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Trondheim Conference on Biodiversity Bulletin

Summary of the Seventh Trondheim Conference on Biodiversity - Ecology and Economy for a Sustainable Society

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TRONDHEIM
CONFERENCES ON
BIODIVERSITY

SUMMARY OF THE SEVENTH TRONDHEIM CONFERENCE ON BIODIVERSITY: ECOLOGY AND ECONOMY FOR A SUSTAINABLE SOCIETY 27-31 MAY 2013

Hosted by the Norwegian government in cooperation with the UN Environment Programme (UNEP), the Convention on Biological Diversity (CBD), the UN Food and Agriculture Organization (FAO), the UN Development Programme (UNDP) and the World Bank, the seventh Trondheim Conference on Biodiversity brought together approximately 330 experts from governments, international organizations, academia, civil society and the private sector. The Conference focused on the first goal of the Strategic Plan for Biodiversity 2011-2020, adopted by the CBD Conference of the Parties (COP) and endorsed by several conventions, which addresses the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society. Participants considered the ways in which biodiversity contributes to a sustainable society, and the ways in which a careful alignment and mix of policies, incentives and business strategies can help deliver development pathways that lead to a more sustainable society. A Co-Chairs' report of the Conference, entitled "Moment of Opportunity," which captures the key messages arising from the Conference, will be transmitted to the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA).

This report provides a summary of the Conference proceedings and presentations, as well as of the Co-Chairs' report. Presentations are available online at: <http://www.dirnat.no/content/500047298/Presentations>.

A BRIEF HISTORY OF THE TRONDHEIM CONFERENCES ON BIODIVERSITY

Since 1993, the Trondheim Conferences on Biodiversity have sought to enhance cross-sectoral dialogue on biodiversity research and management, and to establish the best possible scientific basis for policy and management decisions in relation to the CBD implementation. They have provided important input to the CBD by focusing on the multidimensional nature of the implementation of the Convention and recognizing that biodiversity-related issues are relevant for sustainable development.

The first Trondheim Conference, held in May 1993, provided scientific input to the first meeting of the Intergovernmental Committee of signatories to the CBD. The



"Apes & Babes," a Norwegian acapella group performing during the opening session of the 7th Trondheim Conference on Biodiversity.

second Conference, held in July 1996, focused on invasive alien species, and contributed to SBSTTA 2 and the development of the Global Invasive Species Programme. The third Conference, held in September 1999, discussed the ecosystem approach for the sustainable use of biodiversity, and provided input to SBSTTA 5 and to discussions leading to the adoption of the operational guidance and principles on the ecosystem approach at the CBD COP 5. The fourth one, held in June 2003, focused on technology transfer and capacity building. It provided input to SBSTTA 9 and to UNEP and its intergovernmental strategic plan for technology support and capacity building to developing countries. The fifth Conference, held in November 2007, discussed why biodiversity is an important component of sustainable development and how it contributes to poverty alleviation, as well as progress towards the 2010 target of significantly reducing the rate of biodiversity loss and relevant Millennium Development Goals. The sixth Conference, held in February 2010, discussed the status of, and lessons learned from, the CBD 2010 target and setting post-

IN THIS ISSUE

| | |
|--|----|
| A Brief History of the Trondheim Conferences on Biodiversity | 1 |
| Trondheim Conference Report | 2 |
| Upcoming Meetings | 16 |
| Glossary | 17 |

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2010 targets, including emerging issues and challenges for addressing drivers of biodiversity loss.

TRONDHEIM CONFERENCE REPORT

On Monday, following a cultural performance by the Trondheim-based a capella group Apes & Babes, Bård Vegar Solhjell, Minister of Environment, Norway, welcomed participants stating that biodiversity is “our life insurance.” He recalled the history of the Trondheim Conferences and underscored their importance for providing relevant input to the negotiation process of the Convention on Biological Diversity (CBD). Finally, he invited participants to leave negotiations aside and learn from each other.

Rita Ottervik, Mayor of Trondheim, Norway, said that Trondheim is a city of immigrants and an important city for research. She recalled the latest actions of the city to reduce carbon emissions, mainly in the transport sector, noting the goal to cut 20% of overall CO₂ emissions by 2018. Wishing a fruitful debate, she declared that the objective of the conference is to transform biodiversity into “everyone’s business.”

Jayanthi Natarajan, India’s Minister of Environment and Forests and President of the Conference of the Parties (COP) to the CBD, thanked Norway for its hospitality and leading role in promoting the biodiversity agenda. She stressed that the role of the Trondheim Conference is to foster scientific knowledge on biodiversity and said the 2013 dialogue represents an opportunity to contribute to the alignment of social, economic and environmental goals. Despite major advancements in the CBD COP 11, held in Hyderabad, India, including setting up targets for the Convention’s resource mobilization strategy, she noted that biodiversity remains in a “precarious state.” She noted the priority to translate decisions into reality, and invited countries to accelerate the ratification of the Nagoya Protocol, as well as to update National Biodiversity Strategies and Action Plans (NBSAPs) by March 2014. In conclusion, Natarajan declared that the post-2015 agenda needs to further foster biodiversity concerns and suggested that countries should ensure deliverable outcomes despite the economic crisis.

TRONDHEIM+20 PERSPECTIVES

This session was held on Monday and chaired by Jayanthi Natarajan and Bård Vegar Solhjell.

Setting the stage, Chair Bård Vegar Solhjell identified biodiversity loss and climate change as the two most important global environmental challenges, adding that while climate change has the media’s attention, biodiversity loss is equally important. He noted that biodiversity is the source of, among others, food, shelter, culture and identity, as well as part of the solution to combat climate change, and stressed the need to make biodiversity a vital part of decision making on sustainable development. After highlighting the critical situation of ecosystems around the world, including forest, mangroves, wetlands and coral reefs, he shared success stories, including lake restoration in China and forest protection for flood control in Argentina, in order to multiply good examples to reverse negative trends.

Bård Vegar Solhjell also noted the need for: improved knowledge as key to making better decisions, sharing his expectations with regard to the role of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES); and a step-wise approach to valuation of natural capital, highlighting the contribution of the study on The Economics of Ecosystems and Biodiversity (TEEB). He further called for: working across the environment, agriculture, forest, fisheries, development and planning sectors to achieve the Aichi biodiversity targets; and tackling the “language barrier” by improving communication among biodiversity and economics. He finally drew attention to Norway’s climate and forest initiative, and forthcoming ratification of the Nagoya Protocol on access and benefit-sharing (ABS).

Chair Natarajan commented on the need to put biodiversity into the broader development agenda.

Abdul H. Zakri, IPBES Chair, highlighted that evidence defining the biodiversity crisis is documented by several tipping points, including Amazon rainforest loss. He noted that, although the science is becoming clearer and various sectors are developing tools to mitigate the problem, global challenges are far from being resolved. He said a huge diversity of crops and domesticated animals was lost because of the promotion of more uniform breeds and high-yielding varieties, yet dealing with environmental changes requires a large genetic pool. He, however, drew attention to positive examples, including slowing down tropical deforestation, tackling pollution problems, expanding protected areas and addressing climate change as a development, rather than environmental, problem.



L-R: Dais during the opening session with Minister Jayanthi Natarajan, Ministry of Environment and Forests, India; Minister Bård Vegar Solhjell, Ministry of the Environment, Norway; and Rita Ottervik, Mayor of Trondheim, Norway

On the IPBES, Zakri said the platform can create policy-relevant scientific consensus from a wide range of sources, and support decision makers in the translation of knowledge into policies, highlighting its aims to include capacity building to help bridge different knowledge systems. On the post-2015 development agenda, he stressed the need to: ensure the Aichi targets are fully taken into account; decouple growth from consumption; and develop a vision going beyond gross domestic product (GDP), along the lines of the inclusive wealth index, which aims to capture the value of natural resources.

In the ensuing discussion, Zakri addressed the need for communicating the importance of biodiversity and “walking the talk” about biodiversity mainstreaming, particularly with regard to the sustainable development agenda.

Rebeca Grynspan, UN Under-Secretary General and UNDP Associate Administrator, recognized the leadership of Norway in terms of its work towards protecting biodiversity and congratulated the country for the 20th anniversary of the Trondheim Conference. In the context of the post-2015 agenda, she declared that the conference is timely. Recalling that human survival depends upon biodiversity, she highlighted unprecedented levels of biodiversity loss, which are currently undermining the foundation of life and ongoing development efforts. Noting UNDP’s commitment to combat rising tendencies of extreme poverty, she proposed four main actions that parties and agencies could promote to mainstream biodiversity concerns into the development agenda: fostering learning regarding the contribution of biodiversity for poverty eradication; consolidating common language in respect to the post-2015 goals; shaping public opinion and improving public communication; and empowering national constituencies towards an effective participation in the ongoing UN consultation process on the post-2015 agenda. She concluded that the Trondheim Conference has been catalytic in the past and continues to provide opportunities to place biodiversity at the top of the post-2015 agenda.

In the ensuing discussion, Grynspan responded to questions on how to foster implementation and good governance by stating that it is up to the countries to implement international rules according to the domestic context. However, she noted the role of international agencies in providing an adequate global framework of good governance, and acknowledged the positive contribution of the Trondheim Conference in merging the development and environmental communities, which remain apart in many occasions.

Arni Mathiesen, Assistant Director-General of the FAO Fisheries and Aquaculture Department, presented on ecology and economy in food security. Stressing the need to free humanity from poverty and hunger as a matter of urgency, he highlighted that the world currently produces enough food to feed all and the challenge is to ensure that people have the means to either produce the food they need or to buy it. Looking ahead to 2050, he said that production needs to be increased in a sustainable way, and that food production and

consumption systems need to achieve more with less, while reducing greenhouse gas emissions and negative impact on biodiversity, soil and water. He highlighted food production systems’ pervasive impact on the environment, concluding that they are essential components of a transition toward a more sustainable future.

Drawing attention to reducing emissions from deforestation and forest degradation, and conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+), Mathiesen stressed the need to rely increasingly on natural processes and ecosystem services. He finally presented relevant FAO work, including under the Commission on Genetic Resources for Food and Agriculture (CGRFA), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) and the code of conduct for responsible fisheries, as well as the FAO reviewed strategic framework and strategic objectives, addressing: contributing to the eradication of hunger, food insecurity and malnutrition; increasing and improving provision of goods and services from agriculture, forestry, and fisheries in a sustainable manner; reducing rural poverty; enabling more inclusive and efficient agricultural and food systems at local, national and international levels; and increasing the resilience of livelihoods to threats and crises. He concluded that public investment and community capacity development is key for achieving sustainable production and improving the livelihoods of millions.

Noting the contribution of the Trondheim conferences to shaping the CBD agenda, Braulio Ferreira de Souza Dias, CBD Executive Secretary, presented on the Strategic Goal A of the Strategic Plan for Biodiversity 2011-2020 (address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society).

He said the Strategic Plan has truly become an overall framework for action on biodiversity, but lots remains to be done with the 2020 deadline approaching. He said CBD COP 12 will conduct a mid-term review of its implementation, while countries have been updating their NBSAPs and establishing national targets. He drew attention to the Strategic Plan’s emphasis on tackling underlying causes of biodiversity loss, stressing the need to pass from the phase of pilot projects to the phase of biodiversity mainstreaming into development planning and implementation. He suggested that one of the best ways to make progress on biodiversity goals is the promotion of win-win approaches that also contribute to poverty eradication, climate change solutions, and food, water and energy security. To that regard, he presented relevant examples, including the revised forest code in Brazil, reforestation schemes to combat land erosion in Asia, and South Africa’s Working for Water system. He further highlighted the need for progress in national biodiversity planning and accounting processes, noting that consideration of biodiversity’s economic values is essential but should not be used to disregard its intrinsic value or commodify nature, but instead to reflect the full value of nature in policy discussions. He stressed the need for better tools to integrate biodiversity and ecosystem goods



Rebeca Grynspan, UN Under-Secretary General and UNDP Associate Administrator



Braulio Ferreira de Souza Dias, Executive Secretary, CBD

and services into national accounting, and for moving beyond simplistic approaches such as GDP to better measures of human development such as the inclusive wealth index.

On the post-2015 development agenda, Souza Dias said that current discussions on the “Future We Want,” represent a significant step forward from the fragmented approach of the MDGs, and identifying the challenge of achieving goals simultaneously in often competing areas. He provided examples to illustrate the need for removal of harmful subsidies, stressing the importance of a clear influencing strategy, in addition to identifying economic arguments for change. He also expressed the hope for substantial progress on the issue at CBD COP

12. Highlighting that the primary underlying causes of biodiversity loss are due to human behavior, he called for better engagement of social scientists and different stakeholder groups to ensure incorporation of the Strategic Plan in the post-2015 development agenda.

Peter Gilruth, Director, Division of Early Warning and Assessment, UNEP, presented on the interplay between ecology, economy and society. On behalf of Achim Steiner, Executive Director, UNEP, Gilruth recalled key successful stories on sustainable development, such as improved rates of water access and reduction of fuel subsidies. While stating that more progress is needed, he said that measures to ensure a reasonable pace for the use of natural resources and reduction of waste, notably related to food, must be fostered. On the post-2015 agenda, he underscored that scaling up relevant solutions is fundamental. He said that science, in this regard, is a key ally in the effort to link economic growth, environmental conservation, and social improvement.



Peter Gilruth, Director, Early Warning and Assessment, UNEP

INTRODUCTION TO ECOLOGY AND ECONOMY

The session was held on Monday and co-chaired by Conference Co-Chairs Tone Solhaug, Norway’s Ministry of Environment, and Ivar Baste, Norway’s Directorate for Nature Management.

Simon Upton, Environment Director, Organisation for Economic Co-operation and Development (OECD), presented on bridging economic and ecological policies for a sustainable society, including relevant work on biodiversity under the Environmental Outlook to 2050. He identified four priorities for action: reforming or removing harmful environmentally subsidies; scaling up private sector engagement; improving data, metrics and indicators; and mainstreaming and integrating biodiversity into other policy areas and sectors of the economy. He presented examples of subsidies that actively support unsustainable environmental



Simon Upton, Environment Director, OECD

production and consumption, including fossil fuel and agricultural subsidies, stressing that the way we produce our food and energy is profoundly important.

Upton then highlighted the importance of not directing subsidies towards biodiversity conservation, but of proceeding with biodiversity valuation; presented examples regarding agriculture and water use, such as at Lake Taupo in New Zealand, illustrating the complexities of biodiversity mainstreaming and valuation; and called for a new narrative to address an overwhelmingly urban population, who’s primary connection to nature remains a virtual one.

Prasad Menon, Chairman of Tata quality management services, Tata Group, presented on the alignment between public and private sectors for sustainability. He underscored that development has reached a critical stage and that the private sector has both the experience and the understanding of “change” to make a difference. He also mentioned that businesses must evolve towards “collateral benefits.” To illustrate his point, he presented three case studies from the Tata group experience, in which education was used in the service of environmental conservation, related to: whale shark conservation; assessment of key biodiversity areas involving, for example, coral reefs, mangroves, turtle sanctuaries and bird conservation; and a withdrawal from industrial plants by the Natron Lake, in Kenya. He concluded by highlighting the hope that these examples encourage stronger partnerships among academia, communities, the private sector and governments.

Peter Schei, Trondheim Conference founder, presented on the history, challenges and future of the Trondheim Conferences on Biodiversity. He said: the first conference was held in 1993, with a focus on the science-policy interface of the CBD; the second in 1996, addressed invasive alien species, an issue which was not yet on the political agenda; in 1999, the third conference focused on the ecosystem approach for sustainable use; in 2003, the fourth one addressed technology transfer and capacity building, focusing on ensuring that all countries have the best technology and knowledge; in 2007, the fifth conference focused on ecosystems and people-biodiversity for development, with the realization that work needs to address all pillars of sustainable development; and in 2010, the sixth conference focused on the biodiversity targets – working for sustainable development.

Schei said the rationale behind the conferences was to ensure a solid scientific basis for CBD implementation, and identified future challenges for biodiversity governance, including: aligning sustainable development goals with biodiversity concerns and targets; mainstreaming biodiversity into economy, laws and human behavior; developing the right institutions and processes for public-private governance; ensuring better use of biodiversity and ecosystem services for mitigation and adaptation; and integrating social and ecological systems for establishing good governance structures. On the future of the Trondheim Conference, he suggested including more social scientists, economic sectors and business.



Prasad Menon, Chairman of Tata Quality Management Services, Tata Group

Pavan Sukhdev, Founder and CEO, Green Initiatives for a Smart Tomorrow (GIST) Advisory, discussed the links between public policies and corporations at the macro level. He underscored the need to understand the pathways that will lead us to a green economy. For that, he suggested fostering public investments, green public procurement, subsidy reforms, and environmental law, with a focus on calculating environmental externalities. On production and consumption patterns, he said that “innovation drives need” and not the contrary. Alerting that we are losing public capital in the form of nature, he said that understanding drivers of economic change must be the utmost priority. He added that disclosing externalities represents the biggest “free lunch” in the history of humankind and that the first step to address these problems is to improve measuring. He underlined that, despite the leadership of a few companies, “followship” is lacking. In this sense, he suggested that global collaborative networks are the solution and is, precisely, where governments need to act. In conclusion, Sukhdev recalled the importance of The Economics of Ecosystems and Biodiversity (TEEB) for Business Coalition in this process, noting that unknown subsidies are even more concerning than those already calculated by experts.

ECOLOGY AND ECONOMY FOR A SUSTAINABLE SOCIETY

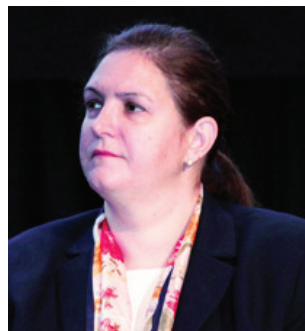
This panel session was moderated on Monday by Peter Schei, who invited the audience to pose questions to panelists. The discussion covered, among others, the need for a common language to engage diverse stakeholders, relevance of the social science to policy-making, and the challenge of creating a business response to the biodiversity conventions.

In response to a question on the need to engage diverse stakeholders, Sukhdev said that eradicating poverty and conserving biodiversity is not always a tradeoff. He argued that education, health care and other forms of development should be secured in addition to biodiversity, which already contributes a significant proportion of income to the world's poor. Pushpam Kumar, UNEP, underscored that poverty is a multidimensional phenomenon that requires multiple solutions, adding that managing biodiversity can alleviate, but not eliminate chronic poverty.

Souza Dias stressed that the social sciences are needed to help make better use of natural science in policy-making, and to improve understanding of how people influence decision-making about natural resources.

Participants also discussed lack of political will and perverse incentives in general and for agriculture subsidies. Panelists recognized that political will is relevant, but noticed the risks of generalizing this problem, further arguing that “big money can buy political will.” Others argued that governments work under pressure and, if not requested, important issues could be left unaddressed, adding that transparency is key for a good governance framework. The panel acknowledged the negative impacts of agriculture subsidies for food security and regretted the lack of adequate action on this topic. It was also recommended that taxation policies must be further developed in order to incorporate natural capital value.

Responding to questions, Souza Dias noted concerns regarding the release of genetically modified organisms (GMOs) in centers of origin, and the need for the CBD to address the issue. Participants then discussed possible incentives for the private sector to change behavior, as well as related capacity building.



Session Chair Valeria González Posse, Directorate General for Environmental Affairs, Ministry of External Relations of Argentina

TRADE-OFFS IN NATIONAL POLICIES

The session was held on Tuesday and chaired by Valeria González Posse, Directorate General for Environmental Affairs, Ministry of External Relations of Argentina.

Edward Barbier, University of Wyoming, US, highlighted that the overarching challenge lies in tackling the environment-economy trade-off, which refers to ecological scarcity versus the benefits of economic development. He explained that policy needs to address three key failures to improve economic policies for biodiversity and ecosystem services: market failures, including dealing with ecosystem services as economic externalities; institutional failures, referring to lack of appropriate social institutions; and policy/government failures, including unintended impacts of policies, such as subsidies.

Barbier then presented on challenges related to valuation, incentives and international compensation. On valuation, he said the fundamental challenge lies in providing an explicit description and adequate assessment of the links between the structure and functions of natural systems, the benefits derived by humanity and their subsequent values. He explained that market, institutional and government failures often lead to a lack of incentives to protect biodiversity, which is exacerbated by the public goods nature of many critical ecosystems. On international compensation, he noted that wealthy countries tend to receive disproportionate benefits from key global ecosystem services derived from ecosystems located in the developing world.

In the ensuing discussion, participants and the speaker addressed: methods for calculating the public benefits of ecosystem services in developing countries; payments for ecosystem services and taxation, including carbon taxes; and the need to change the institutional framework responsible for failures.



Heidi Wittmer, Helmholtz Centre for Environmental Research

Heidi Wittmer, Helmholtz Centre for Environmental Research, launched the Guidance Manual for The Economics of Ecosystems and Biodiversity (TEEB) Country Studies (TCS), which provides practical advice to anyone considering or undertaking a TEEB country study. She said the manual is based on real-world problems, pitfalls, and experiences of past efforts to create policy-relevant

studies on the economic valuation of biodiversity. Wittmer underscored that country studies face particular challenges that can be addressed through tools like gap analyses, feasibility studies, and political analysis that translate results for policy making in a credible, relevant, and legitimate manner. Participants raised questions about the importance of attending to cultural values and the distribution of resources, in addition to economic valuation. Wittmer noted that there can be good

reasons to base decisions on non-economic rationales and that the priority of TCS should be to facilitate an ongoing discussion with society over the long-term.

PANEL SESSION: Moderator Pavan Sukhdev opened the plenary session outlining the need to ensure that a multistakeholder perspective is taken into account, as well as ecological concern.

Bob Watson, Co-Chair of the UK National Ecosystem Assessment, explained that a crucial aspect of the UK National Ecosystem Assessment was transparency, which meant including the perspectives of several stakeholders. He argued that it is a mistake to look only at market values since cultural and other non-market values are equally vital. He further noted the need for a range of complementary actions, including financial incentives, legislation and behavioral change.

Sian Sullivan, Birkbeck College, UK, talked from the perspective of a cultural geographer. She argued that natural capital is a social construction and cautioned that the economic valuation of biodiversity can exacerbate economic inequality. She also called for a greater understanding of the sources of extreme wealth of certain groups, which use biodiversity at the expense of other social groups.

Edgar Selvin Pérez, National Council for Protected Areas, Guatemala, discussed the impact of ethics and state building for biodiversity conservation. He said that good institutions and democratic states are essential for avoiding human ethical flaws. He concluded by stating that every country is accountable for its natural resources and recalled that democratic states are essential for effective national biodiversity strategies and action plans (NBSAPs).

Valerie Hickey, Wealth Accounting and the Valuation of Ecosystem Services (WAVES), World Bank, argued that the key problem is that “biodiversity remains invisible at the marketplace of ideas,” meaning that it continues to be a topic absent from the offices of decision-makers. She reported that the World Bank is currently working to bridge this gap through the WAVES initiative, but noted the remaining challenge of communicating biodiversity concerns to the development community. To overcome these difficulties, she suggested: embracing new partners, notably the private sector; developing an interdisciplinary perspective; improving the biodiversity narrative to include measurable units of analysis, such as jobs and distributional effects; and taking into account “cost-sharing,” not only benefit-sharing.

Nik Sekhran, UNDP, stressed the need to understand what drives decision making in various sectors and to distinguish between the needs of business, consumers and the state. Focusing on the need to influence business, he explained that their cost-benefit analyses are based on profits, government regulations and incentives, and several classes of risk. He called for better communication of such risks, including

reputational risk, access to land, capital and markets, security of supply, liabilities and relations with regulators; as well as for seeking to influence business through incentives and penalties. He showed how longer concessions and a certification system served as incentives for responsible conduct and biodiversity conservation.

Anthony Cox, OECD, noted that OECD has developed an assessment framework that brings together policy makers and stakeholders to go through options for addressing trade-offs. He stressed the need to address: the link between local-level impacts of trade-offs and national-level policies; non-economic indicators that provide a holistic assessment of biodiversity impacts on everyday life; real option models for valuation; economic and market instruments to overcome asymmetric information; and compatibility between corporate and public sector reporting mechanisms. He called for linking biodiversity to other agendas, including climate, food, water and military security.

Diego Pacheco, Ministry of Foreign Affairs, Bolivia, drew attention to two distinct visions on ecology and economy: the western, anthropocentric and market-oriented one that sees nature as capital; and the cosmocentric one, based on an indigenous peoples’ mindset, which sees Mother Earth as a living being that is influenced by, but not centered on, markets. He noted that the second vision implies the non-commodification of natural functions and promotes the rights of peoples and of Mother Earth, adding that the ideas of natural capital and ecosystem valuation will not move ecology forward. He then presented the Bolivian legal framework for the management of environmental functions for living in balance and harmony with Mother Earth, which recognizes: rights of peoples and Mother Earth; common but differentiated responsibilities; obligations of states to promote integral and sustainable development of natural systems; and ethical, individual and collective duties to protect ecosystem functions. He referred to already developed tools, including indicators, a registry of natural systems, a holistic information and monitoring system, as well as economic instruments for environmental regulation, such as local funds and taxes for restoration.

In the ensuing discussion, participants addressed: moving from the protected area to the biocultural landscape concept, promoting conservation with human benefits; and recognizing the full range of ecosystem values, both intrinsic and utilitarian.

Panelists then discussed how to move forward amid competing values and interests. Sekhran emphasized strong leadership, citing the long-term benefits derived from protected areas and sustainable policies promoted in Costa Rica during the 1970s. Cox and Hickey underscored the need to exchange information and improve understanding of different values and perspectives through engagement with policy-makers, industry,



L-R: Pavan Sukhdev, Founder and CEO, GIST Advisory PVT LTD; Bob Watson, Co-Chair of the UK National Ecosystem Assessment; Sian Sullivan, Birkbeck College, UK; Edgar Selvin Pérez, Director, National Council for Protected Areas, Guatemala; Valerie Hickey, Wealth Accounting and the Valuation of Ecosystem Services, World Bank; Nik Sekhran, UNDP; Anthony Cox, Head of the Climate, Biodiversity and Water Division, OECD; and Diego Pacheco, Head of Delegation, Bolivia

consumers, and civil society. Sukhdev called attention to the importance of synergies, in addition to trade-offs, for example, among biodiversity, climate mitigation, and flood protection. Cox concurred, adding that the water and climate policy communities are also eager to find and work towards shared synergies with the biodiversity community.

Stanley Asah, University of Washington, US, presented on the role of social sciences in achieving the Aichi targets. He argued that biodiversity conservation is about human enterprise, yet policy makers don't readily discuss human behavior. He mentioned that humans value, claim and use ecological resources in several ways, and that politics remain the main engine of social action. Persuasive advertisement, for example, was appointed as a useful tool to motivate people to join the biodiversity cause. Asah underscored, *inter alia*, that: values and beliefs are plural and dynamic; different conditions and social insecurity can affect conservation; education and financial incentives alone do not shape behavior; biodiversity should be considered an element of well being; and many biodiversity institutions frequently disregard local realities and power relations. In conclusion, he stated that the human ego motivates people to act in favor of environmental causes and that behavior change is not difficult. He said investing time to understand human motivation, as well as politics, are essential in this endeavor.

Alessandra Alfieri, UN Statistics Division, presented on the UN system of environmental economic accounting. She recalled that the Rio+20 Outcome Document recognized the need for measures of progress to complement GDP and that the UN Statistical Commission was requested to launch a programme of work in this regard. She outlined challenges for transformational change of the statistical community, including the need to engage with policy makers and the business sector, and bring statistical decisions into the political process.

Alfieri presented: the 2012 System of Environmental-Economic Accounting (SEEA) Central Framework, which is elevated to an international standard that countries are encouraged to implement; the implementation strategy adopted by the UN Statistical Commission in March 2013 and development of a data reporting mechanism; and the experimental ecosystem accounts, which promote an integrated measurement for the environment and complement the Central Framework. She highlighted the need to address the interrelations between economy, environment and society through linking the data, as well as visualize and communicate the story derived from the statistics. She finally presented the research agenda endorsed by the Statistical Commission, addressing five possible streams on ecosystem conditions and services: geospatial, valuation, policy applications and communications.

Pushpam Kumar, UNEP, provided an overview of the Inclusive Wealth Report (IWR) 2012, a joint initiative of UNEP and the UN University International Human Dimensions Programme (UNU-IHDP). Kumar said dominant economic metrics, like the GDP, are inadequate measures of wealth and human well being, and elaborated on the merit of alternative metrics based on sustainable income, genuine



Pushpam Kumar, UNEP

savings or adjustment-based approaches. He described how the IWR 2012 improves on GDP with a comprehensive measurement of natural, human, and social capital, adding that the upcoming IWR 2014 report will expand from 20 to 100-150 countries. He further noted that the IWR's measurements of natural capital offer meaningful information for the Aichi targets, including in the areas of fossil fuels, fisheries, and forest resources.

Anantha Duraipapp, UNU-IHDP, provided additional details on the theoretical basis of the report, which redefines wealth as the stock of productive capital that society can use to generate human well being. He said the IWR 2012 report contained surprising conclusions, such as the finding that the depletion of natural capital is producing diminishing rates of return for human well being in many countries, as well as the revelation that data on natural capital is often more complete than data on social capital. Duraipapp further explained that the report offers insights on key policy questions, such as the sustainable rate of consumption of society's productive base and the identification of key investments to strengthen that base.

ALIGNING POLICIES, INCENTIVES AND BUSINESS WITH SAFE ECOLOGICAL LIMITS

The session was held on Wednesday and chaired by Carina Malherbe, Department of Environmental Affairs, South Africa.

Rachel Kyte, Vice President for the Sustainable Development Network, World Bank, presented the World Bank's view on the need to balance economic and environmental interests. She noted that economic growth has depleted natural capital and has concentrated wealth at many people's expense. Highlighting increasing understanding among governments, she urged for a change in our approach to natural capital, so that it becomes a capital asset. She explained the tool of adjusted net saving, as a sustainability indicator building on the concepts of green national accounts and providing the necessary baseline measure, and the concept of natural capital accounting, focusing on the World Bank's work through WAVES. On climate change, she noted that preparations for an increase in temperature by 2 degrees Celsius needs to invest in the resilience of the poor, who depend to a large degree on natural capital.

Paul Leadley, University of Paris, France, presented on systems ecology and the identification of safe ecological limits at different scales. He stressed the importance of understanding safe ecological limits and how this knowledge relates to policy-making. He showed that lost species put ecosystems in danger, but that science alone is not enough to define precise tipping points for policy-makers, whom he suggested should be included in the process. He noted that, particularly for biodiversity, scientific uncertainty remains high and that climate change exacerbates its complexity. However, he argued that defining safe limits is vital, because uncertainty of thresholds leads to low cooperation in avoiding environmental



Session Chair Carina Malherbe, Deputy Director of Resource Economics, Department of Environmental Affairs, South Africa

degradation. He concluded recalling that Aichi target 6 on fisheries is an example in which “safe ecological limits” were taken into account.

Arne Geschke, University of Sydney, Australia, presented a study on trade and biodiversity published in *Nature*. Noting that local causes for biodiversity threats, such as deforestation and unsustainable fishing, are well understood, he said the study aimed to assign responsibility for threats driven by economic interest, in particular the export of goods and services to the final consumer. He presented two main questions: Is there a more integrated, universal approach to understanding the structure of the global economy, instead of analyzing supply chains individually? Is there a way to assign particular biodiversity threats to a specific final consumer, once the economic structure has been modeled?

He explained the analysis, including: development of a multinational input-output table reconciling data from more than 10 sources; introduction of species threats, using data from the IUCN Red List; and analysis of 5 billion supply chains. He concluded that developed countries are net importers of species threats, while developing countries are net exporters, meaning that developed countries drive the species threats taking place in developing countries. He noted that the outcomes can be used as a basis for policies that address international trade driving species threats, as well as for offering more transparency and raising public awareness regarding the biodiversity implications of certain products, such as coffee and palm oil.

Edgar Hertwich, Norwegian University of Science and Technology, spoke about how the study of industrial ecology provides policy-relevant insights into the unintended environmental impacts caused by the production, transport, and consumption of natural resources. Hertwich elaborated on how an indicator called the ecological footprint can serve as a tool for industrial ecologists to quantify and communicate national-level environmental impacts in an integrated manner by combining international trade, land use, and greenhouse gas emissions in a single metric. Hertwich also noted that industrial ecologists conduct micro-level studies of the resource consumption of particular industries, highlighting work on new European standards for the carbon footprint of individual products. He concluded that biodiversity protection requires smaller footprints, and that industrial ecology can help understand where footprint reductions are possible, in particular in the context of international trade.

Rob Alkemade, Netherlands Environmental Assessments Agency (PBL), presented on the state of knowledge within the fourth edition of the Global Biodiversity Outlook (GBO-4). He said GBO-4, to be published in 2014, will provide a mid-term evaluation of the implementation of Aichi targets, comprising: the state and trends of biodiversity; a review of national reports and NBSAPs; and a scenario analysis for achieving the Aichi targets and the long-term vision of the Strategic Plan 2011-2020. He outlined questions to be addressed, including: whether we are currently on a path to meet the Aichi targets; what the effects on biodiversity and ecosystem services will be if the targets are reached; if the 2050 vision is attainable under plausible socioeconomic scenarios; to what extent achieving the Aichi targets would help reach the 2050 vision; what are the trade-offs and synergies between the Aichi targets; and what is the contribution of achieving the Aichi targets and the 2050 vision to other development goals.

Alkemade noted that possible pathways to achieve the targets and vision are related to global technology and decentralized solutions or consumption change, and presented preliminary conclusions, including that: meeting

the Aichi targets will contribute substantially to slowing down biodiversity and ecosystem degradation; most scenarios however project continuing degradation; pressures to biodiversity are most strongly related to agriculture, forestry, water management, fisheries and energy; and therefore reducing pressures needs these sectors to cooperate in search of mutual benefits.

PARALLEL SECTOR PERSPECTIVES: ALIGNMENT OF POLICY MIXES FOR CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY ACROSS SCALE



Arni Mathiesen, Assistant Director-General, Fisheries and Aquaculture Department, FAO

On Wednesday, Árne Mathiesen, Assistant Director-General, Fisheries and Aquaculture Department, FAO, introduced the parallel sessions on forestry, fisheries and agriculture. He stressed that strong sectoral and cross-sectoral policies are essential for mutual success of these sectors due to their interlinkages, adding that such policies should be implementable, inclusive,

democratic, science-based, and accountable. He lamented that where policies do exist, they are often underfunded, overlooked and poorly implemented on the ground. He said the solutions therefore call for improved governance through better dialogue among stakeholders at all levels, in particular with the business community. Mathiesen further described how effective governance rests with improved management systems, decision-making, science, surveillance, enforcement, and information collection and accounting. Opportunities for improved policy-making and governance already exist, he said, elaborating on existing programs, objectives, and synergies among forestry, fisheries and agriculture, *inter alia*, in the Strategic Plan, Aichi targets, Rio+20 Outcome Document.

FOREST MANAGEMENT AND BIODIVERSITY:

Carlos Manuel Rodríguez Echandi, Ministry of Environment, Costa Rica, chaired the session, which included presentations on: payments for ecosystem services (PES) in Costa Rica, ecological fiscal transfers



Carlos Manuel Rodríguez Echandi, Vice President, Conservation International

(EFTs) in Portugal and Brazil, and economic instruments with regulation for REDD+ in Brazil.

Rodríguez stressed three factors behind the success of PES in Costa Rica: mapping and addressing perverse incentives that the development programmes and policies of past decades created to expand agriculture;

reforming institutional structures to enable mandates and mindsets that conceive of conservation as an economic good, rather than an economic burden; and creating a

politically sustainable legal and institutional framework for PES.

Felipe Carazo, Executive Director, FUNDECOR, described the role of his organization in testing and implementing PES in Costa Rica. He said the country's PES programme has an oversupply of landowners interested in joining, and attributed this success to the trust landowners have in the system as an effective instrument for social and rural development.

Adriana Chacón-Cascante, Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), described the evolution of Costa Rica's policy mix from one that encouraged deforestation in the mid-twentieth century to one that encouraged reforestation and a doubling of forest cover during sustained population and economic growth over the last two decades.

Irene Ring, Helmholtz Centre for Environmental Research, explained the conceptual basis of EFTs, which redistribute public revenue from the national and subnational level to local governments in order to compensate the local level for the provision of conservation-related public goods and services. She stressed that EFTs are a tool to minimize transaction costs by leveraging existing finance mechanisms, and to complement, rather than replace, private sector finance.

Rui Santos, New University of Lisbon, Portugal, recounted Portugal's experience with EFTs under the country's Local Finances Law of 2007, which supports conservation through a financial equilibrium fund that creates an "ecological signal chain" by allocating resources to municipalities' general funds. He, however, cautioned of unequal distribution effects across municipalities, because of broader structural issues and the recent economic crisis.

Paula Sarmiento, President, Institute for Nature Conservation and Forestry, Portugal, offered further details on EFTs in Portugal and identified future challenges, including the promotion of a good information policy that allows municipal actors and citizens to know about the municipal budget benefits they receive from EFTs, as well as the need for quality evaluation of designated areas to promote EFT effectiveness.

Rodrigo Cassola, Brazilian Institute of Environment and Natural Resources (IBAMA), spoke on options for federal-state EFT arrangements in Brazil, noting the differences between conditional and general purpose transfers. He added that while the former permits greater subnational autonomy, the latter creates strong incentives for states to implement conservation policies, based on conditional payments allocated on the basis of factors such as protected area coverage, biological importance, fire frequency, and the effectiveness of protection efforts.

André Lima, Amazon Environmental Research Institute (IPAM), raised concerns over rising deforestation rates in Brazil and the weakening of forest protections under the country's new Forest Law. He added, however, that legal strategies exist for reversing these trends, in



Felipe Carazo, Executive Director, FUNDECOR

particular, through robust economic incentives that provide compensation for forest protection on private property and within protected areas.

Maria Fernanda Gebara, Federal Rural University of Rio de Janeiro, Brazil, gave a comprehensive overview of the REDD+ policy mix at a national level in Brazil. She described the purpose, instruments, and beneficiaries of a range of REDD+ policies, concluding that while the policy mix is complementary in principle, success will depend on improved horizontal and vertical coordination at all levels.

Discussions covered various topics, including strengthening provisions for indigenous peoples under the Amazon Fund, overcoming silos that impede the coordination of climate and biodiversity policies, forest certification, and concerns over market-based approaches to REDD+.

On Thursday, Chair Rodríguez summarized discussions. He said that the track record of these economic instruments proves that countries can generate enough resources to support conservation and meet the Aichi targets. He noted that there was little discussion of overseas direct investment, which should be reserved for targeted capacity building and institution building in specific countries. Rodríguez indicated that the experience of Costa Rica and Mexico proves that PES can be politically resilient, replicable and scalable to the national level, clarifying that these countries have implemented the instrument based on direct payments within a regulatory framework and not market-transactions. He said that EFTs also offered an important tool to direct public finance, and noted that the discussion explored how to maintain such mechanisms during fiscal crises. Rodríguez said the session revealed that REDD+ must be seen in the context of the existing complexities of forest-sector governance, including opposition from entrenched economic and political interests.

BIODIVERSITY IN AGRICULTURE AND FOOD



Åslaug M. Haga, Executive Director, Global Crop Diversity Trust

SECURITY: The session was chaired by Åslaug Marie Haga, Director of the Global Crop Diversity Trust.

Linda Collette, CGRFA Secretary, presented on instruments and mechanisms addressing biodiversity issues in the agriculture sector. She provided an overview of FAO bodies and instruments relevant for biodiversity, including the CGRFA, ITPGR, International Plant Protection Convention and Committee on World Food Security, and highlighted

that implementation of existing instruments can assist with implementation of several Aichi targets, as long as synergy and policy integration are increased.

Laure Ledoux, European Commission, presented the EU perspective on mainstreaming biodiversity in agriculture, providing an overview of recent developments and challenges with regard to the reform of the Common Agricultural Policy, the EU Green Infrastructure Strategy

and its links with sectoral policies, and links with the EU development policy.

Andrea Cattaneo, FAO, presented on policies and institutions to support sustainable agriculture, focusing at the macro and the micro level. At the macro level, he noted that systemic risks, such as the malfunctioning of global markets and loss of ecosystem services, can be addressed by entry points such as improving market and rural governance and environmental norms. At the micro level, which refers to the interface between farmers and the ecosystem, he stressed the need for the right combination of incentives, institutions, and innovation. In the ensuing discussion a participant highlighted the importance of changing consumption patterns.

Participants then heard national case studies related to mainstreaming or using biodiversity in the context of sustainable intensification, food production and food security. Do Kim Chung, Hanoi University of Agriculture, Viet Nam, presented on Viet Nam's framework on biodiversity conservation, agricultural development and food security, including education for integrated pest management, the system of rice intensification, the pesticide risk reduction programme, as well as relevant institutions.

Rogier Eijkens, VECO Indonesia, presented a civil society perspective on agriculture and food security in Indonesia, focusing on palm oil, cocoa and coffee. He discussed the example of the Cocoa Sustainable Partnership, which has resulted in collaboration and synergies between companies, NGOs, farmers and the government, stressing the need for farmers to engage in business-oriented organizations. He finally identified a "huge potential" for including sustainability principles into smallholder agricultural production. Areepan Upanisakorn, Department of Agriculture, Thailand, presented the use of integrated pest management and biological control agents to control pest outbreaks in Thailand, which involved development of a government roadmap, educational activities in farmers' schools, production of natural enemies by the national Pest Management Center, and establishment of community pest management centers.

Rodger Mpande, UN University Institute of Advanced Studies, presented a recently initiated case study on pollination valuation in Africa. He then referred to the interface between practice, science and policy, calling for coordination at the national level and stressing the need to translate globally-agreed institutional reforms to national-level action. Patrick Mulvany, Practical Action, gave an NGO perspective on biodiversity for food and agriculture. Highlighting that industrial agriculture erodes agricultural biodiversity, he analyzed drivers of loss, including: industrial models of production and harvesting; restrictive laws, including intellectual property rights; corporate power and market concentration; private sector privilege and commercial contracts; and disruptive technologies. He called for: changing the power structure through inclusive participation in decision-making, particularly of farmers; ensuring coherence among relevant international treaties; and promoting food sovereignty.



Rogier Eijkens, VECO
Indonesia

In the ensuing discussion, participants addressed, among other issues, the role of the World Trade Organization (WTO) with regard to agricultural subsidies, the need to protect farmland against conversion to other uses, and biological pest control methods.

On Thursday, Chair Haga offered a summary of discussions highlighting that: due to population growth and the need for an increase in food production in the face of increasingly unpredictable weather, agriculture is facing the most profound challenges in its history; biodiversity in agriculture is overlooked and not satisfactorily valued; in terms of global governance, international agreements and institutional arrangements exist, but implementation and policy coherence are key challenges; case studies indicate that companies threaten agricultural biodiversity, for instance through concentration in the seed sector, but under conditions some companies may also be drivers of positive change; and farmers are key to saving agricultural biodiversity, and they should be included in decision making and their knowledge and skills valued.

BIODIVERSITY IN FISHERIES AND OCEAN MANAGEMENT: Johan Williams, Chair of the FAO Committee on Fisheries (COFI) and Specialist Director, Norwegian Ministry of Fisheries and Coastal Affairs, chaired the session.

Fabio Hazin, International Commission for the Conservation of Atlantic Tunas, Brazil, provided an overview of the legal background of fisheries protection at the international level. He affirmed that food production must be balanced with an acceptable level of impact on the ecosystem. To improve fisheries, he said, there is a need to expand retention bans, time-area closures and the use of more selective fishing gear. He mentioned that CITES can be a useful complement to ongoing work conducted by fisheries institutions and stressed that the main challenge is to move from single-species fisheries management towards a full-fledged ecosystem-based fisheries management.

Sybille van den Hove, Autonomous University of Barcelona, Spain, presented on dilemmas in the deep seas highlighting that they are relatively unexplored, little understood and, consequently, represent a challenge to global governance. She noted that the deep sea is in danger due to, for example, shipping, mining, overfishing, and waste dumping, adding that an ethical dimension must be considered and that values are not necessarily established by monetary terms. She discussed the ethical dilemmas of economic growth, which often disregard natural capital, notably in the context of high risks and uncertainty, and concluded saying that we do not manage ecosystems, but our relationship to them.

Phan Thi Van, Head of Research Institute for Aquaculture No.1, Viet Nam, described the status of the aquaculture sector in Viet Nam recalling that seafood is essential for this country. She underscored that the shrimp industry has significantly impacted natural ecosystems, as it converts tidal areas, wetlands and mangroves into farms. She also noted that 40% of aquaculture species are exotic and drew attention to an imbalance in the rapid development of aquaculture to gain economic growth in Viet Nam. To balance the sector, she proposed the inclusion of biodiversity considerations.

Susan Hanna, Oregon State University, US, argued that there are direct economic benefits of rebuilding fishery

stocks. However, she said that the core of the challenge is to change the direction of depletion tendencies, noting that rebuilding a fishery – an integrated biological system – is a much more complex task than rebuilding a fish stock. Drawing from debates at the OECD, she highlighted the importance of understanding the causes of overfished stocks and of considering distributional effects, incentives, time horizons and institutional frameworks. She also noted the importance of involving stakeholders from the beginning to enhance effectiveness and legitimacy, and of explicitly taking into account economic uncertainty. In conclusion, she said that allocation and incentives, two major economic notions, are guiding concepts to indicate success.

Peter Gullestad, Norwegian Directorate of Fisheries, presented on the long-term sustainability of fisheries in Norway between 1970 and 2013. Following an overview of Norwegian management regime accords throughout this period, he argued that the fishery industry must be profitable without subsidies and respect ecological constraints in order to attain social benefits.

Anthony Charles, Saint Mary's University, Canada, recalled that oceans are the toughest test ground for world governance and that the cod fisheries collapse provided several alerts for researchers and the international community. He argued that fishermen are also businessmen who offer valuable economic perspectives from a community or regional perspective. He then called for “broader economics,” underscoring: regional and community economics rather than an individual and sectoral approach; non-monetary values; distribution of costs and benefits; and natural capital accounting and valuation of ecosystem services. He suggested that more social evaluation of biodiversity is needed, including better ways to capture people's values.

The session continued under the title “Marrying fisheries and environmental concerns.”

Barrie Deas, National Federation of Fishermen's Organisations, UK, discussed how to integrate fisheries and environmental policy through the industry perspective and his experience in the EU. He affirmed that “good intentions” are not being translated into concrete action and argued that prescriptive practices are particularly hard to implement in the case of fisheries. He noted that the EU failure on fisheries management is a reflection of lack of political will and that collaboration on sensitive information is necessary.

Karoline Andaur, Head of Marine Programme, WWF-Norway, discussed the problems of fisheries depletion from an NGO perspective. She said that a key problem is the tendency to tackle the fishery sector separately from the debates on ocean governance. She stated that the environment should be preserved regardless of monetary considerations and stressed the importance of favoring a holistic approach, instead of sector-specific management. She drew attention to the difficulties of communicating the term “ecosystem-based approach” to non-experts.

In the ensuing discussion, participants raised: the need for long-term frameworks of cooperation; the need for enhanced cooperation between the Arctic countries and the EU; and use of pesticides in aquaculture.

Gullestad mentioned that an important lesson from the Norwegian experience is that effective fisheries management can alleviate poverty, adding that, despite

insufficient work, there is positive progress. Andaur said other methods are being used in Norway to move aquaculture away from pesticides. Hazin noted that there are inconsistencies between IUCN and Norway's “red lists” and that the challenge is to assist countries in developing management policies. Charles mentioned that the local level deserves further research and drew attention to his studies on coastal community conservation around the world, which provide examples of success.



Ines Verleye, Senior Biodiversity Expert, Federal Public Service for the Environment, Belgium

On Thursday, Chair Williams presented one key message: “Care for the oceans and the oceans will care for us.”

TRAJECTORIES TOWARDS 2020

Ashgar Fazel, ECO Institute of Environmental Science and Technology, Iran, and former SBSTTA Chair, chaired this session, held on Thursday.

Ines Verleye, Federal Public Service for the Environment, Belgium, presented on resource mobilization for the Aichi targets, highlighting the need for a structured, country-based approach to enable ministries of environment and other biodiversity actors to use globally-generated information nationally. She provided an overview of CBD provisions and COP decisions on resource mobilization, including the latest decision XI/4 which calls for doubling international biodiversity funding to developing countries, combined with a country-driven prioritization of biodiversity in national and development plans. She stressed the need for reinforced action at the national level, including country-specific resource mobilization strategies.

Verleye highlighted that: resource mobilization for the Aichi targets needs to take mainstreaming of biodiversity



Katia Karousakis, OECD

to a higher level at both the global and domestic levels; many important initiatives are generating the necessary concrete information on possible win-win scenarios for biodiversity with sectors; such information needs to be shared in a structured way; and capacity building for country-specific

resource mobilization strategies needs to be considered in combination with other capacity-building exercises under the CBD, such as those related to NBSAPs.

Katia Karousakis, OECD, shared the results from an OECD study on “Scaling-up Finance Mechanisms for Biodiversity.” Karousakis provided a systematic review of the scope, source, and principles of the six “innovative financial mechanisms” covered under the CBD's Strategy for Resource Mobilization: environmental fiscal reform, PES, biodiversity offsets, markets for green products, biodiversity in climate change funding, and biodiversity in international development finance. She identified key questions for the design and implementation of financing

mechanisms that achieve environmental effectiveness, cost-effectiveness, and distributional equity. She highlighted particular challenges to each of the mechanisms, for example, the need for PES and biodiversity offset mechanisms to establish business as usual baselines and monitoring, verification, and reporting systems to support programme evaluation.

Karousakis further stressed the importance of environmental and social safeguards in the form of standards and performance indicators, grievance mechanisms, environmental and social assessments, project screening, and stakeholder participation. Karousakis concluded that all six of the mechanisms can play a role in scaling-up biodiversity finance by supporting some combination of revenue raising, mainstreaming, and achieving least-cost results. She added that more attention should be given to the design and implementation of these mechanisms through pilot programmes, phased-approaches, and regular reviews that facilitate incremental adjustments that can be scaled-up over time.

Claudia Ituarte-Lima, Resilience and Development Programme (SwedBio) at Stockholm Resilience Centre, Sweden, examined the state of safeguards for biodiversity. She highlighted that the concept of safeguards has expanded to new arenas and has become a multifaceted notion, which varies according to constituencies. She noted that indigenous peoples, for example, when discussing safeguards regularly refer to the right to participate in decision-making. She distinguished between substantive and procedural safeguards, and suggested ending a defensive approach on safeguards and focusing on a holistic method for consensus building to reconcile biodiversity with other priorities. She concluded by noting that this debate can contribute to addressing biodiversity loss.

Brigitte Baptiste, Director General, Humboldt Institute, Colombia, presented on the ecological dimension of developing sustainable development goals, focusing on the understanding of “awareness.” She began from the wording of Aichi target 1, which states that by 2020 people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably, and then presented the story of an indigenous grandfather living in the Colombian Amazon. She wondered what kind of awareness and ecological literacy the urban population needs to understand what lies behind sustainability, in contrast to indigenous peoples with an intimate knowledge of ecosystem functions. She stressed the need to take different knowledge models and values into account when building communication and education strategies, and



Brigitte Baptiste, Director-General, Humboldt Institute, Colombia

offered ideas for discussing awareness of the ecological dimension of the sustainable development goals, such as focusing on social learning processes in multicultural settings. She noted that communication is sometimes used as merely a sales strategy, therefore losing credibility, and added that it often targets the consumer, noting that citizens are more than consumers and that biodiversity’s ultimate

service may be linked to the wish “not just to live well, but with a meaning.”

Lucy Mulenkey, Director, Indigenous Information Network, said that while the Strategic Plan is crucial for mainstreaming biodiversity into government policy, indigenous peoples and local communities already have a long history of mainstreaming biodiversity into their own lives. She argued that governments should further recognize these groups for the significant contributions to, and knowledge about, the conservation and sustainable use of biodiversity. Nevertheless, Mulenkey said there has been significant progress towards acknowledging these contributions, citing the International Indigenous Forum on Biodiversity as one key site where indigenous people can gather and speak as a single voice in the CBD and other important venues. She pointed to local and regional workshops and trainings as other important sites for engaging indigenous peoples and their perspectives in the implementation of the Strategic Plan. She lamented, however, that funding constraints continue to limit indigenous peoples’ participation in events such as the present meeting. Mulenkey also welcomed the beginning of translation of key CBD texts into local languages, as recommended by CBD COP 11.

David Cooper, CBD Secretariat, expressed his appreciation for the outcomes of the Trondheim Conferences and underscored that the post-2015 agenda and the discussions on sustainable development goals are major opportunities to mainstream biodiversity into sustainable development. While recalling the importance of biodiversity, including the spiritual and cultural benefits, he mentioned that target implementation requires flexibility depending on specific national contexts.

He then presented a model including four types of goals that could include biodiversity in the ongoing discussions of SDGs: goals on basic needs, such as food and water security, in which there is a clear link with the need of functional biodiversity ecosystems; goals on human well being, for example, education, equality and gender, which are less directly related to biodiversity, but contribute to its management; goals related to the maintenance of the planet’s life support, including healthy and productive ecosystems, which could be based on the 2050 vision of the Strategic Plan and target 14 on ecosystem restoration; and overarching goals, such as poverty eradication and green economy, that could contribute to ongoing discussions about the need to move beyond GDP to measure societal progress.

During the discussion, Cooper preferred incorporating biodiversity concerns into other development goals, rather than aiming for a separate biodiversity target.



David Cooper, SCBD

ROUNDTABLE DISCUSSIONS

AICHI TARGETS 1 AND 2: On Tuesday afternoon, participants took part in 14 parallel roundtables where they considered a set of identical questions related to Aichi targets 1 (awareness of biodiversity values) and 2 (integration of biodiversity values into national and local development and

poverty reduction strategies and planning processes and incorporation into national accounting and reporting systems). The roundtables submitted their findings and conclusions in real time to a team of facilitators via a web application.

Some roundtables addressed Aichi target 1 by answering the following questions: how we can increase awareness of the meaning and values of biodiversity and of the need to actively conserve and sustainably use biodiversity; and how we can better utilize formal and informal learning. On Aichi target 2, other roundtables addressed: how we can get the biodiversity and economic planning sectors to identify how ecosystem services contribute to other sustainability goals; and how we can get the biodiversity and economic planning sectors to assess and integrate biodiversity values and actions into national planning, poverty reduction, accounting and reporting.

Rapporteur Jerry Harrison then summarized the first part of the exercise. On awareness raising, he said that a great number of recommendations indicated the need to enhance training and education at all levels, emphasizing a focus on the youth. He said others noted: the importance of adapting communication strategies according to the targeted audience, taking into account, for example, age; and improved means of learning, such as celebrations, field trips and learning by example. On integration of biodiversity values, he noted: fostering a common language on biodiversity; promoting inter-sectoral dialogues; and nominating biodiversity ambassadors. He concluded reasserting participants' concern to consider biodiversity as a development, rather than environmental issue.

The roundtables then addressed two additional questions: how can biodiversity data be used to measure societal progress beyond GDP; and how can the UN Decade on Biodiversity be used to promote biodiversity protection. Harrison then presented a synthesis of recommendations. On how to promote engagement through the UN Decade on Biodiversity, he pointed to recommendations to use public relations to promote biodiversity, including through social media, games and special events, and the presentation of historical views on nature of different groups to the wider public. He also highlighted the suggestion to include more activities and issues related to biodiversity in the UN General Assembly.

On the use of data on biodiversity to measure societal progress beyond GDP, Harrison shared recommendations to: improve the knowledge base, including through syntheses and analysis on the costs of inaction; create new metrics and promote metrics, like the ecological footprint, for measuring the value of biodiversity; and conceptualize biodiversity as a life insurance policy for society.

AICHI TARGETS 3 AND 4: On Thursday afternoon, participants took part in a second roundtable exercise: eight parallel roundtables considered questions on Aichi targets 3 (incentives) and 4 (sustainable production and consumption).

On Aichi target 3, all tables were asked to respond to two questions in the context of: fisheries and ocean management; agriculture and food security; and forest management: which policy mixes are supporting biodiversity and how, per region or country; and how can we tip the balance in favor of biodiversity by transforming incentives and subsidies, per region or country?

On fisheries and ocean management, participants highlighted, among other issues: promoting regional collaboration to protect marine and lake life; robust policies to enforce sustainable use, including subsidies, quotas and limits; investing in research and development, and technology application; community-based management; supporting fishermen's rights, including property rights; and banning discards. They recommended, for example: providing incentives for not fishing, including other means of livelihoods; establishing certification systems for sustainable fishing; increasing taxes on big companies; harmonizing regional agreements; ensuring synergies between global agreements; enforcing national legislation; and shifting fishing practices.

On agriculture and food security, participants highlighted: making use of direct economic incentives to end-users to improve the status of rural communities; developing structural incentives, policies and strategies, including for organic food markets; establishing clear legal frameworks, including for use of GMOs; enhancing knowledge and innovative ways to build capacity to improve the use of more sustainable agricultural practices; and supporting innovative green farming methods and ecotourism. They recommended, among others: reducing harmful incentives, including incentives for highly intensive farming; strengthening incentives that promote biodiversity values, such as tax benefits for sustainable farming; improving the regulatory framework and production systems, including through the use of labeling; and encouraging the integration of international policies at the national level, for instance through NBSAPs.

On forest management, participants highlighted: systemic collaborative management, with a focus on the whole landscape and the market process; strategic combinations of incentives; fight against invasive alien species; market-based tools such as valuation of ecosystem services; certification; land-use practices that benefit biodiversity; and conservation and restoration as a tool for protecting the most valuable forest areas. They recommended, *inter alia*: transforming incentives



Roundtable discussions on the Aichi Targets 3 and 4

and taxation mechanisms for forest management; removing perverse incentives and ensuring compliance by logging companies; regularizing and harmonizing principles, goals and rules of forest management and aligning with local policies and ownership schemes; developing stronger accountability and enforcement mechanisms; investing in, and subsidizing, green forest enterprises and ecosystem services; and promoting non-timber values of forests and forest-dwelling communities.

Then some participants addressed how biodiversity should be reflected in, and contribute to, the development and achievement of sustainable development goals. At the same time, others worked on target 4, and were asked to address the issue through the eyes of economic planning administrations and business, on the basis of the questions: what is preventing you from using resources sustainably and why; and which efforts are you willing to make and whose support you will need; The session also provided feedback on main lessons learned during the conference, indicating benefits such as networking, increased energy, and changing views about biodiversity and its importance. The conference model was considered highly satisfactory, with one comment indicating a desire for more interactive dialogues.

On sustainable production and consumption, participants highlighted, among others: poor operationalization of ongoing programmes; inadequate education and scientific data; and lack of institutional capacity and appropriate technologies. They stressed the need for: harmonization of policies and legal frameworks; enhancement of technical and financial support; improvement of inter-sectoral communication; better understanding of the international process of negotiation; and improvement of governance, in particular related to legislation and engagement of the private sector.

On constraints to the business sector, participants indicated a lack of: clear business case; good-practice examples; support and incentives for change; law enforcement; and awareness among the business sector and consumers. Participants underscored the need for: green employment; synergies on sustainability, technology and trade; organizational and behavioral change; and customer and shareholders/board support.

On the integration of biodiversity within the sustainable development goals, it was argued that biodiversity is a solution for urgent issues and must, therefore, be at the core of the SDGs process.

OUR FUTURE, TODAY'S BIODIVERSITY

The session was held on Friday and chaired by Alfred Oteng-Yeboah, National Biodiversity Committee, Ghana.

Conference Co-Chair Baste informed participants that the newly released report of the UN High-level Panel on the Post-2015 Development Agenda entitled "A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development" includes a set of 12 goals, with the ninth goal (managing natural resource assets sustainably) making reference to safeguarding ecosystems, species and genetic diversity.



Alfred Oteng-Yeboah, Professor, National Biodiversity Committee, Ghana

Jane Smart, IUCN, presented on IUCN knowledge products for implementing the Aichi targets. Noting that IUCN's programme 2013-2016 is underpinned by the Aichi targets, she highlighted that knowledge is key for filling policy implementation gaps. She also focused on six IUCN flagship knowledge products: the IUCN Red List of Threatened Species; the Protected Planet, powered by the World Database on Protected Areas; the Key Biodiversity Area Standard, which attempts to bring together existing international approaches for identifying areas of importance; the IUCN Red List of Ecosystems; the IUCN Natural Resource Governance Framework, aiming to assess effectiveness of legal and institutional arrangements impacting natural resources; and the IUCN Human Dependency on Nature Framework, which aims to quantify the nature and scope of household and community reliance on nature.

Hossein Fadaei, Acting Secretary of UN Environment Management Group (EMG), UNEP, presented the work of the EMG noting that its main function is to enhance coordination among UN agencies at the highest level. He said that the main advantages of this group are the opportunity to create confidence, leadership, follow-up and formulation of a balanced approach among UN leaders. He noted the positive results of recent EMG work on biodiversity, and mentioned that human well being became a guiding theme for all clusters, such as climate change, biodiversity, land and water. He underscored, however, the need to link the activities of this institutional exercise to the national level through the support of countries, for example, via their NBSAPs. Marci Yeater, Secretariat of the Convention on International Trade in Endangered Species (CITES), called for strengthened involvement of CITES in future Trondheim conferences. Salvatore Aricò, UNESCO, said that multi-stakeholder cooperation is essential to mainstream biodiversity, and mentioned the contributions of the CBD Strategic Plan as a guiding tool.

Nancy Colleton, IUCN Commission on Education and Communication, offered insights on how to communicate the science and value of biodiversity in a way that motivates action. She highlighted that many of the scientific concepts discussed at the conference are complex and not easily communicated. This complexity, she said, means that scientists must think carefully about how to induce the kind of behavior change they want. In order to address this communication challenge, she suggested tapping into the wealth of existing knowledge about how information motivates human behavior. As an example, she pointed to IUCN's Love Not Loss campaign, which inspires change by humanizing, personalizing, and publicizing positive stories about nature,

and urged further efforts to engage thought leaders for effective communication.

CO-CHAIRS' REPORT

On Friday, Rapporteur Jerry Harrison, UNEP-WCMC, presented the Co-Chairs' report titled "Moment of Opportunity," highlighting that the report attempts to capture the key messages arising from the different sessions and calling upon participants to communicate these messages



Rapporteur Jerry Harrison, UNEP-WCMC, presented the draft report



L-R: Conference Co-Chairs Tone Solhaug, Ministry of Environment, Norway and Ivar Baste, Directorate for Nature Management, Norway; with Rapporteur Jerry Harrison, UNEP-WCMC.

and learn from them. In the ensuing discussion, participants noted that mainstreaming biodiversity requires: adequate conditions at all levels for capacity building and technology transfer to the developing countries; engaging business; and improved understanding of the concept of natural capital accounting, as well as its benefits. It was also stressed that the conference represented an effective paradigm for organizing people and driving biodiversity-related work.

CO-CHAIRS' REPORT: Moment of opportunity: The Co-Chairs' report provides a summary of the Conference proceedings, as well as key messages arising from the Conference sessions.

Under the title "Seizing the opportunity to invest in biodiversity for human well being and development," key messages include:

- it is increasingly recognized that biodiversity and ecosystem services are fundamental to human well being, playing an essential role in food security and supporting many of the world's poorest people;
- the current financial climate in many parts of the world might be considered a "wake-up call" that highlights the unsustainable nature of many human activities;
- evidence shows that human behavior can be changed with the right motivations, and we need to work with those who understand how;
- biodiversity and ecosystem services play such a fundamental role in human well being that they should be reflected in the SDG framework;
- engagement with the SDG process can draw on the fact that there is already a Strategic Plan for Biodiversity, adopted by governments and recognized by many MEAs and UN bodies;
- whatever the final form of the SDGs, indicators and metrics facilitating assessment of progress in their achievement will be needed, together with baselines for comparison; and
- resource mobilization for the Aichi targets needs to take mainstreaming of biodiversity to a higher level, as this will determine the availability of biodiversity funding at both domestic and global levels.

Under the title "recognizing and measuring the true values of biodiversity," key messages include:

- decisions made at all levels will lead to more sustainable outcomes if there is a clear recognition not only of who benefits from the decisions made, but also who carries the environmental costs;
- national and company accounting need to take full account of the costs of converting natural assets, as well as the revenues gained;

- when use is made of biodiversity and ecosystem services there needs to be a true understanding of the value of using those resources, including all externalities;
- methods for recognizing the value of natural capital need to be more widely adopted and integrated into national reporting, reducing the reliance on GDP;
- an understanding of the value of ecological infrastructure should result in society being more prepared to pay the real costs of investing in it; and
- there are excellent examples of success, and these examples need to be drawn on so as to apply lessons learnt more widely.

Under the title "understanding the interplay between ecology, economy and society," key messages include:

- the establishment of governance arrangements, with active coordination between sectors combined with appropriate safeguards is at least as important as putting complementary policies in place;
- governments have fundamental responsibilities that essentially encompass environment, economy and society, and they should take a lead in integration across sectors;
- development of common objectives across sectors, and increased efforts to develop and implement mutually supportive activities are essential;
- at some point trade-offs inevitably need to be made between the needs and interests of different sectors;
- there are excellent examples of the benefit of removing incentives and subsidies that are harmful to biodiversity and ecosystem services, and this work needs to be built on;
- strong common messages will promote a more coherent approach among different sectors at the international level, leading to a more consistent support and advice at the national level;
- effective communication is essential in increasing collaboration and cooperation between sectors;
- a much stronger multicultural approach to understanding values, and to including them in communication and education communication and education strategies should be considered;
- increased understanding of the interactions between environment, economy and society could also create the enabling environment for accessing further resources for achieving the Aichi targets; and
- coherence of biodiversity and social safeguards across international institutions and within the CBD framework can be a means of addressing underlying causes of biodiversity loss and promoting equity.

Under the title "aligning policies, incentives and business within safe ecological limits," key messages include:

- improving processes for capture, management and synthesis of data, information and knowledge are important in providing the basis for decision making;
- it is important to use and build on existing knowledge products, tools and experience, and to find ways to share knowledge and experience widely;
- major new datasets and analyses are providing tools which lead to improved understanding of the impacts of a global economy and trade;
- our understanding of “safe ecological limits” is increasing, but we need to ensure that their implications for policy makers are more clearly understood; and
- the exploration of different scenarios can be very valuable for exploring and communicating the potential impacts of a range of policy options.

An annex includes ideas for implementing the Strategic Plan identified by participants during the roundtable exercise.

CLOSING SESSION

On Friday, Yeon-chul Yoo, Ministry of Environment, Republic of Korea, recognized the contributions the Trondheim Conference has made to biodiversity over the past twenty years, and, in particular, the forthcoming CBD COP 12 to be held in Pyeongchang, Republic of Korea. He urged countries to ratify the Nagoya Protocol, explaining that fifty countries must ratify the agreement for the first MOP to proceed in parallel with COP 12. Yeon-chul identified the two main crises of sustainability as ecological and economic, which the Conference has demonstrated must be approached in a manner that integrates private and public finance, local and national governance, and the conservation and sustainable use of biodiversity. He thanked Norway for its continued care, leadership, and support for biodiversity, saying it stands as a role model for all other countries to follow. He closed by expressing his gratitude for the organization and everyone's participation, saying “Alone we are nothing, but together we are vital.”

Conference Co-Chairs Solhaug and Baste expressed their appreciation to speakers, participants, organizers and co-hosting organizations. They paid special tribute to Peter Schei, founder of the Trondheim Conferences, and closed the conference at 11:40 am.

UPCOMING MEETINGS

IPBES First MEP and Bureau Meeting: Hosted by the Norwegian Directorate for Nature Management, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) will hold the first full Members of the Platform (MEP) and Bureau meeting to implement Decision IPBES/1/2 on next steps for the development of the initial IPBES work programme. **dates:** 1-6 June 2013 **location:** Bergen, Norway **contact:** Makiko Yashiro **e-mail:** makiko.yashiro@unep.org **www:** <http://www.ipbes.net/news-centre11/340-1st-full-mep-and-bureau-meeting.html>

Bonn Climate Change Conference June 2013: This conference will include the thirty-eighth session of the Subsidiary Body for Implementation (SBI 38) and the Subsidiary Body for Scientific and Technological Advice (SBSTA 38), as well as the second part of the second session of the *Ad Hoc* Working Group on the Durban Platform for Enhanced Action (ADP 2-2) of the UN Framework Convention on Climate Change (UNFCCC) **dates:** 3-14 June 2013 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **e-mail:** secretariat@unfccc.int **www:** http://unfccc.int/meetings/bonn_jun_2013/meeting/7431.php

International Expert and Stakeholder Workshop on the Contribution of Indigenous and Local Knowledge Systems to IPBES: Convened by the IPBES MEP and hosted by the Ministry of Environment of Japan, this workshop is co-organized by the UN Educational, Scientific and Cultural Organization (UNESCO) and the UN University (UNU). It aims to: examine and identify procedures and approaches for working with indigenous and local knowledge systems in the framework of IPBES; and review and assess possible conceptual frameworks for the work of IPBES that are based on or accommodate indigenous and local knowledge systems and worldviews. **dates:** 9-11 June 2013 **location:** Tokyo, Japan **contact:** Makiko Yashiro **e-mail:** makiko.yashiro@unep.org **www:** <http://www.ipbes.net/news-centre11/341-expert-workshop-on-indigenous-and-local-knowledge-systems-to-ipbes.html>

INC-Forests 4: The fourth and final session of the Intergovernmental Negotiating Committee for a Legally Binding Agreement on Forests in Europe is slated to complete negotiations for a legally binding agreement on forests. **dates:** 10-14 June 2013 **location:** Warsaw, Poland **e-mail:** INC-Forests@foresteurope.org **www:** <http://www.forestnegotiations.org>

GEF 44th Council Meeting: The Global Environmental Facility (GEF) Council will meet to approve new projects with global environmental benefits in the GEF's focal areas, and provide guidance to the GEF Secretariat and Agencies. A consultation with civil society will take place on 17 June. **dates:** 18-20 June 2013 **location:** Washington DC, US **contact:** GEF Secretariat **phone:** +1-202-473-0508 **fax:** +1-202-522-3240 **e-mail:** secretariat@thegef.org **www:** <http://www.thegef.org/gef/events/gef-44th-council-meeting>

Global Symposium on REDD+ in a Green Economy: The symposium, convened by the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD), will examine lessons learned from pilot activities linking REDD+ to sustainable development and the green economy, aiming to build a stronger business case for REDD+. **dates:** 19-21 June 2013 **location:** Jakarta, Indonesia **contact:** John Prydz **e-mail:** John.Prydz@unep.org **www:** http://www.un-redd.org/REDD_in_Green_Economy_Global_Symposium/tabid/105931/Default.aspx

International Conference on Biodiversity, Climate Change and Food Security: Under the theme “Global Food: From Diversity to Security in Changing World,” this conference aims to develop a common understanding of the impact of climate change and the importance of biodiversity in formulating effective and appropriate adaptation and mitigation strategies for food security. The third High-level Roundtable on the ITPGR will also be organized in the context of this conference. **dates:** 2-4 July 2013 **location:** Bandung, Indonesia **contact:** Indonesian Agency for Agricultural Research and Development **phone:** +62-21-7806202 **fax:** +62-21-7800644 **email:** biocfcs@litbang.deptan.go.id **www:** <http://pangan.litbang.deptan.go.id/highlight/international-conference-on-biodiversity-climate-change-and-food-security>

Informal Working Group on Marine Biodiversity Beyond Areas of National Jurisdiction: The *Ad Hoc* Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction will meet in August 2013, at UN Headquarters in New York, US. It will be preceded by two intersessional workshops that will be convened in New York from 2-3 May and 6-7 May 2013. **dates:** 19-23 August 2013 **location:** UN Headquarters, New York, US **contact:**

UN Division for Ocean Affairs and the Law of the Sea
phone: +1 212-963-3962 **fax:** +1 212-963-5847 **e-mail:**
 doalos@un.org **www:**

<http://www.un.org/Depts/los/biodiversityworkinggroup/biodiversityworkinggroup.htm>

ITPGR GB 5: The fifth session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) will address issues related to implementation of its Multilateral System and the standard Material Transfer Agreement, progress in the Funding Strategy and in particular the Benefit-Sharing Fund, innovative approaches to resource mobilization, a possible programme of work on sustainable use, and farmers' rights. **dates:** 24-28 September 2013 **location:** Muscat, Oman **contact:** ITPGR Secretariat **phone:** +39-06-570-53441 **fax:** +39-06-570-56347 **email:** pgrfa-treaty@fao.org **www:** <http://www.planttreaty.org>

CFS 40: The Committee on World Food Security was reformed to be the most inclusive international and intergovernmental platform for all stakeholders to work together in a coordinated way to ensure food security and nutrition for all. At its 40th session, it is expected to address a series of policy and implementation-related issues. **dates:** 7-11 October 2013 **location:** Rome, Italy **contact:** FAO Secretariat **phone:** +39 06 57051 **fax:** +39 0657055514 **email:** CFS@fao.org **www:** <http://www.fao.org/cfs/en/>

8th Meeting of the CBD Working Group on Article 8(j): The CBD Working Group on Article 8(j) is expected to consider, among other issues, a draft plan of action on customary sustainable use, as well as the terminology related to "indigenous peoples and local communities." An in-depth dialogue will be held on "connecting traditional knowledge systems and science, such as under the IPBES, including gender dimensions." **dates:** 7-11 October 2013 **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/doc/?meeting=WG8J-08>

CBD SBSTTA 17: The 17th meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice is expected to address a series of ecosystem-related and cross-cutting issues. **dates:** 14-18 October 2013 **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/doc/?meeting=SBSTTA-17>

European Forest Week: The week will be celebrated under the theme "Forests, their products and services," and will focus on the contribution of forests to the green economy. The main celebrations will be centered on Metsä 2013, the joint meeting of the UN Economic Commission for Europe (UNECE) Timber Committee and the FAO European Forestry Commission. Additional events will be held throughout Europe. **dates:** 9-13 December 2013 **location:** Rovaniemi, Finland **contact:** Eve Charles **phone:** 41 (0) 22 917 3922 **e-mail:** eve.charles@unece.org **www:** <http://www.unece.org/index.php?id=31600>

ICNP 3: The third meeting of the CBD Intergovernmental Committee for the Nagoya Protocol on access and benefit-sharing (ABS) will address issues related to the ABS clearing-house, compliance, codes of conduct and model clauses and the multilateral benefit-sharing mechanism. **dates:** 3-7 February 2014 **location:** Republic of Korea (tentative) **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

CBD SBSTTA 18: The 17th meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice is expected to address a series of ecosystem-related

and cross-cutting issues. **dates:** 16-20 June 2014 (tentative) **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

CBD WGRI 5: The fifth meeting of the *Ad Hoc* Open-ended Working Group on Review of Implementation of the Convention will convene following SBSTTA 18. **dates:** 27-27 June 2014 (tentative) **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

Biosafety Protocol COP/MOP 7: The seventh Meeting of the Parties to the Cartagena Protocol on Biosafety will address a range of issues related to the implementation of the Cartagena Protocol on Biosafety. **dates:** 29 September – 3 October 2014 **location:** Pyeongchang, Republic of Korea **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

CBD COP 12: The 12th meeting of the CBD Conference of the Parties is expected to conduct, among other issues, a mid-term review of the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi targets. **dates:** 6-17 October 2014 **location:** Pyeongchang, Republic of Korea **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

Nagoya Protocol COP/MOP 1: Depending on entry into force, the first Meeting of the Parties to the Nagoya Protocol on ABS will be held concurrently with CBD COP 12. **dates:** 6-17 October 2014 **location:** Pyeongchang, Republic of Korea **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <http://www.cbd.int/meetings>

GLOSSARY

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|--------|--|
| ABS | access and benefit-sharing |
| CBD | Convention on Biological Diversity |
| CGRFA | Commission on Genetic Resources for Food and Agriculture |
| COP | Conference of the Parties |
| EFT | ecological fiscal transfer |
| FAO | Food and Agriculture Organization of the United Nations |
| GDP | gross domestic product |
| IPBES | Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services |
| ITPGR | International Treaty on Plant Genetic Resources for Food and Agriculture |
| NBSAP | national biodiversity strategy and action plan |
| OECD | Organisation for Economic Co-operation and Development |
| PES | payments for ecosystem services |
| SDGs | sustainable development goals |
| TEEB | The Economics of Ecosystems and Biodiversity |
| UNDP | UN Development Programme |
| UNEP | UN Environment Programme |
| UNFCCC | UN Framework Convention on Climate Change |
| WCMC | World Conservation Monitoring Centre |