to build local research capacity to allow local researchers to be utilized at all stages in the design, administration and analysis of valuation studies.

Mr. Paulo ALD Nunes of the CIESM Programme in Marine Economics at the Mediterranean Science Commission in Monaco highlighted the need for economists together with natural planners and local institutions to recognize the importance of property rights of custodians of the environment/resources; unregulated access to the resource; how those samples are traced; as well as the benefits involved.

Dr. Salman Hussain of the Scottish Agricultural College in Edinburgh added to the discussion to move away from the analysis of total benefit to an analysis of marginal benefit. He said to be aware that it isn't 'all or nothing' in most cases, and to be real of what the change is going to be. An extensive science base should be used, otherwise the study will be flawed; understanding exactly the changes in biophysical terms. It is important to be aware of the limitations of benefits transfer.

Finally, the synthesis of the meeting was provided by Mr. Rodrigo Fuentes (ACB), giving some challenges coming from the Manila dialogue, as well as the points from the Bangkok dialogue as highlighted below:

- There was a general appreciation on the importance of TEEB in policy making but there is also a need to convey and impart to all levels of stakeholders, not only to policy makers at the national level, but also to communities, and provincial and regional authorities.
- Awareness-raising and information dissemination, especially at the community level, is needed
- Development (economic) is perceived to be more important than environment/ecosystem conservation, but there needs to be a balance
- Investment in natural capital can be encouraged, if investors or buyers are clearly identified, specific strategies are put in place, spatial planning is linked, and institutional support is provided

- On climate change and biodiversity linkages, to solve one problem is to solve the other, but with the exception of biofuels use that has issues in land and crop conversion
- Adaptation measures/options that utilize ecosystems can have very negative effects in ecosystems and ecosystem services
- Engage commercial bankers- people who are responsible for gross savings rates should also be invited in similar dialogues
- There is a need for success stories and case studies, looking into how far these efforts have been taken in policy and decision-making
- There is a need for a more sophisticated model of science-policy link, with examples such as the UK NEA (independent study and government response)
- There is also a need to recognize the methodological, capacity and practical issues for valuation, taking into account local perspectives and adopt these by developing appropriate approaches
- The developments in access and benefit-sharing also need to be considered given its huge potential in the valuation process
- There is a need to build the capacities of academic institutions such as universities to undertake the valuation processes, and to bring business and governments together to discuss implications of short-term and long-term scenario building processes

As a next step, Mr. Fuentes mentioned about the next activity under the project of ACB and FCO, which is the TEEB Technical Workshop to be held back-to-back with the Biodiversity Indicators Workshop on 26-30 March 2012 in Hanoi, and co-organized with UNEP-WCMC. In addition, he also expressed possible ways forward, such as an ASEAN TEEB Scoping Study, further collaboration in terms of knowledge sharing and data gathering, and a possible follow-on conference on green economy. The policy segment of the workshop was officially closed with messages delivered by Mr. Rodrigo U. Fuentes, Mr. John Pearson, and Dr. Pushpam Kumar.

Annex I: List of participants

Name	Title	Organization
Fakrul Ahsan	Chief	General Economics Division, Ministry of National Planning, Bangladesh
Wangchuk Namgay	JSP Project Manager/Sr. Planning Officer	Gross National Happiness Commission, Bhutan
Mohamed Imad	Assistant Executive Director	Department of National Planning, Republic of Maldives
Purushottam Ghimire	Joint Secretary	National Planning Commission, Nepal
Jawed Ali Khan	Chief	Environment Section, Department of Planning and Management, Pakistan
K. G. Rohan Gaya Ramya Wickramawardana	Assistant Director	Department of National Planning, Ministry of Finance and Planning, Sri Lanka
Sjofjan Bakar		Minstry of Home Affair, Indonesia
Koch Savath	Deputy Director General of Administration and Finance, and Director of National Green Growth Secretariat	Ministry of Environment, Cambodia
Pisey Oum	Vice Director	Department of Policy and Planning, Ministry of Environment, Cambodia
Souphith Darachanthara	Deputy Director-General	National Economic Research Institute, Ministry of Planning and Investment, Lao PDR
Daovinh Souphonphacdy	Chief of Cabinet	Ministry of Natural Resources and Environment, Lao PDR
Phakkavanh Phissamay	Director	Planning and Finance Division, Department of Environmental and Social Impact Assessment, Ministry of Natural Resources and Environment, Lao PDR
Krisana Choeypan	Director	Regional Environmental Office 8, Ministry of Natural Resources and Environment, Thailand
Wachiraphong Suwansophon	Plan and Policy Analyst	Nan Provincial Administrative Organization, Thailand
Foyfa Schutidamrong		Department of Soil Science, Faculty of Agriculture at KamphaengSaen. Kasetsart University KamphaengSaen campus, NakhonPathom province, Thailand
Tanawan Mongkolmoo		Department of Soil Science, Faculty of Agriculture at KamphaengSaen. Kasetsart University KamphaengSaen campus, NakhonPathom province, Thailand
Luke Brander	Environmental Economist	Division of Environment, Hong Kong University of Science and Technology
Mike Christie		Institute of Biological, Environmental and Rural Sciences, Aberystwyth University
Ali Dehlavi		World Wide Fund for Nature (WWF), Pakistan
Enamul Haque	Professor	United International University, Dhaka, Bangladesh
Salman Hussain		Scottish Agricultural College, Edinburgh, United Kingdom
Lalit Kumar		The Green Indian States Trust, India
Surender Kumar		Delhi University, India
Louis Lebel		Chiang Mai University, Thailand
Roldan Muradian		Centre for International Development Studies Nijmegen, Radboud University, Netherlands

Paulo A.L.D. Nunes		CIESM Programme in Marine Economics, Mediterranean Science Commission, Monaco
Golam Rasul		International Centre for Integrated Mountain Development (ICIMOD), Nepal
Priya Shyamsundar		The South Asian Network for Development and Environmental Economics (SANDEE)
Kim Thi Thuy Ngoc		Institute of Strategy on Natural Resources and Environment (ISPONRE), Ministry of Natural Resources and Environment, Viet Nam
Jianchu Xu		International Center for Research in Agroforestry (ICRAF), China
Vann Monyneath	Technical Deputy Director General	Ministry of Environment, Cambodia
Mey Socheat	Deputy Director	Department of Economic Integration and ASEAN, Ministry of Economy and Finance, Cambodia
Pich Rithi	Director General	Ministry of Commerce, Cambodia
Viengthong Siphandone	Vice Minister	Ministry of Finance, Lao PDR
Angkhansad Mouangkham	Director	International Finance Cooperation Division, Ministry of Finance, Lao PDR
Theuthone Soukaloun	Secretary of the Vice-Minister of Finance	Ministry of Finance, Lao PDR
San Thwin	Professor	University of Forestry, Ministry of Environmental Conservation and Forestry, Myanmar
Bharat Singh	Deputy Director	Central Bank of Myanmar, Myanmar
Pham Anh Cuong	Director General	Biodiversity Conservation Agency, Viet Nam Environment Administration, Viet Nam
Supat Wangwongwatana	Secretary General	Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, Thailand
Benchamaporn Wattanatongchai	Senior Environmental Specialist	Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, Thailand
Asif Ahmad	Ambassador	British Embassy in Thailand
Steve Chandler	Deputy Head of Mission	British Embassy in Thailand
Kanyasorn Tansubhapol	Climate Change Officer	British Embassy in Thailand
John Pearson	Head	Southeast Asia Climate Change Network, British High Commission in Singapore
Peter Cutter	Manager	Greater Mekong Landscape Conservation Programme, WWF, Thailand
Adam Tomasek	Leader	Heart of Bornei Global Initiative, WWF-Indonesia
Geoffrey Blate	Senior Advisor	Landscape Conservation and Climate Change, WWF Greater Mekong
Kate Newman	Managing Director	Public Sector Initiatives - Field Programs, WWF-USA
Berthold Seibert	Project Director	Biodiversity and Climate Change Project, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Philippines
Hitomi Rankine	Environmental Affairs Officer	United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Thailand
Jarinya Saiyut	Policy and Plan Analyst	Northeastern Region Economic and Social Development Office, Muang District, Khon Kaen, Thailand
Damien Jourdain	Visiting Associate Professor	Natural Resource Management, Asian Institute of Technology (AIT), Thailand
Shankar Tagad	Programme Officer	Yunus Center, AIT, Thailand

Seinn Seinn	PhD Candidate	Regional and Rural Development Planning, AIT, Thailand
Sajjad Ahmad	PhD Candidate	School of Environment, Resources and Development, AIT, Thailand
Sandro Calvani,	Director	ASEAN Center on U.N. Millennium Development Goals
Nguyen Ngoc Duc	PhD Candidate	SOM, AIT, Thailand
Chidchanok Apipoonyanon	PhD Candidate	Regional Rural Development Planning School of Environment, Resource and Development, AIT, Thailand
Rodrigo U. Fuentes	Executive Director	ASEAN Centre for Biodiversity (ACB)
Clarissa C. Arida	Director	Programme Development and Implementation (PDI), ACB
Rolando A. Inciong	Head	Communications and Public Affairs, ACB
Norman Emmanuel C. Ramirez	Programme Management Officer	PDI, ACB
Rhia C. Galsim	Capacity Development Officer	PDI, ACB
Corazon A. de Jesus, Jr.	Programme Development and Implementation Officer	PDI, ACB
Pushpam Kumar	Chief	Ecosystem Services Economics (ESE) Unit, Division of Environmental Policy Implementation (DEPI), United Nations Environment Programme (UNEP)
Makiko Yashiro	Programme Officer	ESE Unit, UNEP/DEPI
Young-Woo Park	Regional Director	UNEP/Regional Office for Asia Pacific (ROAP)
DechenTsering	Deputy Regional Director	UNEP/ROAP
Thomas Enters	UN-REDD Coordinator	UNEP/DEPI
Haruko Okusu	MEA Focal Point (Biodiversity and Ecosystems)	UNEP/DELC
Max Zieren	GEF Regional Focal Point, Task Manager Biodiversity and Land Degradation	UNEP/DEPI
Jian Liu	Director	International Ecosystem Management Partnership (IEMP), UNEP

Annex II: Programme of the workshop

Training Workshop on "Mainstreaming Ecosystem Services Approaches into Development: Application of Economic Valuation for Designing Innovative Response Policies"		
Date/Time	**Topics**	**Presenter/Facilitator**
Day 1: Monday, 6 February 2012		
MC (9:00-10:00): Rolly A. Inciong, Head, Communication and Public Affairs, ASEAN Centre for Biodiversity (ACB)		
9:00-9:15	Welcome remarks	Dechen Tsering, Deputy Regional Director, United Nations Environment Programme/Regional Office for Asia Pacific (UNEP/ROAP)
9:15-9:30	Welcome remarks	Rodrigo U. Fuentes, Executive Director, ACB
9:30-9:45	Introduction: Overall themes and objectives of the workshop	Pushpam Kumar, Chief, Ecosystem Services Economics (ESE) Unit, UNEP Division of Environmental Policy Implementation (UNEP/DEPI)
9:45-10:00	Brief self introduction by participants	
10:00-10:30	*Coffee break*	
Methodologies, data needs and applicability of economic valuation of ecosystem services		
Chair (10:30-12:00): Pushpam Kumar, Chief, ESE Unit, UNEP/DEPI		
10:30-11:15	Use of economic valuation and design of policy instruments (30 min. presentation followed by 15 min. Q&A)	Mike Christie, Institute of Biological, Environmental and Rural Sciences, Aberystwyth University
11:15-12:00	Application of economic valuation of ecosystem services in future projection on cost of action vs inaction (30 min. presentation followed by 15 min. Q&A)	Salman Hussain, Scottish Agricultural College (SAC), Edinburgh
12:00-13:00	*Lunch*	
Chair (13:00-16:30): Enamul Haque, United International University, Bangladesh		
13:00-13:45	Case study: Valuation of wetlands (30 min. presentation followed by 15 min. Q&A)	Paulo A.L.D. Nunes, CIESM Programme in Marine Economics, Mediterranean Science Commission, Monaco
13:45-14:30	Case study: Valuation of coastal ecosystem services (30 min. presentation followed by 15 min. Q&A)	Lalit Kumar, Delhi University, India
14:30-15:00	*Coffee break*	
15:00-15:45	Case study: Valuation of wetland ecosystem services (30 min. presentation followed by 15 min. Q&A)	Ali Dehlavi, World Wide Fund for Nature (WWF) Pakistan
15:45-16:30	Discussions – methodologies, data needs and applicability of economic valuation of ecosystem services, based on other cases from from the region	
	discussions	
17:30-19:30	*UNEP-hosted reception – venue to be confirmed*	
Day 2: Tuesday, 7 February 2012		
Case study on economic valuation of ecosystem services		
9:00-16:30	*Case study/group work/simulation*	*Facilitator/Trainer: Mike Christie, Institute of Biological, Environmental and Rural Sciences, Aberystwyth University*
9:00-9:15	Introduction	
9:15-10:30	Valuation methods: theory and practice - Market prices - Cost-based approaches - Revealed preference – TCM example	
10:30-11:00	*Coffee break*	

11:00-12:30	Valuation methods: theory and practice (cont.) - Stated preference – UK BAP example - Valuation in developing countries – Solomon Island example - Value transfer (include value databases)	
12:00-14:00	*Lunch*	
14:00-15:15	National and Global ecosystem assessments – theory and case studies (UK NEA / TEEB)	
15:15-15:30	*Coffee break*	
15:30-16:30	Sharing experiences - Discussion of local experiences - Lessons learnt - Knowledge gaps	
16:30	Close	
Day 3: Wednesday, 8 February 2012		
Use of economic value in innovative response policies and tools for management of ecosystem services		
Chair (9:00-11:45): Jian Liu, Director, International Ecosystem Management Partnership (IEMP), UNEP, Beijing		
9:00-9:15	Updates on sub-global assessments (SGA) network (15 min. presentation and Q&A)	Makiko Yashiro, ESE Unit, UNEP/DEPI
9:15-9:30	TEEB-follow-up updates (15 min. presentation and Q&A)	Asad Naqvi, UNEP/DTIE
9:30-9:45	Valuation of marine ecosystems (15 min. presentation and Q&A)	Salman Hussain, Scottish Agricultural College (SAC), Edinburgh
9:45-10:30	Economic valuation and livelihoods: experiences in Asia (30 min. presentation followed by 15 min. Q&A)	Priya Syamsundar, SANDEE, Bangkok
10:30-11:00	*Coffee break*	
11:00-11:45	PES: Challenges and limitations (30 min. presentation followed by 15 min. Q&A)	Roldan Muradian, Centre for International Development Studies Nijmegen, Radboud University, Netherlands
11:45-13:00	*Lunch*	
Facilitator (13:00-15:15): Dechen Tsering, Deputy Regional Director, UNEP/ROAP		
13:00-15:15	Presentations on the use of economic value in innovative response policies and tools in the region (each country presentation includes 30 min. presentation followed by 15 min. Q&A)	1. Golam Rasul, International Centre for Integrated Mountain Development (ICIMOD), Nepal 2. Enamul Haque, United International University, Dhaka, Bangladesh 3. Surender Kumar, Delhi University
15:15-15:30	*Coffee break*	
Facilitator (15:30-16:30): Pushpam Kumar, Chief, ESE Unit, UNEP/DEPI		
15:30-16:30	Panel discussion: Lessons learned and next steps on innovative policy responses	1. Roldan Muradian, Centre for International Development Studies Nijmegen, Radboud University, Netherlands 2. Mike Christie, Institute of Biological, Environmental and Rural Sciences, Aberystwyth University 3. Jianchu Xu, International Center for Research in Agroforestry (ICRAF), Beijing 4. Luke Brander, Division of Environment, Hong Kong University of Science and Technology 5. Salman Hussain, SAC, Edinburgh
16:30-17:00	Conclusion and closing of the workshop	Conclusion: Haruko Okusu, UNEP, Clarissa C Arida, ACB Closing remarks: Dechen Tsering, Deputy Regional Director, UNEP/ROAP

Regional Policy Dialogue on the Economics of Ecosystem Services and Biodiversity: Transforming Policies into Actions		
18:30-21:00	Reception	Mr. Steve Chandler, Deputy Head of Mission, British Embassy in Thailand
Day 4: Thursday, 9 February 2012		
Chair (8:30-10:15): Rolly A. Inciong, Head, Communication and Public Affairs, ASEAN Centre for Biodiversity (ACB)		
8:30-9:30	Opening	
	Welcome messages	1. Rodrigo Fuentes, Executive Director, ACB 2. Young-Woo Park, Regional Director, UNEP/ROAP 3. Dr. Supat Wangwongwatana, Secretary General, Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, Thailand
	Special remark	H. E. Ambassador Asif Ahmad, British Embassy in Thailand
	Thematic remark	Pushpam Kumar, Chief, ESE Unit, UNEP/DEPI
	Introduction of participants	Rolly A. Inciong, Head, Communication and Public Affairs, ACB
	Group photo	
9:30-10:15	*Coffee break* *Media interviews*	
Chair (10:15-11:45): Pushpam Kumar, Chief, ESE Unit, UNEP		
10:15-10:45	Biodiversity Conservation in ASEAN: Regional Initiatives and Linkages to Climate Change Strategies	Rodrigo U. Fuentes, Executive Director, ACB
10:45-11:15	UK National Ecosystem Assessment and ecosystem services approaches	John Pearson, Head, Southeast Asia Climate Change Network, British High Commission in Singapore
11:15-11:45	Scaling up ecosystem service values for national level assessments	Luke Brander, Division of Environment, Hong Kong University of Science and Technology
11:45-12:00	Updates for TEEB follow-up	Asad Naqvi, UNEP-DTIE
Facilitator (12:00-12:30): Salman Hussain, SAC, Edinburgh		
12:00-12:30	Panel discussion: Experiences from the region on 'Mainstreaming'	1. Kim Thi Thuy Ngoc Viet Nam (country implementing the GEF-funded project for ecosystem services: ProEcoServ) 2. Souphith Darachanthara, Government Lao PDR (PEI country) Followed by discussions involving participants – sharing of experiences from the region
12:30-13:30	*Lunch*	
Chair (13:30-15:00): Young-Woo Park, UNEP/ROAP		
13:30-13:50	Investing in Natural Capital: Promoting Green Growth and Green Economy	Hitomi Rankine, Environmental Affairs Officer, UNESCAP
13:50-14:10	Integrating ecosystem services into development: rationale and evidences	Berthold Seibert, Project Director, Biodiversity and Climate Change Project, GIZ
14:10-14:30	Investing in Natural Capital in the Greater Mekong Subregion	Peter Cutter, World Wide Fund for Nature
14:30-15:00	Pathways to integrate Ecosystem services into development sector: Tools and methodology	Enamul Haque, United International University, Dhaka, Bangladesh
Facilitator (15:00-16:00): Jian Liu, Director, IEMP, UNEP, Beijing		
15:00-16:00	Panel discussion: Mainstreaming Biodiversity and Climate Change: Identifying and Implementing Policy Options	1. Ali Dehalvi, World Wide Fund for Nature, Pakistan 2. Luke Brander, Division of Environment, Hong Kong University of Science and Technology 3. Louis Lebel, Chiangmai University
16:00-16:15	*Coffee break*	
Facilitator (16:15-17:15): Mike Christie, Aberystwyth University		
16:15-17:15	Plenary discussion: How to make the economics of ecosystem services credible and more useful	1. Paulo A.L.D. Nunes, CIESM Programme in Marine Economics, Mediterranean Science Commission, Monaco 2. Salman Hussain, Scottish Agricultural College (SAC), Edinburgh Discussions with inputs from other participants

MC (17:15-18:30): Rolly A. Inciong, Head, Communication and Public Affairs, ACB		
17:15-17:45	Synthesis of the meeting	Rodrigo U. Fuentes, Executive Director, ACB
17:45-18:30	Closing	1. Rodrigo U. Fuentes, Executive Director, ACB 2. John Pearson, British High Commission in Singapore 3. Pushpam Kumar, Chief, ESE Unit, UNEP/DEPI