

Chairmen's Report

Conclusions and recommendations from presentations and discussions

The sixth Trondheim Conference on Biodiversity

“Getting the biodiversity targets right – working for sustainable development”

1 – 5 February 2010

Hosted by

- Norwegian Ministry of the Environment (MD)

In collaboration with

- United Nations Environment Programme (UNEP)
- Secretariat of the Convention on Biological Diversity (CBD)

- Norwegian Ministry of Foreign Affairs
- Norwegian Ministry of Agriculture and Food
- Norwegian Ministry of Fisheries and Coastal Affairs

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CONCLUSIONS AND RECOMMENDATIONS FROM TRONDHEIM CONFERENCES ON BIODIVERSITY: "GETTING THE BIODIVERSITY TARGETS RIGHT – WORKING FOR SUSTAINABLE DEVELOPMENT"

Trondheim, Norway, 1 – 5 February 2010

Since 1993, the Trondheim Conferences on Biodiversity have provided a valuable forum for science-policy dialogue. The sixth Trondheim Conference was held on 1 – 5 February 2010 in Trondheim, Norway, and gathered more than 300 participants from 100 countries, representing governments, UN entities, the scientific community, and relevant institutions and organizations.

The sixth Trondheim Conference focused on the need for speeding up implementation of the Convention on Biological Diversity (CBD) by setting new targets for the future. Participants examined the status of biodiversity and considered how implementation of the convention could be improved.

The conference program was developed to include relevant scientific presentations, drawing on experiences at different levels and on output from key meetings related to post 2010 targets.

The conference was hosted by the Norwegian Ministry of the Environment in collaboration with the United Nations Environment Program (UNEP) and the Secretariat of the Convention on Biological Diversity (SCBD), and was organized by the Norwegian Directorate for Nature Management (DN).

The outputs of the conference will hopefully be a valuable contribution to negotiations on post 2010 biodiversity targets at the fourteenth meeting of the CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA14) and the third meeting of CBD's Working Group on Review of Implementation (WGRI3), both to be held in Nairobi in May 2010. The conclusions and recommendations of the conference will also be conveyed to the 11th special session of the Governing Council of UNEP and the Global Ministerial Environment Forum, both to be held in Bali, Indonesia, in February 2010, as well as the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity in October 2010. The conference was also a general contribution to the International Year of Biodiversity, and may contribute to other relevant meetings in 2010, including the UN General Assembly Special Session on Biodiversity, the UN General Assembly Special Session on the Millennium Development Goals, the Global Environment Facility (GEF), climate change negotiations under the UN Framework Convention on Climate Change (UNFCCC), the Food and Agriculture Organization, other multilateral environmental agreements, and biodiversity efforts under the G20.

The two conference chairmen, Peter Schei and Finn Katerås, are responsible for the conclusions and rec-

ommendations presented in this synthesis of the conference. These conclusions and recommendations are based on the presentations made during the conference, findings from group discussions, written input and advice from participants. In particular, valuable and constructive input was provided by the 'friends of the chairs'¹.

The chairmen identified twelve major findings and related messages, and these are summarised as follows:

1. The 2010 target has inspired valuable action, but will not be reached in full.
2. Biodiversity loss and degradation of ecosystem services have increasingly dangerous consequences for human well-being, even survival for some societies.
3. Urgent action is needed to address the loss of biodiversity, especially to avoid tipping points.
4. Biodiversity is the living basis for sustainable development.
5. Inaction is more expensive in the long run than investing in action now.
6. Economic development and food security depend more than we realize on biodiversity and on ecosystem services.
7. Biodiversity and climate change are inextricably linked.
8. All parties must strengthen and broaden implementation of the CBD.
9. Now is the time to scale up our science and knowledge.
10. We need to communicate better that biodiversity is fundamental for human well-being.
11. Substantially more resources are needed for capacity building and improved implementation.
12. 2010 calls for new and more strategic biodiversity targets.

In the sections below, supplementary text is provided to illustrate and support these messages.

The conference has hopefully provided insight and inspiration, and all participants are encouraged to use these conclusions and recommendations, and other

¹ A list of the 'Friends of the Chairs' is provided in the full Chairmen's Report.

conference outputs, as appropriate in national implementation and in international co-operation.

The 2010 target has inspired action, but will not be reached in full

Biodiversity is in decline globally, and the rate and scale of the decline is unprecedented. At population, species and ecosystem level roughly 1 % of biodiversity is lost each year, and except in areas where biodiversity is already low the general trend appears to be towards increasing rates of loss.

At the global level we have not met the 2010 Biodiversity Target², although the situation has improved for some habitats and species, not least due to conservation measures. For example at the species level, 20 % of the bird extinctions which would otherwise have occurred have been prevented partly by conservation actions, while at the habitat level, protected areas have been shown to be effective in halting and even reversing deforestation.

The 2010 target has had political impact by helping to trigger some valuable responses. However, major and more rapid efforts would have been needed to achieve a significant reduction in the rate of biodiversity loss.

The decline of biodiversity is being largely driven by our inability to effectively address the underlying pressures and drivers of biodiversity loss. In addition, the increasing effects of climate change are compounding the negative effects from fragmentation, overexploitation, pollution and invasive alien species. Some climate change impacts are unavoidable in the next decades, making it impossible to avoid some biodiversity loss

Several factors were identified that contribute to shortcomings in meeting the global 2010 target, including:

- Being insufficiently strategic in the design of the target framework;
- Insufficient funding and support for implementation of policies to tackle biodiversity loss;
- Failure to mainstream biodiversity into agriculture and other key sectors responsible for land-use change;
- Not convincing the public and decision-makers of the importance of biodiversity, ecosystem services and of the need for urgent action.

Biodiversity loss and degradation of ecosystem services have increasingly dangerous consequences for human well-being, even survival for some societies

Loss of biodiversity already threatens life support systems with serious consequences for food and water

² This target was set in 2002 and committed countries to by 2010 “achieve a significant reduction of the current rate of biodiversity loss at global, national and regional levels as a contribution to poverty alleviation and to the benefit of all life on earth”.

security, health, livelihoods and the well-being of all people:

- The impact is most serious for many poor people, who are directly dependent on products from natural systems. Indigenous Peoples and other communities directly dependent on nature for their livelihoods, health and other ecosystem services suffer most acutely from biodiversity loss.
- The continued loss of biodiversity has been estimated to cost society about 7 % of the global GDP by 2050. In other words we lose trillions of dollars of natural capital every year.
- The widespread loss of coral reefs is already resulting in the loss of livelihoods, food resources and coastal protection for many societies
- Biodiversity loss also erodes the cultural values which all human societies place on nature and deprives us of our natural heritage.

Urgent action is needed to address the loss of biodiversity, especially to avoid tipping points

Biodiversity provides resilience for humanity in an era of rapid global change. Pressures from a number of driving forces threaten to push earth systems beyond safe “planetary boundaries”. New knowledge warns of dramatic changes in life support systems. Reversing or even recovering from these changes once they have occurred can be extremely difficult and costly, if not impossible. There is a need for decision makers and the public to better understand risk (probability x consequence) and uncertainty. When approaching tipping points there is a need to take action in line with the precautionary approach, being aware also that there will not always be warning of all ‘tipping points. If the current trends persist over decades several of these boundaries could be crossed with serious implications for human wellbeing and security.

- *Coral reefs:* The combination of ocean acidification and coral bleaching on top of other pressures is already leading to some losses of coral reefs. There is a risk of large scale collapse of coral reefs, which would have direct livelihood implications for an estimated 500 million people and marine food chains. This must be prevented. This requires urgent action to reduce pressures on coral reefs resulting from land based pollution and overfishing in order to increase the resilience of coral reefs, the increased establishment of effective marine protected areas, as well as urgent action to reduce greenhouse gas emissions.
- *Tropical rainforests:* Risks of large scale irreversible collapse of the tropical rainforests, such as the Amazon, with implications on regional climate, indigenous and local communities and biodiversity, can be prevented by halting deforestation as soon as possible and immediately investing in restoration. Limiting deforestation and greenhouse gas emis-

sions is necessary to reduce the risk that this tipping point will be crossed.

- *The Arctic*: Global warming impacts are most visible in Arctic marine ecosystems, where summer polar sea ice is already being lost at alarming rates and may disappear almost entirely in a few decades. Melting permafrost threatens to undermine tundra ecosystems. This situation requires much improved management of these regions and their natural resources to reduce pressures on these ecosystems and the people whose lives and livelihoods depend upon them.

Biodiversity is the living basis for sustainable development

Biodiversity and development are critically interlinked as recognized in the Millennium Development Goals. The effective conservation and sustainable use of biodiversity and the fair and equitable sharing of use of genetic resources offers pathways of addressing many of the world's current challenges and the enhancement of the green economy.

- Biodiversity is the major component of the natural capital our sustainable development depends upon. Biodiversity and ecosystem services must therefore be integrated into the general economy, at all levels of government, society and business. There is a need to increase focus on biodiversity in relation to key economic parameters, such as job creation and employment
- Economic assessments and valuation may be a powerful tool for decision making and efficient policy setting, and the ongoing study on The Economics of Ecosystems and Biodiversity (TEEB) provides very useful tools and terms. It should be noted, however, that ecosystems are indeed a part of biodiversity as defined by the CBD.
- This includes developing and implementing new policy instruments based on economic information and values of ecosystem services, leading to integration of biodiversity concerns into economic decision making and to investments in ecological infrastructure.
- Distributional aspects are also crucial, including concern for future generations and for mitigating the disproportionate impact of biodiversity loss on poor and marginalized people.
- It is also important that in the majority of countries, the survival of women, their well-being and empowerment depend on biodiversity.
- The protection and restoration of ecosystems, if at all possible, such as forests, mangroves, coral reefs and wetlands offer cost-effective ways to reduce the negative impact of global change and have the potential to create employment while enhancing food and water security, and promoting poverty alleviation.

The preliminary results of the TEEB project, by illustrating the economic value of biodiversity and ecosystem services, reinforce this message and will be very useful in communication with economic sectors and with the public.

Inaction is more expensive in the long run than investing in action now

The preliminary results of the TEEB study show, that in most cases, it is significantly more expensive to restore or rehabilitate degraded ecosystems than to maintain healthy and resilient systems in the first place. Staying within ecologically sustainable boundaries and preventing tipping points can help us avoid huge economic losses and threats to human well-being.

- Current fisheries policies are presently not sustainable in many areas, and lead to an estimated net benefit loss of \$50 billion/year puts at risk 27 million jobs and the health and well-being of more than 1 billion people.
- Better valuation of biodiversity and ecosystem services and integration of these values in the general economy are required to make the importance of biodiversity to development explicitly clear to decision-makers. Further novel approaches, such as payment for ecosystem services mechanisms, as well as the removal of perverse subsidies offer opportunities to better account for the value of biodiversity in national economic accounts. However economic incentives must be seen alongside regulation and direct action, taking the precautionary principle as major guideline.
- We need to reform subsidy policies and to remove environmentally harmful subsidies, as this makes sense both from an ecological and an economic viewpoint.
- Supporting traditional sustainable resource management and customary use practices, and restoring degraded ecosystems would deliver livelihood and ecosystem benefits for many local communities.
- Investing in local community development and environmental projects could also contribute to local climate mitigation measures and local adaptation in response to climate change.

Economic development and food security depend more than we realize on biodiversity and on ecosystem services

There are many economic sectors that directly and indirectly depend on biodiversity and on ecosystem services. The long-term sustainability of many sectors depends on biodiversity, and therefore they need to be involved in developing jointly with other stakeholder approaches for their own sustainable use and corresponding policies in order to share ownership to the overall national biodiversity policies.

Sectors should develop and adopt their own biodiversity-relevant targets and tools for accounting biodiversity and ecosystem services in their day-by-day activities. This will require a dialogue based on mutual understanding, mechanisms for horizontal co-operation between sectors, as well as common terminology. Horizontal co-operation should be encouraged at the UN/global, regional, national and local levels. The United Nations Environmental Management Group (EMG) serves as a good example for horizontal co-operation at the global level.

- Economic incentives and a clear regulatory framework (both "carrots" and "sticks") are necessary to stimulate both the public and the private part of economic sectors to contribute to the conservation and sustainable use of biodiversity.
- In light of a growing population and changing land use, more emphasis should be put on the role of the agricultural sector and how biodiversity management and food security can be integrated to increase food production and other services from agricultural ecosystems. Food security will not be achieved without biodiversity, as our diet depends on the diversity of crops. Effective use of crops and livestock genetic resources is essential to maintain or increase yields, particularly in an era of climate change. Sustainable agriculture has to contribute to wider ecosystem functions and with additional stress from climate change we need to design new sustainable and resilient farming systems for the future.
- Fisheries and the use of other marine living resources are also highly dependent on healthy ecosystems and new specific sustainable policies and sound management practices need to be developed.

Biodiversity and climate change are inextricably linked

Climate change affects biodiversity, and changes in biodiversity and ecosystem functioning affect climate change. Climate change, coupled with meeting human needs such as food and water security, poses a significant challenge to the conservation and sustainable use of biodiversity.

Biodiversity and the ecosystem services it provides gives important opportunities to bring the biodiversity and climate change agendas together.

- Changes in climate exert an additional pressure and have already affected biodiversity. 10 per cent of species will face an increasingly high risk of extinction for every 1°C rise in global mean surface temperature (up to an increase of about 5°C). Coral reefs, cloud forests, montane and arctic ecosystems are particularly threatened.
- Biodiversity plays a key role for ecosystem functionality and resilience. The resilience of many eco-

systems (their ability to adapt naturally) is likely to be exceeded by an unprecedented combination of climate change, fragmentation and direct ecosystem changes.

- Biodiversity can help people adapt to climate change in cost efficient ways. This can also generate social, economic and cultural co-benefits and help maintain resilient ecosystems.
- Biodiversity can help people mitigate climate change. Activities to increase forest conservation and to reduce emission from deforestation and forest degradation (REDD+) have the potential to deliver significant benefits for forest biodiversity and forest dwelling people if mechanisms are designed appropriately.
- There are opportunities available for substantial climate change mitigation through large scale ecosystem restoration, and building on REDD+ and on restoring grazing and agricultural lands we could possibly remove up to 40 ppm CO₂-equivalents from the atmosphere over a 50 year period
- There is a need to remove perverse incentives and to promote clear criteria for sustainable biofuel production.
- The moratorium on ocean fertilization must be respected.

All parties must strengthen and broaden implementation of the CBD

Implementation at the national level has been variable. However the trend is positive. One hundred and sixty seven parties have completed National Biodiversity Strategies and Action Plans (NBSAP). Only 12 CBD Parties have not or are not in the process of NBSAPs. While the design and content of many of the earlier NBSAPs was over-ambitious, with long lists of un-prioritized and un-funded activities that were not communicated effectively to the wider audience, newer NBSAPs are better prepared, more focused, more oriented towards on mainstreaming, and have a greater emphasis on self-reliance.

- Obstacles remain to a large extent the ones that were listed in the Strategic Plan from 2002 including; (i) lack of financial human and technical resources, (ii) lack of economic incentives, (iii) lack of mainstreaming and horizontal cooperation and (iv) lack of public education and awareness at all levels.
- Few countries meet the guidance from the ninth meeting in 2008 of the Conference of the Parties to the CBD (COP9) for fully effective NBSAPs. However there is a wealth of experience among countries and many examples of good practice. Many countries have developed supporting tools, covering most of the essential elements for success. Therefore there is a large – and generally untapped -- potential for improving implementation through mutual learning. A knowledge network with a well

developed clearing house mechanism could help reach this potential

- There are numerous biodiversity-related conventions, and there is a need for cooperation among these both at the international and national level to enhance synergy and coherent decision-making and implementation. There is a need to continue development and use of collaborative mechanisms and innovative tools
- There is a need to promote regional collaboration and to stimulate exchange of experiences in implementation.
- At the national level, strong, well run, well positioned, well connected and agile institutions are a key to success. They can help ensure access to and effective use of knowledge ("knowledge brokers") and act as facilitators and catalysts of change in the development and application of new approaches and policies. Efficient spatial (land-use) planning is an essential ingredient, drawing upon good geographical biodiversity information.

Stronger business and industry involvement is needed, as companies and corporations both affect and rely on biodiversity and on ecosystem services. More efforts are needed to encourage business actors to reduce biodiversity loss, taking into account both business self-interest and national obligations. Clear and transparent rules of the game are needed to secure that biodiversity concerns are internalized in costs and decisions, using both "carrots" and "sticks".

Now is the time to scale up our science and knowledge

Due to the seriousness of the situation where biodiversity loss is now undermining the functioning of key ecosystems and their services, there is an urgent need to strengthen biodiversity science and improve the science-policy interface. The proposed Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) could be an essential mechanism to increase the scientific fundament for CBD implementation. This international effort should be complemented by corresponding and compatible activities at the regional and national level.

However the lack of knowledge must not be used as an excuse for not taking action.

- We need to have a finger on the pulse of nature to avoid tipping points and to avoid crossing critical ecological boundaries. Investment in scaling up our science and knowledge is therefore critical in these areas, as well as in how to secure resilient ecosystem services and maintain critical ecological infrastructure, on identifying ecological, economic and social losses, and synergies between different drivers of change.
- Traditional knowledge of indigenous peoples and local communities, women's distinct contributions and innovations from young people are all valuable

and necessary contributions. The activities and educational campaigns of civil society are part of a broad-based constituency for biodiversity actions.

It is also important to develop an improved 'society-policy interface', including civil society participation from indigenous peoples, local communities, farmers and fishermen, business and industry, and NGOs.

We need to communicate that biodiversity is fundamental for human well-being

If we cannot communicate effectively, we cannot engage with the sectors that depend on and/or impact on biodiversity nor create the necessary public awareness.

Without effective communication we will not create the will to bring about the necessary change from "business as usual". The direct involvement of stakeholders, including other sectors, in developing and communicating key messages is required to create a sense of ownership and understanding.

Biodiversity must become everybody's business, and we must show how it is linked to health, money, food, security, livelihoods and climate change. We need to better understand our target groups, and address their underlying motivations and affective dimensions. There is a need for understandable, targeted and relevant information to key sectors and to the general public, as well as increased educational efforts at different levels.

The International Year of Biodiversity (IYB) should also be used as an opportunity for the biodiversity community to encourage people to discover the biodiversity that surrounds us, to realize its value, our connection to it and the consequences of its loss and not least to act to save it.

Substantially more resources are needed for capacity building and improved implementation

Calls have been heard to improve and harmonize the commitments made globally on biodiversity conservation and sustainable use. With much of the knowledge and resources held in developed countries, it is many of the developing countries that have to face the realities of implementing universal policies with limited available capacity.

- This situation calls for an increased international effort in capacity building, more financial support and efficient co-operation between countries.
- It is important to direct more efforts at reaching and involving economic sectors in order to address both direct and underlying drivers affecting biodiversity, and at creating a more common understanding and enhanced co-operation.
- Priority must be given to overcoming key obstacles identified at the national and international levels,

and to create public pressure and support for necessary political will and action.

A major investment in capacity building is needed. This will be essential to help countries translate the new strategic plan into national biodiversity targets and to integrate them into revised and updated NBSAPs.

There is a need for greater resource and technology transfers, for publicly accessible knowledge sharing systems, and for agreed national and international mechanisms for fair and equitable benefit sharing. Access to and use of Global Environment Facility (GEF) resources need to be enhanced, and there is a need for the development of new and innovative financial resources.

2010 calls for new and more strategic biodiversity targets

There is need for strong and inspirational global targets, which are also relevant to national needs and priorities, to drive the action required to avoid irreversible loss and the passing of tipping points.

- Targets should be developed covering all three objectives of the CBD, and be relevant to other multilateral environmental agreements (MEA) and sectors to promote ownership and collaboration.
- The targets should address both direct and underlying drivers of change, i.e. both underlying causes and direct pressures. The approaches by TEEB should be encouraged and developed further, and the policy challenges posed by TEEB should be reflected in new targets and in the new Strategic Plan.
- Targets should communicate urgency and seriousness, encourage governments and industry to find solutions, and stimulate science to develop new knowledge
- There is a need to highlight ecosystem services and economic benefits and potential contribution for biodiversity, to address environmental and socio-economic challenges such as climate change, food security, human health, and poverty reduction. Targets should encourage consistent policies that can ensure food security, water security and eco-security. It is very important to involve sectors in developing targets, both to create ownership and to ensure different needs and perspectives are taken into account.
- Recognizing women's roles as primary land and resource managers is central to the success of biodiversity conservation and sustainable use, and gender aspects need to be reflected in new targets.
- There is a need to avoid illusory targets, to have measurable targets; to measure what matters, and to provide a common framework of indicators.
- There is a need to set specific targets for particular challenges, and to develop sub-targets that can be adapted to local circumstances.

- The targets should be simple, short and in clear language, few in number and no more than 20
- The targets must have clear milestones and effective reviews of progress. Targets should therefore be developed in tandem with indicators, with indicators that are clearly linked to the targets at both global and national levels. They must provide an effective framework for the setting of targets at national level. Capacity building and the sharing of experience must be ensured, with the use of indicators and metrics improved building on current collaborative work at national and international levels. There is also a need for coordination of indicators and data, and the Biodiversity Indicators Partnership could serve as a good approach here.

Countries and the global community should draw extensively on the many valuable efforts already undertaken to develop better and more strategic post 2010 biodiversity targets. This includes ongoing efforts by the CBD Secretariat and by UNEP, as well as input from important meetings such as the January 2010 UK/Brazil informal expert workshop in London on 'updating of the Strategic Plan of the CBD for the post 2010 period' and UNESCO's 'International Year of Biodiversity Science-Policy Conference' in Paris at the global level and the European Union Conference in Madrid on 'Post 2010 Biodiversity Vision and Targets'.

"I have decided not to be a pessimist on behalf of nature and biological diversity. We can't permit us the decadence it is to be pessimists. Pessimism is merely another word for disclaiming liability, another word for laziness. Midway between pessimism and optimism is what is called hope, and the practical extension of hope is what we call struggle. Just as the struggle for human rights never ends, the struggle to preserve the biological diversity of the planet will never be over."

Jostein Gaarder (Norwegian author), Trondheim Conference on Biodiversity, 1 February 2010

INTRODUCTION

The five Trondheim Conferences on Biodiversity held since 1993 have provided an opportunity for policy makers, managers and scientists to come together and discuss key issues under the Convention on Biological Diversity (CBD). Furthermore, the conferences help build important bridges between science and policy, and they provide both insights and inspiration for participants.

Reports and proceedings from the five earlier conferences are available on the conference home page.

This time the Trondheim Conference on Biodiversity considered status and lessons learned from the current 2010 target and focus on future targets, beyond 2010. Many argue that the targets should be 'SMART', i.e. specific, measurable, ambitious, realistic and time-bound. They need to show that biodiversity is critical for environmental as well as economic and social aspects of sustainable development.

The Conference will provide important input to relevant meetings under the CBD, in particular the meetings of its advisory body (SBSTTA) and its group for review of implementation (WGRI), both to be held in Nairobi in May 2010. These meetings will again contribute to the Special Session on biological diversity in the United Nations General Assembly in September 2010 and to the tenth Conference of the Parties to the CBD in Nagoya, Japan, in October 2010.

The Trondheim conference will in addition contribute to biodiversity efforts and key meetings under the United Nations Environment Program (UNEP), and it will be a useful contribution to the International Year of Biodiversity (IYB) in 2010.

Organisation of the 2010 conference

Conveners and hosts

The conference was hosted by the Norwegian Ministry of the Environment (MD) on behalf of the Norwegian government, in collaboration with the United Nations Environment Program (UNEP) and the Secretariat for the Convention on Biological Diversity (SCBD).

In addition to UNEP and SCBD, the Norwegian government has also drawn on a number of other key stakeholders in preparing the conference, including the scientific community, relevant international organizations and the CBD SBSTTA Bureau. This work has been led and coordinated by Tone Solhaug, senior adviser in the Ministry of the Environment, National Focal Point (NFP) for the CBD and member of SBSTTA Bureau.

Funding for the conference has been provided from several relevant ministries; the Ministry of the Environ-

ment, the Ministry of Foreign Affairs, the Ministry of Agriculture and Food and the Ministry of Fisheries and Coastal Affairs.

Norwegian government preparations for the conference have been coordinated through an Interministerial Advisory Group, chaired by Deputy Director General Birthe Ivars of the Ministry of the Environment.

Organizer

The Norwegian Directorate for Nature Management (DN) was responsible for organizing the conference and hosted the Conference Secretariat. DN is the executive and advisory agency on biodiversity management in Norway, reporting to the Ministry of the Environment, and is the Norwegian SBSTTA focal point.

Core members of the organizing committee were Finn Katerås (Conference Director), Ingeborg Einum (Conference Secretary), Trine Hay Setsaas, Hege Husby Talsnes, Hilde Kyrkjebø, Lars Ekker, and Svein Nic Norberg.

Cooperation

Important economic and other support has been provided from the City of Trondheim and the Sør-Trøndelag County Authority, including for the social and cultural program and for local public awareness.

DN has also cooperated with key institutions working with biodiversity related issues in Trondheim, including the Norwegian Institute for Nature Research (NINA), the Norwegian University of Science and Technology (NTNU) and the Norwegian Biodiversity Information Centre.

Conference chairs

The Conference Co-Chairmen were Peter Johan Schei, director of the Fridtjof Nansen Institute (FNI), and Finn Katerås, Project Manager in the Norwegian Directorate for Nature Management.

Program development

Program development has been led and coordinated by the Norwegian Directorate for Nature Management, in close cooperation with the Ministry of the Environment, the CBD Secretariat and UNEP. Continuous important input has also been provided by resource persons in the scientific community and in the CBD community.

The core group for program development has consisted of Tone Solhaug, Senior Adviser in the Ministry of the Environment, Peter J Schei, Director of the Fridtjof Nansen Institute, Trine Hay Setsaas, Adviser in the Directorate for Nature Management, Hilde Kyrkjebø, Senior Adviser in the Directorate for Nature Management and Finn Katerås, Project Manager in the Directorate for Nature Management.

The social program was also an important part of the conference, with receptions cordially hosted by the

Ministry of the Environment at the Royal Garden Hotel on 1 February, by the Sør-Trøndelag County Authority at Lian Restaurant on 2 February, by the City of Trondheim at the Archbishop's Palace on 3 February and by the Directorate for Nature Management at the Royal Garden Hotel on 4 February.

Outputs from the conference

This document presents the report of the Conference Chairmen, Peter Johan Schei and Finn Katerås, including their conclusions and recommendations from the presentations and discussions at the Conference and summaries of presentations and discussions.

They are as Co-chairs responsible for the contents in this report, and it should be noted that the report does not necessarily represent a consensus among the participants.

The conclusions and recommendations are based on main points from the presentations and from the break-out groups, minutes taken by session rapporteurs, written input from participants, and discussions with participants and with the "friends of the chairs".

Friends of the chairs were Hesiquio Benitez Diaz, (Mexico, SBSTTA Bureau), Jon Hutton (UNEP-WCMC), Åsa Normann (Sweden, COP Bureau), Shirin Karryeva (Turkmenistan, SBSTTA Bureau), Ines Verleye (Belgium), Mio Maeda (Japan, COP10 host), Spencer Thomas (Grenada, SBSTTA Bureau Chair), Joji Carino (Tebtebba), Jameson Seyani (Malawi, COP Bureau), and Ashgar Fazel (Iran, SBSTTA Bureau), and as observers David Cooper, SCBD, Balakrishna Pisupati, UNEP, and Tone Solhaug, Norway.

Tristan Tyrrell (UNEP-WCMC), Jerry Harrison (UNEP-WCMC), David Cooper (SCBD), Kieran Noonan-Mooney (SCBD), Emine Isciel (MD) and Trine Hay Setsaas (DN) were rapporteurs and assisted the Co-Chairs in the preparation of this report.

The conference provided an *ad hoc* opportunity for participants to provide written input related to improved CBD implementation and to post 2010 biodiversity targets. The chairs have reviewed this material, and have sought to reflect key elements in this report.

This report and the presentations made at the conference may also be found at the conference home page at www.trondheimconference.org, as well as available manuscripts and other documentation from the conference.

This Chairmen's Report will be distributed to all conference participants as well as to relevant international fora working on issues related to the conference topics, in particular those working with the Convention on Biological Diversity.

The output of the conference will also be submitted as information papers to the fourteenth meeting of the CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA14) and to the third meeting of CBD's Working Group on Review of Implementation (WGRI3), both to be held in Nairobi, Kenya, in May 2010, and to the tenth Conference of the Parties (COP10), to be held in Nagoya, Japan in October 2010.

The Earth Negotiations Bulletin (ENB) covered the conference, and their daily coverage and a summary of the conference may be found at <http://www.iisd.ca/ymb/biodiv/tcb6/>. ENB coverage has also been valuable in finalizing this report.

'Our future, today's biodiversity'

The conference also included an *ad hoc* 'slogan competition', where participants could propose slogan texts that could improve biodiversity communication. The chairs invited a group of people working with communication (Kimo Goree, David Ainsworth, Malaka Rodrigo, Hege Husby Talsnes and Tore Høyland) to review the proposals and to present to the plenary five slogans that they would recommend. These five were presented in plenary, and following a vote among participants the proponent of the slogan "Our future, today's biodiversity" received a symbolic award from the organizers. The full list of slogan proposals is available on the conference home page, and has also been made available to the CBD Secretariat.

SESSION 1

OPENING SESSION

Session Chair: **Peter J. Schei**

Director, Fridtjof Nansen Institute, Norway

Following an artistic presentation by the Cantus Choir, opening statements were delivered by:

- Rita Ottervik, The Mayor of Trondheim
- Erik Solheim, Minister of the environment and international development, Norway
- Angela Cropper, Deputy Executive Director, United Nations Environment Programme (UNEP)
- Ahmed Djoghla, Executive Secretary of the Convention on Biological Diversity (CBD)
- Ursula Heinen-Esser, Parliamentary State Secretary, Federal Environment Ministry, Germany
- Toshio Torii, Director of the Global Biodiversity Strategy Office, Ministry of the Environment, Japan

Rita Ottervik

The Mayor of Trondheim

Rita Ottervik welcomed the participants to Trondheim, and stressed that the meeting would add to the knowledge base needed for the process of developing the post 2010 target framework. She informed the participants that Trondheim is the "Biodiversity Capital of Norway" and has several institutions with a strong international reputation in biodiversity research, information transfer and management. Moreover, she highlighted local biodiversity protection and environmental actions in Trondheim and used the restoration of the Ila Stream as an example.

Angela Cropper

Deputy Executive Director, United Nations Environment Programme (UNEP)

The speaker described the Trondheim Conferences on Biodiversity an opportunity for all to "re-dedicate" themselves to the "common purpose" of protecting the environment. She expressed regret that there is "little to celebrate" about efforts to reach the 2010 biodiversity targets, and suggested that several questions must be asked, including what lessons can be learned from the failures in achieving these targets. She also encouraged enhancing public awareness and concluding negotiations on the international regime on access and benefit sharing (ABS) under the CBD.

Erik Solheim

Minister of the environment and international development, Norway

Halting the loss of biodiversity and limiting climate change are the two most important challenges facing the planet. While climate change takes up much of the

media attention, in a fundamental way biodiversity loss is just as a serious threat. This is because the degradation of ecosystems often reaches a point of no return – and because extinction is forever. We need to create the resilience needed to prevent some dangerous "tipping points" from being reached. The crucial role of nature for combating climate change is often forgotten. Deforestation accounts for approximately 20% of global CO₂ emissions. Reducing deforestation and forest degradation can have substantial benefits in addition to the reduction of greenhouse gas emissions. These include positive impacts on biodiversity and on sustainable development, including poverty reduction and indigenous peoples' rights. Many of the world's poorest base their food directly on wild species of plants and animals, which they gather or hunt. It is obvious that a reduction in the diversity of such species will have a direct effect on these people's food security. The world cannot afford politics as usual – not at a moment when the biodiversity challenge we face is so great and the consequences of inaction are so dangerous. New knowledge on the values from ecosystem services and biodiversity is underway. The project "The Economics of Ecosystem Services and Biodiversity", a so called "Stern-report" for biodiversity, will provide us with the tools we need to incorporate the value of ecosystem services in decision-making and national budgeting. We also need to strengthen the science-policy interface for biodiversity and ecosystem services. The establishment of an intergovernmental platform for this purpose, inspired by the panel on climate change (IPCC) is a priority for Norway, and we hope that international agreement will be reached on the establishment of the platform this year. We also have to address the third objective of the Convention on Biological Diversity, namely the fair and equitable sharing of benefits arising out from the use of genetic resources. We need to work hard for a completion of the international regime on access to genetic resources and benefit sharing at the Conference of the Parties in Nagoya in October this year.

Ahmed Djoghla

Executive Secretary of the Convention on Biological Diversity (CBD)

This may be indeed the sixth Trondheim Conference on Biodiversity, but it is a special one. It is taking place at the start of the celebrations to mark the International Year of Biodiversity, a broad-based movement aimed at engaging the people of the world in the battle to protect life on Earth. Biodiversity will be on the agenda of the 192 Heads of State and Government attending a high-level meeting of the United Nations General Assembly exclusively devoted to biodiversity, which will be held in New York in September this year. This is indeed a milestone in the history of the United Nations. Our meeting is also special as it will contribute of designing together and shaping collectively the post-2010 biodiversity strategy. The third edition of the Global Biodiversity Outlook, to be issued on 10 May in a number of the

world's major cities, is expected to demonstrate, based on the 110 national reports received from Parties so far, that we have failed to fulfil the 2010 biodiversity target. We all know that the journey from Curitiba to Bonn was not easy, and the one to Nagoya will be difficult. We also know that the journey from Nagoya to New Delhi via Rio+20 will not be easy. However in our common journey, we will need to be guided by Gro Harlem Brundtland's wisdom. Speaking to the United Nations Commission on Sustainable Development about the future of sustainable development, she said: "You may think we might fail, but I believe we will not, because failing is not an option." Indeed failing is not an option as biodiversity is life, biodiversity is our life.

Ursula Heinen-Esser

Parliamentary State Secretary, Federal Environment Ministry, Germany

It gives me great pleasure to be here today to talk to you as a representative of the German COP 9 presidency. I would like to start by thanking the government of Norway for the organisation of this Trondheim conference, which comes at a crucial time during the preparations for new post-2010 visions and targets for biodiversity. We all know very well that biodiversity loss worldwide continues to occur at an unprecedented rate. Every year a forest area of 13 million hectares is being destroyed - this is equivalent to the size of Greece. Around 80 percent of Caribbean coral reefs have already been lost, and 35 percent of all mangroves have been destroyed in the past 20 years. At national and international level we have to do everything in our power to halt the loss of habitats and species. Despite the many successes achieved in recent years both nationally and internationally, we still need to considerably step up our efforts in the fields of agriculture, fishing, land sealing and transport, as these still pose a major threat to biological diversity. The United Nations has declared 2010 the International Year of Biodiversity. This can and will help us to increase awareness of biodiversity and its many facets and at the same time to make important political progress. In my view, it is imperative that an internationally binding regime on access and benefit sharing (ABS) is adopted at COP 10 in Japan in 2010. I also believe that compiling the international study The Economics of Ecosystem Services and Biodiversity (TEEB), disseminating and implementing its results and creating an intergovernmental science-policy platform on biodiversity, similar to the IPCC, are inseparably linked to the debate on the future global targets and objectives of biodiversity policy. One of the most important results of COP 9 in Bonn from a German perspective is that we reached agreement on jointly taking a road which leads us to an international ABS regime in 2010. I am very pleased that we saw substantial progress made towards an international ABS agreement during the seventh and eighth meeting of the Ad Hoc Open-ended Working Group on ABS. Only very few of the Parties at ABS 8 challenged the view of the ABS Co-Chairs that the negotiations should

finally lead to a protocol on Access and Benefit-Sharing, although a remarkable range of opinions still exist on this matter. I am sure that you are aware that we expect an intense period of formal and informal consultations during the first half of 2010 in order to have a sound draft ready to be decided on in Nagoya at COP 10. Germany is, furthermore, highly committed to realising the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services – IPBES – as a politically independent body in 2010. Such a mechanism would substantially advance the conservation and sustainable use of biodiversity and its ecosystem services by providing comprehensive knowledge to a broad range of clients for better informed decision-making processes. Therefore, the establishment of an IPBES would significantly contribute to and strengthen post-2010 global biodiversity policy.

Toshio Torii

Director of the Global Biodiversity Strategy Office, Ministry of Environment, Japan

The speaker gave some perspectives from the incoming Presidency of the CBD/COP10. He stressed that Japan is working hard to make COP10 a success, and underlined the importance of developing post-2010 targets, including the means to achieve them. He also outlined high expectations to the meeting including broad participation from different sectors and from civil society. He welcomed suggestions and recommendations from meetings such as the Trondheim Conference as a valuable background to COP10, and he also hoped that COP10 would be an opportunity for political momentum, including through the planned ministerial segment at COP.

SESSION 2

SETTING THE STAGE

Session Chair: **Finn Katerås**

Project manager, Norwegian Directorate for Nature Management

Tracking progress towards the 2010 biodiversity target – and looking beyond

Jon Hutton

Director, United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)

Summary of the 2010 biodiversity indicators

A) Response is increasing B) Pressures are increasing C) State is decreasing D) Benefits are decreasing as an effect of the above

Factors contributing to our failure

- We have been insufficiently strategic in the design, funding and implementation of policies to tackle biodiversity loss.
- Biodiversity has not been mainstreamed into agriculture or other key drivers of land-use change
- Despite some gains, we have still not persuaded the public or decision-makers of the importance of biodiversity and the urgency of action

Recommendations for beyond 2010

- Development of 10-15 headline indicators, clearly linked to the new main target and any sub-targets and underscored by more specific sub-indicators
- The framework be modified and simplified into four 'focal areas' based on a modified DPSIR: A: Threats to Biodiversity B: State of Biodiversity C: Impact on Ecosystem services D: Policy responses
- New focus on what is needed not what is possible - with the research and development of additional metrics and indicators and investment in long term monitoring
- National capacity for indicator development, data collection and information management should be further developed and appropriately resourced
- Priority be given to developing a communication strategy for the post-2010 targets and indicators in order to inform policy discussions and ensure effective communication of messages
- A flexible and inclusive process and partnership for post-2010 indicator development be maintained and adequately resourced. It is needed to increase and coordinate collaboration in the development, quality control, implementation and communication of post 2010 indicators.

Finally, the indicators are critically important – we recommend they be developed in tandem with the new target(s).

Developing post-2010 biodiversity targets - Learning from experience and meeting future challenges

David Cooper

CBD Secretariat

The speaker discussed progress towards the 2010 target, why the target has not been achieved, what should be done differently in the 2011-2020 timeframe, and how the implementation of the Convention can be improved.

He presented general views on the Strategic Plan post-2010, where he underlined that the Plan should: highlight the links between biodiversity, ecosystem services and human well-being; the economic value of biodiversity and ecosystem services; and the importance for poverty eradication and the Millennium Development Goals. Furthermore, he stated that the Plan should: address the direct and indirect drivers of biodiversity loss; integrate biodiversity considerations into relevant sectoral and cross-sectoral policies, programmes and strategies; and that the Plan should take into account the current context of global change.

Furthermore, he presented views on national implementation of the Strategic Plan post-2010, and stated that the new Plan should have a greater focus on the practical implementation of the Convention. This included *inter alia*: mechanisms to support implementation; need for financial resources; communication and outreach; a more systematic evidence-based review of implementation; and establishment of national, and, where possible, quantitative, targets, that Parties can implement according to their own priorities.

In conclusion, he stressed that action at multiple levels should be taken, including: addressing underlying drivers; using SMART targets and mechanisms to support implementation; integrating the new CBD Strategic Plan and biodiversity targets into national actions; integrating biodiversity into broader policies and strategies; building capacity; and developing knowledge networks.

SESSION 3

KEYNOTE ADDRESSES ON IMPORTANT AND EMERGING ISSUES FOR MAKING POST 2010 TARGETS

Session Chair: **Peter J. Schei**

Director, Fridtjof Nansen Institute, Norway

The economics of biodiversity and ecosystems - a tool to improve understanding and impact?

Pavan Sukhdev

Study Leader, The Economics of Ecosystems and Biodiversity (TEEB), United Nations Environment Programme (UNEP)

If nature is vital for humans, what difference can economics make? Based on an example of conversion or conservation choice, the speaker illustrated that based on only private gains, the "trade off" choice favours conversion, but if public wealth is included, the "trade-off" choice changes completely and favours conservation. Economic invisibility of biodiversity and ecosystem services has been the main driver of biodiversity loss over the last 60 years. There is a growing cost of biodiversity loss and ecosystem degradation, and the welfare losses building up to 7% of GDP in 2050 if there is a continuation of "business as usual".

The aim of the TEEB initiative is to make these economic values of biodiversity and ecosystem services visible and to provide options for better inclusion it into policymaking. TEEB produces five reports that can provide different decision makers with information to facilitate mainstreaming of biodiversity and ecosystem services into societal decisions.

"TEEB for International and National Policy Makers" launched 13 November 2009 has the following main messages;

- Reward benefits through payments and market
- Reform environmentally harmful subsidies
- Address losses through regulation and pricing
- Add value through protected areas
- Invest in ecological infrastructure.

There is a broad underlying scientific work behind the reports. Economic Value comes from both "output" (value attached to direct ecosystems services and benefits) and "insurance" (ecosystems capacity to maintain a sustained flow of benefits). The speaker also stressed the limits of the economic approach to ecosystems. When thresholds of irreversibility are near, a cost-benefit analysis with marginal changes is not applicable. Under conditions of high uncertainty and existence of ecological thresholds, policy should be guided by "safe-minimum-standard" and "precautionary approach" principles.

Advice for post 2010-targets:

- Ensure measurable targets and measure what matters
- Include ecosystem services and economic benefits

- Agree a common framework of indicators – not the relative "weights" that each nation assigns to each
- Agree on direction- not speed
- Define indicators that measure "net positive impact on Biodiversity".

Bridging global challenges into new targets - including links to climate change, to food production and to scientific foundations

Bob Watson

Chief Scientific Advisor, Department of Environment, Food and Rural Affairs, United Kingdom

Loss of biodiversity, ecosystem degradation and climate change are environment, development and security issues and are inter-and intra-generational equity issues. Climate change affects biodiversity, and changes in biodiversity and ecosystem functioning affect climate change. The carbon and water cycles, two important large-scale processes for life on Earth, both depend on biodiversity —at genetic, species and ecosystem levels. Biodiversity and associated ecosystem services are already impacted by climate change. 10% of species will face an increasingly high risk of extinction for every 1°C rise in global mean surface temperature (up to an increase of about 5°C). Biodiversity for adaptation is conservation and restoration of forests to stabilize land slopes and regulate water flows. Ecosystem based mitigation *inter alia*: protection of natural forest and peatland carbon stocks, use of native assemblages of forest species in reforestation, sustainable agricultural practices. Reduced Emissions from Deforestation and Degradation (REDD) will deliver significant co-benefits for forest biodiversity if mechanisms are designed appropriately.

The speaker recommended that we take into account the value of all ecosystem services when making decisions, remove subsidies to agriculture, fisheries, and energy, give payments to landowners in return for managing their lands in ways that protect and enhance ecosystem services, make appropriate pricing policies for natural resources, e.g., water, apply fees, taxes, levies and tariffs to discourage activities that degrade biodiversity and ecosystem services, establish market mechanisms to reduce nutrient releases and carbon emissions in the most cost-effective way. Moreover, the speaker underlined the importance of laws and regulations and the integration of decision-making between different departments and sectors, as well as international institutions.

The speaker stressed that the post-2010 Biodiversity targets should be realistic and reflect multitude of drivers (which vary by region), climate change, human needs, need for sustainable agricultural and water resource management.

Emphasis on increasing yields and productivity has consequences on environmental sustainability. Agricultural production will need to increase by about 70% by 2050 – extensification must be minimized and intensification made sustainable. The speaker recommended e.g. to improve the temperature tolerance of crops, to reduce external and energy-intensive inputs, to reduce GHG emissions while maintaining productivity, to improve the nutritional quality of food, introduce payments for farmers that improve ecosystem services, and to remove environmentally negative subsidies

Moreover, the speaker emphasised the importance of an improved science-policy interface through the proposed Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES). The IPBES should be intergovernmental, independent, credible and support all biodiversity-related issues.

Post 2010: Transforming the global economy to save nature

Ashok Khosla

President, International Union for the Conservation of Nature (IUCN)

The nature of decision making and of convincing people has to be changed. The warnings of the environmentalists are not heard. The case has to be made more convincing. Earth is in crisis. The problems of increasing poverty, pollution and of increasing biodiversity loss are interlinked. The current divide and rule principle leads to systematic repression of systemic solutions. General policies are of limited value. We need specific policies to address specific threats.

The silver bullet of G20 leaders is more growth driven by more consumption, more trade, more competitiveness, more efficiency and more extraction of natural resources. If this continues without taking into account biodiversity encompassing species, habitats and ecosystem processes, we will get greater economic, social and environmental stress.

The world's diseases of 'affluencia' and 'povertis' both destroy biodiversity. While biodiversity has a value in its own right, the demand will exceed supply in time. Protection, not only sustainable use is thus necessary. The value of biodiversity for the economy has to be calculated as in the TEEB. The future economic value is not always known however. Our technological improvements are often inspired by nature. The cooling systems of the termite mounds have given inspiration to modern low energy buildings, and new methods of water harvesting from the air is inspired by Namibian insects.

Tipping towards the unknown – critical planetary boundaries in relation to biodiversity and ecosystem services

Johan Rockström

Director, Stockholm Resilience Centre, Sweden

Human pressures on the Earth ecosystems have reached a level where sudden global environmental change can no longer be excluded. To continue to benefit from the ecosystem services that underpin human livelihoods, humanity has to stay away from critical thresholds and tipping points in the world's ecosystems.

Due to human pressures (e.g. over-exploitation, coastal eutrophication) and natural disasters (e.g. hurricane, flooding), ecosystems might undergo critical transitions or regime shifts where the system's ability to provide essential ecosystem services are lost. Are we putting the planet as a whole at this level? Are we entering a paradigm shift from the Holocene to the Anthropocene? The Secretary General of the UN, Ban Ki-moon has stated that "We have our foot at the accelerator driving towards the Abyss."

What are the boundaries that we do not want to cross? In a concept note on the planetary boundaries Mr. Rockström and colleagues present nine such inter-linked boundaries (climate change, stratospheric ozone, land use change, freshwater use, biological diversity, ocean acidification, nitrogen and phosphorus inputs to the biosphere and oceans, aerosol loading and chemical pollution) and identify the safe operating space for humanity, and which processes that does not risk entering a new state.

Three of these boundaries (climate change, biological diversity and nitrogen input to the biosphere) may already have been transgressed. However, efforts to stay out of the danger zone may include: agricultural systems that go from being a carbon source to a global sink, green revolution on current cropland, reduce 25% of current nitrogen extraction from atmosphere, not increase phosphorous inflow to oceans, and reduce the loss of biodiversity.

SPECIAL SESSION

Making biodiversity relevant for people – looking at 'the good obligations'

Jostein Gaarder

Norwegian author and founder of the Sophie Prize

Two centuries ago, Immanuel Kant pointed out that it was an essential moral imperative for all countries to join forces in a "people's union", which would have responsibility for ensuring peaceful co-existence between nations. The outcome of this declaration resulted in the German philosopher being regarded as the godfather of the UN principle. Perhaps the "Universal Declaration of Human Rights" represents philosophy's greatest triumph so far. They represent the conclusion of a thousand-year old maturing process. The question we face now is how long can we go on talking about "rights" without simultaneously focusing on the individuals "obligations"? We need a new universal declaration. The time is ripe for a "universal declaration of human obligations". It has been pointed out that we have not inherited this planet from our forefathers, we are borrowing it from our offspring. However, we are leaving behind a world that is worth less than the one we borrowed. In this way, we are eating into capital that we should in reality, be paying back with interest. The question is: would we have wanted past generations to fell more trees and rain forests? Would we have preferred our ancestors to have driven more plant and animal species into extinction? If not, we are committed to preserving biological diversity. It is not at all certain that Kant would have accepted our soaring consumption of non-recyclable energy resources. We must first assure ourselves that we would have wanted our forefathers to have burned as much coal and oil per capita as we have. We are the first generation that is affecting the earth's climate and biodiversity - and perhaps the last that does not have to pay the price for our actions.

SESSION 4

MEETING TIPPING POINTS AND SERIOUS LARGE SCALE CHALLENGES FOR MAJOR ECOSYSTEMS

Session Chair: **Jameson Seyani**

Malawi

The Global Biodiversity Outlook 3 study on 'Biodiversity futures for the 21st century'

Paul Leadley

Université Paris-Sud XI, France, and

Henrique Pereira

Center for Environmental Biology, Faculty of Sciences, University of Lisbon

The Secretariat of the CBD has launched a new assessment of global biodiversity to be published in 2010. One of the main components will be a synthesis of projections of 21st century changes in biodiversity and associated ecosystem services based on an analysis of a broad range of published models, experiments and observations.

The key conclusions of this synthesis are:

- Projections of the impact of global biodiversity change show continuing and often accelerating species extinctions, loss of natural habitat, and changes in the distribution and abundance of species, species groups and biomes over the 21st century.
- There are widespread thresholds, amplifying feedbacks and time-lagged effects leading to "tipping points", or abrupt shifts in the state of ecosystems. This makes the impacts of global change on biodiversity hard to predict, difficult to control once they begin, and slow and expensive to reverse once they have occurred.
- There are several important examples in which widespread biodiversity loss is projected to result in degradation of the services provided to human societies by ecosystems.
- Biodiversity transformations could be significantly reduced or even reversed if strong action is applied urgently, comprehensively and appropriately, at international, national and local levels. This action must focus on addressing the direct and indirect factors driving biodiversity loss, and must adapt to changing knowledge and conditions.

Disappearing Amazonas - The fate of the Amazon Forests in the 21st Century

Carlos A. Nobre

Brazilian Institute for Space Research (INPE)

'It is a moral and ethical imperative that we avoid that this tremendous forest turn into devastated land. By the time the economic system changes it may be too late.'

There is theoretical and observational evidence that two stable climate-vegetation states can exist in the Amazon: i) Tropical forest. ii) Forest-savannah mix. What are the drivers and the tipping point from i) to ii)?

We need to advance our understanding of critical tipping points and hotspot systems at risk. The ecosystems of Amazonia are subjected to a suite of environmental drivers of change and at an unprecedented rate. If climate change was the only factor, the tipping point for transformation from rainforest to dry forest and savannahs would be 3-4°C. For deforestation the tipping point is 30-40%.

The drivers of deforestation are population growth, beef production (70-80% of deforestation becomes pastures), logging and soya bean production. The traditional model is unsustainable, and actually provides less than 0.5% of the Brazilian GDP a year. We need a new paradigm where we add value (small scale farming, water resources, and biodiversity environmental services) to the standing forests!

Net profitability of current economic activities in the Amazon versus potential for REDD: During COP15 Brazil committed to GHG emissions cuts between 36-39% against business as usual by 2020. Deforestation rates have been reduced 75% over the last 5 years and people are starting to believe it is possible to halt deforestation. Could Brazil emerge as an environmental power?

Incremental development will not do the job. In order to reach our targets, we need a revolutionary approach. A new paradigm has to be invented!

Dryland Connections: Agro-Biodiversity Science in Support of UNCCD and CBD for the Semi-Arid Tropics

Mark Winslow

International Crops Research Institute (ICRISAT)

There is a connection between the UNCCD and CBD as they both address biodiversity issues. Sustainable land management is the common denominator. Successful indigenous agroforestry in the Sahel, leading to increased plant cover and increased agricultural output is an example of this. The 2010 Biodiversity Indicators Partnership has contributed towards harmonising indicators between the two conventions but UNCCD's

framework for monitoring progress is focused less on drivers, pressures and responses and more on impact and state when compared to CBD. The following actions are recommended to the CBD:

- Monitor causes for changes in biodiversity, not just the effect
- Monitor farm agro-biodiversity
- Monitor value-share of new crops added to the system
- Monitor nutritional status, especially of children and pregnant women
- Greater synchronisation with the UNCCD

Ocean acidification and biodiversity

Jan Helge Fosså

Institute for Marine Research, Norway

Co-authors/researchers: Richard Bellerby (Institute for Marine Research) and Tore Jakobsen, (Bjerknes Center for Climate Research)

The ocean absorbs about 25% of the anthropogenic CO₂ added to the atmosphere. When CO₂ dissolves in seawater carbonic acid is formed. This phenomenon is called ocean acidification (OA) and it can cause seawater to become corrosive to shells and skeletons of numerous marine organisms. Observations and model predictions of OA show that the changes occur faster and stronger in high latitude oceans. Within a few decades a corrosive state can be reached in the northern Barents Sea.

One of the most important questions is: how will OA impact marine biodiversity and the ecosystem services such as fish production? OA can affect fish and other marine organisms both directly through physiological processes and indirectly through changes in the marine food webs, e.g. food quality, quantity and availability, and through deterioration of important habitats such as tropical and deep-sea coral reefs. Alone, or in combination, this can affect reproduction, growth and mortality in fish populations. New results also indicate that marine species diversity can be reduced due to OA. This lead to changed food webs and energy flows.

Fisheries management should aim at maintaining healthy and robust stocks that are not overfished and have suffered a minimum loss of genetic diversity. This can secure a high potential for adaptation to changes in the environment. The fisheries management needs to be adaptive and respond quickly to new environmental knowledge. In an international context the situation urges for cooperation to establish a relevant baseline for monitoring and to initiate research programmes. However, adverse effects can only be avoided by limiting atmospheric CO₂ levels.

Disappearing coral reefs – in light of large scale changes

Paul Leadley

Université Paris-Sud XI, France

Coral reefs provide basis for a number of ecosystem services such as fishing, protection against storm surges, and tourism. Hard corals build carbonate skeletons, a process that can be adversely affected by a reduction in seawater pH values. Ocean acidification and sea temperature rise already cause huge impacts in many regions.

Damage to coral reefs is one of the most convincing evidence of effects of increasing atmospheric concentrations of CO₂ outside the Arctic. Over the last decade there are recurring bleaching events, linked to high sea surface temperature. Areas for building coral reefs may be severely restricted by mid-21st century and an atmospheric CO₂ concentration of 500 ppm. The thermal threshold for viable coral reefs is at a 2°C rise in sea temperature. Degradation will very likely range from severe to catastrophic. To avoid a general loss of coral reefs, CO₂ emissions need to be stabilised at 450 ppm. Australian Great Barrier Reef may be lost already at 450 ppm. However, there are also "glimmers of hope": Adaptations to higher temperatures can take place if the impacts are slowed down. Establishing Marine Protected Areas may substantially increase the resistance and resilience of coral reefs.

The core needs in mitigation and adaptation are: Minimizing atmospheric CO₂ increase, minimizing global warming, reducing additional stressors (e.g. eutrophication), and restoring ecosystem functions.

The significance of wetland ecosystem services and degraded wetlands for human health and well-being

Ritesh Kumar

Wetlands International – South Asia, India

Mr Kumar stressed the linkages between wetlands, human health and well-being as wetlands provide a long range of ecosystem services, and support human well-being in several ways. Wetlands for instance, are principal sources of renewable freshwater, support food security (fisheries), provide water purification, regulate hydrological regimes and climate (storing of CO₂ in peatlands). Globally, wetlands continue to be lost at dramatic rates – more rapid than any other ecosystems. As evidence of dramatic loss and conversion of wetlands, more than 50% of specific wetland types are lost in North America, Europe and Australia, and half of the worldwide mangrove area has been lost the last 20 years.

The direct drivers of change are connected to development of infrastructure (broad spectre), invasive alien

species and climate change. As the main indirect drivers are population growth and economic development. Challenges to wetland management are many and huge, and there is a need for change in conventional management approaches, and to adopt a system that focuses on ecosystem services and human health. Human needs versus ecosystem needs for water must be highlighted. There are large challenges for the health sector (e.g. to understand the linkages), as well as to other sectors and socio-economic considerations. Enhancing well-being by ecosystem services also includes a revised attitude and response concerning both social and behavioural matters - as well as technological response. The case of Chilika Lake in northeast India was used as an illustration.

SPECIAL SESSION

Celebrating World Wetlands Day 2 February 2010
- 'Caring for wetland – an answer to Climate Change'

Nick Davidson

Deputy Secretary General, Ramsar Secretariat

The Ramsar Convention on Wetlands (RC, 1971) has organized the celebration of World Wetlands Day (WWD) – 2nd February every year since 1997. RC addresses all wetlands from the mountains to the sea. Status and trends are unfavourable as degradation and loss of wetlands are continuing more rapid than for any other ecosystem, with 70% of all available water already being taken for irrigation, and the escalating burden of water demand will become intolerable in water scarce countries (UNEP GEO-4). Wetland biodiversity trends could be illustrated with shorebird populations (increasing decline the last years), and mangrove forest (progressive and continuing area loss). Drivers of wetland ecosystem loss include land use change, agricultural impacts and water regulation.

The slogan of this year's WWD is "Caring for wetlands – an answer to climate change", and refers to the RC's contribution to the International Year of Biodiversity and its role as lead implementation partner for wetlands in cooperation with the CBD. Climate change is happening, it will likely get worse, and wetlands will be affected – e.g. salt marshes and mangroves are likely to be negatively affected by sea level rise. According to IPCC (2008) climate change effects will be felt mainly through water (prolonged drought, "too little" water in some basins, and "too much" water or at the "wrong" time in others). At the same time, intact wetlands have large carbon storage capacities.

There are large challenges in connection to water demand and cross-sectoral cooperation is much needed. Findings of the RC's Strategic Technical and Review Panel verify that progress in integrating wetlands into land and water resource planning and management plans has been limited. The "Changwon Declaration on human well-being and wetlands" was adopted by 158 nations at the Ramsar COP10 (Korea 2008), and it sends powerful key messages to decision makers managing other sectors (not the "biodiversity converted"). In general, wetlands are in relatively better state where the Ramsar Convention is being implemented – e.g. through developing and implementing a National Wetland Policy.

SESSION 5

REFLECTING THE ECONOMICS OF BIODIVERSITY AND ECOSYSTEM SERVICES

Session Chair: **Ove Hokstad**

Assistant Director General, Norwegian Ministry of Fisheries and Coastal Affairs

The Economics of Ecosystem Services and Biodiversity (TEEB) – bringing together economics and governance of biodiversity

Carsten Neßhöver

TEEB Team (Scientific coordination), Helmholtz-Centre for Environmental Research (UFZ), Germany

The speaker introduced the process behind the TEEB-initiative on The Economics of Ecosystems and Biodiversity. He highlighted the open architecture of the TEEB project, having a broad range of involved experts and institutions from science, administrations and practice and inviting interested parties to join experiences in ecosystem services valuation approaches and policies.

Introducing the main approach of the TEEB report for International and National Policy Makers, (recently released; accessible via www.teebweb.org), it was highlighted that economic measures and information are crucial to identify policy options in three areas: providing information, setting incentives, and regulation use. Providing information is essential to stimulate policy making by illustrating the economic dimension of ongoing losses, showing the equivalence of values (e.g. manufactured vs. natural capital) and also as a consequence by helping to reform and enhance national accounting systems. Setting incentives includes rather new instruments like Payments for Ecosystem Services, but also classical instruments like taxes, fees and charges. On regulating use, the speaker highlighted the importance of setting standards and liability rules, but also outlining the importance of protected area networks and the direct public investment in ecological infrastructure, focussing on the precautionary principle but also the need for restoration efforts.

Addressing governance aspects, it was outlined that implications of ecosystem services use often vary significantly between local, national and international level, including significant trade-offs between these levels. These issues need to be taken into account carefully when designing policy measures, e.g. payment schemes for ecosystem services.

On the development of post 2010 targets, it was highlighted that many targets discussed at the moment have direct links to economic issues and this link should be made visible either in the target's formulation and / or potential indicators, including measures of ecosystem services and their economic values, information on "green" shares in different business sectors and others.

Integrating economic values into policy assessments and using economics-based policy instruments for biodiversity and ecosystem services

Patrick ten Brink

TEEB Team (Coordinator of TEEB for Policy Makers, Institute for European Environmental Policy (IEEP))

The first part of the presentation addressed the integration of values of ecosystem services into policy assessments. Some values are, at least partly, reflected in market prices, most values are not. A case illustrated how the assessment of shrimp farming versus protection of a mangrove forest is highly dependent on the inclusion of storm protection and other non-market ecosystem values. Very often ecosystem services can meet societies' needs at lower costs than investment in technical solutions. Water purification and carbon storage are examples. Environmental Impact Assessments tend more often than before to include economic valuations. But the speaker made it very clear that monetary values are not a superior kind, but a part of values in a very broad sense. He asked the audience for reports on practical experience with valuation, and for signals as to where the largest potential exists.

The second part addressed instruments supporting the integration of ecosystem values into policy-making. First, he covered incentives including payment for ecosystem services (PES). PES covers a lot of instruments, including both local, national and global schemes, and both public and private payments. The instruments are taxes and compensation schemes, as well as liability payments. The speaker stressed the need for reform and removal of environmentally negative subsidies, taking distributional issues into consideration. Such subsidies come in different forms and represent huge amounts of money. He also asked for more case studies of economic instruments.

The wealth of nature – ecosystem services, biodiversity and human wellbeing

Russell A Mittermeier

President, Conservation International, United States

The strategy of Conservation International (CI) is to set priorities, focusing on hotspots. In these areas we find 50% of all endemic plant species. For instance, on Madagascar there are 14-15 000 species of plants, of which 80% are endemic. However, 90% of the natural vegetation on Madagascar is lost. Madagascar is one of the world's most important hotspot areas, with new species discovered monthly. In addition to hotspots, the Conservation International focuses on High Biodiversity Wilderness Areas. For instance in Surinam, where 90% of the rain forest in the country is remaining. In fact, the Human Linguistic Diversity is also high in the same areas.

Conservation International (CI) works to establish financial mechanisms to fund hotspots and wilderness areas. These are win-win opportunities, where biodiversity conservation secures potential ecosystem services, to the value of about 2.3 trillion USD per year. CI also focuses on key biodiversity areas (KBAs), which are sites with high biodiversity, and has joined the Alliance for Zero Extinction. Moreover, CI recognizes indigenous people as important stakeholders.

CI highlighted that we have a historic opportunity to develop a new strategy for biodiversity, and that we need to be optimistic and have ambitious goals. CI stressed the importance of having a high-level target for biodiversity such as; "We need to stop biodiversity loss within 2020".

Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) – a promising payment system for ecosystem services?

Katia Karousakis

Organization for economic cooperation and development (OECD)

Reducing emissions from Deforestation and Forest Degradation (REDD) and conservation of forest in developing countries can be a promising payment system also for ecosystem services. REDD in developing countries is a new financial mechanism under UNFCCC. The REDD mechanism should – if designed properly – give substantial biodiversity co-benefits since avoided deforestation and degradation also secure ecosystem services, habitat and biodiversity. Mapping biodiversity and ecosystem services benefits should serve as baseline for national REDD planning and implementation. Biodiversity-targeted international funding (from OECD countries) should complement REDD financing e.g. focusing in areas with high biodiversity and low carbon benefits. REDD demonstration activities give opportunity to promote and financially support biodiversity monitoring. One should consider to build a technical expert group on promoting REDD & Biodiversity Co-benefits (best-practice guidelines and principles, including indicators for biodiversity), and assist developing countries implementing REDD.

Biodiversity and business - how to engage the business sector?

Susie Brownlie

De Villiers Brownlie Associates, South Africa

All businesses, irrespective of their size, sector and location, depend, and consequently have an impact, on biodiversity and ecosystems. Some have a direct impact on biodiversity, whilst others rely indirectly on ecosystem services to support their supply chains. Impacts

on biodiversity in turn can result in changes in ecosystem services delivery for affected communities, translating into adverse social and economic effects. For business, it is becoming increasingly difficult to separate corporate social and environmental responsibilities. Despite numerous efforts to capture the full economic value of biodiversity and ecosystem services, and initiatives such as TEEB, pricing is difficult. This fact means that business seldom incorporates the external costs of its operations.

Business behaviour is strongly linked to a number of risks to business performance. These risks include regulatory, reputational, operational, financial, social 'licence to operate' and compliance risks, amongst others. One of the most important factors influencing business practice is the predictability and consistency of decision making on their proposed activities. It is essential that the messages reaching business from international, national and local regulators, financial institutions and product certification bodies with regard to biodiversity conservation targets, 'bottom lines', 'non-negotiables' and required practice are clear. Practitioners responsible for carrying out EIAs (or equivalent evaluation) should be professionally registered and have – or engage specialists with – local knowledge. These practitioners should practice integrated assessment, ensuring that the interdependencies between social-economic and ecological systems are identified, and issues such as resilience, equity and environmental justice are addressed.

Business operates within a system. Capacity building within business, and in key institutions and organizations that shape business practice, is essential if the biodiversity-related risks are to effect a change from 'business as usual'.

SESSION 6

REFLECTIONS ON FUTURE CHALLENGES FOR ADDRESSING DRIVERS OF BIODIVERSITY LOSS

Session Chairs:

Jon Heikki Aas

Senior Adviser, Norwegian Ministry of Foreign Affairs, and **Somaly Chan**
Cambodia

A United Nations system perspective on ecosystem services and sectorial cooperation for halting the loss of biodiversity

Ivar Baste

Director, Secretariat of the Environment Management Group (EMG), United Nations Environment Programme (UNEP)

Mr. Baste presented a UN system perspective on ecosystem services and sectorial cooperation for halting the loss of biodiversity.

The work of the Environmental Management Group (EMG), with contributions from its members representing entities in the whole UN system including the international financial institutions, will result in a report to the CBD process. The report aims to contribute to the post 2010 biodiversity agenda and the need for enhanced cooperation across the current institutional borders. The work was initiated by the President of the Conference of the Parties of the CBD together with the Executive Secretary of the CBD and the Executive Director of UNEP in his capacity as Chair of the EMG.

The report focuses on three main challenges/parts: i) why biodiversity matters for development and what does it take to mainstream biodiversity into sectors; ii) policy perspectives – how can biodiversity and ecosystem services help meet the objectives of the sectors? and iii) opportunities for enhanced cooperation.

The report will build on an understanding of how the ecosystem services contribute to enhance human well-being. The drivers behind the current loss of biodiversity and the risks and challenges they pose will be identified. A first draft is expected by mid-April 2010 for the ad hoc Working Group on Implementation of the Convention (WIGRI-3) and a final version to be presented before the CBD Conference of the Parties in Japan October 2010.

Biodiversity and climate change - on linking major environmental challenges

Thomas E Lovejoy III

Biodiversity Chair, Heinz Center for Science, Economics, and the Environment, United States

The speaker noted that most climate change discussions are dominated by the physical sciences, but the reality is more complex with biological systems playing a significant role. He described the ways in which biodiversity is affected by climate change, highlighting the problems of high altitude species like the North American pika and island species, and, also abrupt ecosystem change in coral reefs and the coniferous forests of North America with pine bark beetle outbreaks. In addition, he noted system change occurring with acidification of the oceans and new results that show the Amazon rain forest very close to a tipping point leading to dieback. He suggested revising conservation strategies by, *inter alia*: increasing natural connectivity between protected areas; ecosystem restoration at a global scale (reforestation, restoring grasslands and managing agro ecosystems to build up soil carbon) to remove CO₂ from the atmosphere (perhaps 40 ppm over 50 years) and make ecosystems more resilient to climate change.

Implementation of National Biodiversity Strategies and Action Plans (NBSAP) for the Convention on Biological Diversity

Christian Prip

Project Manager, United Nations University

The United Nations University, Institute of Advanced Studies is conducting a project reviewing the development, implementation and revision of NBSAPs. The project gives special attention to the extent to which NBSAPs mainstream biodiversity concerns into cross-sectorial and sectorial policies.

The NBSAPs have a very uneven focus of the three CBD objectives with primary focus on conservation and limited focus on sustainable use and benefit sharing. There is generally little attention given to the underlying causes of biodiversity loss and little alignment with cross-sectorial and sectorial policies. There is most focus on mainstreaming into forestry, less into agriculture and very little into fisheries. Only a minority of NBSAPs include prioritisation, time bound and measurable targets and tools for monitoring.

The project team are conducting a series of country studies to examine more closely obstacles to implementation. Results so far suggest that the implementation of the NBSAPs has been poor in many countries, mainly due to lack of financial and technical resources, economic incentives and horizontal cooperation, as well as public awareness. The project will be presented at

CBD COP 10 in October 2010 and will include recommendations for post-2010 NBSAPs.

Possible discussion themes on the way forward included:

- Should the new generation NBSAPs be part of the new post-2010 Strategic Plan?
- There is a need for GEF support for implementation in the field
- Do we need a global support program? Should SCBD have a bigger role in that?
- IPBES and TEEB important features for making the case for biodiversity at the national level post-2010
- Minimising developed countries' ecological footprint as part of post 2010 NBSAPs?
- The MA conceptual framework as basis for post-2010 NBSAPs?
- Do we need NBSAPs or should biodiversity "just" be incorporated in higher plans?
- The international environmental governance system as an impediment to mainstreaming. An issue for the Rio +20 Summit!
- No new CBD Programmes of Work before we have implemented those that we already have
- Tear down the walls between MEAs

Using economics for improved decision making and the integration of biodiversity in EU policy

Ladislav Miko

Director, Nature Directorate, European Commission

Mr Miko concentrated on the EU policy responses to the biodiversity loss. One major part is measuring nature capital. The speaker mentioned *inter alia*, the Natura 2000 report on species and habitats, as well as the EEA report on State of the Environment, sets of biodiversity indicators (SEBI 2010) and assessments at the national level. Work is in progress to develop a system of ecosystem accounting, on "beyond GDP" indicators and on improved assessment capacity at the global level (through EU support for IPBES).

Concerning the increase of protected areas, Mr Miko stressed the job creation aspect. There is job potential in protected areas as well as in nature restoration, but politicians and the public are very much concerned about the possible loss of existing jobs due to restrictions on traditional sectors. This is a crucial issue in all policy making. So it is not only a question of costs and benefits in an economic sense, the job aspect must also be addressed.

83% of the EU area is outside the NATURA 2000 network of protected areas. The EU policies to halt biodiversity loss here consists of a number of instruments and approaches, including PES and compensation measures considering the development of a so called Green Infrastructure as proposed by White Paper of the

European Commission for Climate Change Adaptation seems to be a very promising concept. In conclusion, the speaker said the economic valuation and assessment is a powerful tool for improved decision making. Some elements of EU policy already work with economics, and TEEB may help strengthen these elements. But some new elements also need to be developed.

In a brief comment on future targets, Mr Miko advocated political objectives (and not a target for every species), high ambitions, an agreed set of indicators, flexibility to address local conditions, and a set of targets for species groups.

National institutions and governance to meet future biodiversity challenges

Tanya Abrahamse

CEO, South African National Biodiversity Institute (SANBI), South Africa

Dr Abrahamse focused on the role of national institutions in meeting challenges of biodiversity conservation, particularly in developing countries. Biodiversity challenges are difficult to grasp, thus making political mainstreaming and communicating the challenges to people difficult.

When it comes to biodiversity conservation, there is tension between the North and the South as well as between the privileged and the poor within developing countries. Biodiversity is mostly a concern of the privileged. Urban economic development is the primary concern of governments of developing countries, not rural or wilderness areas. The biodiversity issue is competing with issues of housing, health, education and infrastructure. Furthermore, the economic case of biodiversity and the link between biodiversity and human well-being has not yet been made.

We should learn from other successful sectors, such as mining and tourism, and their focus on institutional strength, human capital development and playing the power game.

South African National Biodiversity Institute (SANBI) has a legal mandate to conduct biodiversity research and promote innovative conservation practices. Cooperation between institutions through the "Managed Network" model is a key to success in South Africa. SANBI is seen as a credible and neutral player, acting as a facilitator and a catalyst.

Some major challenges facing national biodiversity institutions working in the science-policy interface are:

- Striking the balance between research and action
- Do we want to be leaders *of* science (setting the agenda) or leaders *in* science (conducting excellent research)?

- Human capital backlogs – capacity to create jobs
- Long-term research needs vs. short-term needs related to poverty reduction and job creation
- Conservation vs. development
- Cooperation vs. competition
- Income generation vs. science priorities
- Good dialogue between scientists and policy-makers
- 'Power' challenge – where along the innovation chain (data – information – tools – policy) should we focus our energy and resources?

National biodiversity institutions should utilise opportunities for partnerships:

- Partnerships with similar institutions in e.g. Costa Rica and Mexico
- Network to share experiences
- Engage with development cooperation agencies and foundations

Dr Abrahamse concluded that national biodiversity institutions in the South play an important role and should be strengthened.

The importance of biodiversity – in light of climate change and disaster prevention

Fiu Mata'ese Elisara-La'ulu

Executive Director, Ole Si'osi'omanga Society, Samoa

Samoa is a small island country in the Pacific Ocean, and is highly vulnerable to climate change and extreme weather events. The Pacific states consist of 27 states (Polynesia, Melanesia and Micronesia). This area accounts for 1/3 of the world's surface and has a unique species diversity and a significant number of the world's global biodiversity hot spots (include Western Australia, Melanesia, Micronesia, New Zealand, and Polynesia). Because of climate change they face a reality of "100% loss of countries, peoples, biodiversity, etc".

The speaker stressed that the capacity exists to save biodiversity and to turn the situation around, but humans have to rethink their position in this regard. This is an issue for good leadership, where leaders with a vision are needed. There is a need to focus on good governance, and the need to give local people ownership. For instance, 95% of Samoans are indigenous peoples and owners of 82% of natural resources including forest cover. Yet, they are little involved in consultation concerning forest policies, biodiversity, and conservation.

The speaker also stressed the importance of biodiversity and ecosystems for providing goods and services necessary for security and economic development. There needs to be a focus on good governance and on sharing experience and reflections on the importance of biodiversity, especially in the light of climate change and disaster prevention.

The 'Satoyama Initiative' - Advancing sociological production landscapes for the benefit of biodiversity and human wellbeing

Yoshihiro Natori

United Nations University Institute of Advanced Studies (UNU-IAS), Japan

In order to significantly slow down the rate of biodiversity loss at a global level, it is important not only to protect wilderness areas, but also to promote human activities which are compatible with biodiversity conservation in biocultural landscapes, which have been formed and maintained in many parts of the world as a result of human activities such as agriculture, forestry and fishing. In particular, by employing natural resource utilization methods which have been passed down for generations, areas derived from positive human-nature relationships are important not only to conserve biodiversity but also to inspire ideas for the realization of societies in harmony with nature. Unfortunately, these landscapes are threatened under modern socio-economic conditions, and in many cases, have been lost. Increasing demand for fuel and food accompanied by population increase and economic growth, and deeply-rooted poverty, have caused inappropriate utilization of natural resources on the one hand, while on the other, large-scale monoculture, ageing population in societies, and depopulation of rural areas have changed human-nature relationships in these areas markedly resulting in the deterioration of biocultural landscapes. The three-folded approach of the Satoyama Initiative is intended to maintain and rebuild landscapes in which land and natural resources are used and managed in a more sustainable manner:

- 1) Consolidating wisdom on a stable supply of diverse ecosystem services
- 2) Integrating traditional ecological knowledge with modern societies
- 3) Creating a "New Commons" or management systems

Local efforts to halt the loss of biological diversity

Søren Brandt

Herning Municipality, Denmark

Herning Municipality became actively involved in biodiversity work through an initiative from the Nordic Council of Ministers. In 2006, a network of local authorities was set up in the Nordic countries to carry out specific projects that are relevant for the 2010 target, and had to submit reports on the results by 2010.

As a part of the project, Herning has developed three specific actions. They have made their own climate action plan, a "Policy for Nature" and an action plan for salmon in the River Skjern. Herning Municipality aims to show how nature is connected with landscape and culture, and in this sense "part of the whole". People don't necessarily know how the ecosystem functions or

the stages in the food chain. It is therefore important to tell the stories, show the adventures and make explicit the values connected with nature.

The aim to halt the loss of biodiversity and secure future generations a varied environment is concretised in Herning through a number of efforts like; safeguarding existing natural assets; creating large, continuous areas of countryside; restoring wetlands; safeguarding the habitats of plants and animals in the borough; providing information on natural assets. A green balance sheet has been developed to show the concrete results. Experiences from Herning show that it is possible to reach the biodiversity goals. The climate plan in Herning is in action with binding targets for the future. The policy for nature is in action and has already resulted in two new protected areas, and there are two different projects in action for the river Skjern.

SESSION 7

BREAKOUT GROUPS

Facilitators:

Natasha Walker, Consultant

Carsten Neßhöver, Helmholtz Centre for Environmental Research – UFZ

Mark Schauer, Head, Central Office of TEEB, UNEP

How can the values of biodiversity and ecosystem services be integrated into policy making and all areas of public life?

Mainstreaming/Integrating Stakeholders

We must enable stakeholders from all levels to participate in and joint-own the biodiversity strategy, including in it their priorities such as poverty alleviation and job creation. There is a need to integrate biodiversity into the national budget and give it a legal mandate for mainstreaming. Biodiversity is a long-term platform for planning and other inter-governmental processes and a joint project between authorities and sectors (e.g. cold water reefs). Mainstreaming is not just a national exercise, but must also be done through decentralised structures and through related partnerships at local level.

Communication/Awareness

Biodiversity is still an abstract term requiring more visibility and hard-hitting images and slogans. The International Year of Biodiversity is a good time to engage the public, media and sectors via classical and innovative approaches. Successful communication builds trusting relationships.

Audiences need to be targeted, the message packaged individually for them, increasing accessibility by using regional symbols and ambassadors. The overall message is: clear, science-based, consistent and containing facts and figures, but adapts its form to its audience.

On action, it was recommended to 'jump on the climate change bandwagon' and improve and implement communication, education and public awareness.

Valuation

We need to differentiate between the valuation of single species and ecosystem services, which can be allocated an economic value more easily. We should constantly monitor changes in value using authentic and independent science. A concept should be developed for using market valuation for biodiversity to improve access and benefit sharing (ABS) and conservation.

There is a need to evaluate the process of valuation and to be going "beyond GDP". We should make the cultural context of valuation transparent, and include cultural, spiritual, aesthetic and local values.

Governance/institutions/leadership

We must build and strengthen cooperation and collaboration at local, regional and global levels and nurture

trusting partnerships. As "TEEB can make a big splash", we should use its results, both in terms of values and policy instruments, and to develop cross-sectorial and inter-ministerial policy alignment. Communicating TEEB should be a simultaneous effort towards all target groups.

We should access traditional knowledge and professional practices for developing solutions and empower citizens and stakeholders to actively participate in decision making (particularly local indigenous populations) and collaborate rather than compete.

SESSION 8

LESSONS LEARNED FROM THE 2010 TARGETS AND CHALLENGES FOR SETTING 'POST 2010 BIODIVERSITY TARGETS'

Session Chairs:

Åsa Normann

Sweden

and **Shirin Karryeva**

Turkmenistan

Options for the CBD Strategic Plan and biodiversity targets post 2010

Jo Mulongoy

Convention on Biological Diversity (CBD) Secretariat

Mr. Mulongoy referred to the COP-9 Guidance on the revision of the Strategic Plan (decision IX/9), and presented the status of the work on the Strategic plan so far, based on consultations.

The proposed content of the post-2010 Strategic Plan comprise the following components: The Issues; Vision (long term target); Mission; Strategic Goals and Targets for 2020; implementation; monitoring, review and evaluation; and Support Mechanisms. The following Mission is proposed; "Living in harmony with nature". There are 3 options for the Mission presented with 4 Strategic goals and 20 post-2010 targets proposed. The speaker presented some of the 20 targets in more detail, and spoke about the rationale behind them and possible indicators and baselines.

The speaker stressed the importance of developing and agreeing upon indicators parallel with targets, an also clear guidance on how to set baselines. The SMARTness of some of the targets needs to be addressed.

More information is given in UNEP/CBD/SP/PREP/2 <https://www.cbd.int/doc/meetings/nr/ws4nrsp-cca-01/official/ws4nrsp-cca-01-sp-prep-02-en.pdf>

Relevant output from the UK/Brazil meeting on the CBD Strategic Plan in London 18–20 January 2010

Andrew Stott

Science Director, Joint Nature Conservation Committee, United Kingdom

Maximiliano da Cunha

Ministry of Foreign Affairs, Brazil

Mr Stott highlighted some of the results and recommendations from the Informal Expert Workshop on the updating of the Strategic Plan of the CBD for the post 2010 period, which was held 18-20 January 2010 in London.

It was suggested that the purpose of the Strategic Plan should be quicker, targeted, more effective in imple-

mentation, and serve as a global aspiration and flexible framework for the necessary national commitments. Further, it was recommended that the vision should be motivational, inspiring, relevant and convincing, inspirational and underpinned by measurable targets, and short and easily translatable. The options for a 2020 mission included halting biodiversity loss, taking actions necessary to halt or reduce loss, as well as restoration, human wellbeing and equitable benefit sharing. Lastly, the targets should be realistic and ambitious, sufficient to meet mission by 2020 and there should be no more than 20 targets.

Suggestions for implementation needs and on improving the function of CBD Bodies and Mechanisms were also given.

Mr. da Cunha added to the presentation and also suggested language on targets: "In light of Article 20.4 of the CBD, every year, from 2011 to 2020, Developed Parties to the Convention commit themselves to match every single dollar spent by Developing Parties to the Convention in the implementation of actions to preserve and conserve biodiversity in their national territories."

The full summary report from the workshop can be found by following the link below:

<http://www.cbd.int/sp/sp2010+/>

Output from UNESCO's 'International Year of Biodiversity Science-Policy Conference', Paris 25-29 Jan 2010

Salvatore Arico

Biodiversity Specialist, Division of Ecological and Earth Sciences, UNESCO

In the framework of the United Nations' International Year of Biodiversity (IYB), the UNESCO IYB Biodiversity Science Policy Conference (UNESCO Headquarters, Paris, France, 25-29 January 2010) brought together more than 250 participants from all continents to present new scientific findings on biodiversity relating to several key thematic and crosscutting issues, and to assess implications for policy-making. The Conference followed the UNESCO high-level launch of IYB in Paris on 21-22 January 2010. It took place five years after the International Conference on Biodiversity Science and Governance, also held at UNESCO Headquarters in Paris in January 2005. While taking into account the priorities expressed by the Parties to the CBD, the Conference gave special attention to the voice of the scientific community so as to highlight new knowledge that could be used in the context of biodiversity-related decisions. As such, the statement and recommendations from the Conference will be presented to a number of relevant meetings in the course of 2010, including the Trondheim Conference on the post-2010 Biodiversity Target.

Statement and recommendations from the conference can be found by following the link below: <http://www.unesco.org/mab/doc/iyb/recommendations.pdf>

Key considerations as seen from the scientific community

Anne Larigauderie

Executive Director, Diversitas, France

Ms. Larigauderie offered a series of recommendations, on behalf of the scientists involved in DIVERSITAS, the international programme on biodiversity science, on new 2020 biodiversity targets. She stated that the goal is to develop a small set of specific, measurable and relevant targets which bear directly on society's needs from biodiversity and ecosystems. Further, focus needs to be given to addressing indirect and direct drivers of biodiversity loss, promoting direct action, enhance implementation through planning, knowledge management and capacity development.

Some recommendations to achieve the above include; setting ambitious but achievable goals (current targets are unachievable or immeasurable), setting targets for multiple goals (e.g. harnessing carbon payments to protect biodiversity), plan for an adaptive process (situations might change rapidly and unexpectedly), structure the goals (red targets: to avoid situations we do not want, green targets: to support situations we do want), and exploit the science base (e.g. biodiversity indices, biodiversity processes, baseline & thresholds).

In order to be able to respond adaptively to changing environments and to new science as it emerges, the CBD process will need a close working relationship with the science community in developing these targets further. Two essential components will, in particular, need to be developed further, and will need to work very closely with the CBD, which are the proposed Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) and the global biodiversity observation system (GEO BON).

Conflicts between conservation targets: what can we learn from successful elephant conservation and the risks to other species

Graham I.H. Kerley

Director, Centre for African Conservation Ecology, Nelson Mandela Metropolitan University, South Africa

(not present – abstract only)

It is important to recognise the complexity of ecosystems in developing conservation frameworks. While the concept of umbrella or surrogate taxa encourages the focus of conservation activities on a few species whose conservation may conserve ecosystems or habitats,

there is a risk that this may fail, and ultimately even lead to the failure to conserve the original focal species. This is especially the case for large or keystone species which have the potential to alter ecosystems, particularly in enclosed conservation areas. The Addo elephants, in the Eastern Cape, South Africa, have been the focus of conservation efforts for 90 years, and the population has grown rapidly. This has however led to increasing intrinsic threats to the elephants in the form of elevated bull mortality and genetic problems. Furthermore, the conservation of the elephants has led to a loss of soil resources and plant species, altered plant community structure and architecture, and a decline in co-existing herbivores. It is predicted that the impacts of the elephants may lead to catastrophic density-dependent effects on this population. These findings highlight the risks of relying on small, enclosed areas for achieving conservation targets, as well as the need to recognise in advance, and manage for, possible conflicts between conservation targets.

UNEP efforts related to biodiversity and development of post 2010 biodiversity targets

Balakrishna Pisupati

Division for Environmental Law and Conventions, United Nations Environment Programme (UNEP)

Mr. Pisupati gave a review of the status quo regarding current targets, and follow-up responses in areas like financing. Implementation in sectors was given. Use of targets has been quite successful at the national level, but the development of indicators is, however, still limited for many of the targets. Good and measurable targets are needed, based on good science and the right timeframes. Targets must also be easily understood.

There is a need for long term goals/vision (2050) complemented with short term targets (2020), and the 2020-targets should point towards the 2050 goals. The need for sectorial targets is urgent, and the sectors themselves have to be involved to create ownership. Ends-and means targets have to be differentiated. Several examples of criteria and methodologies for development of new targets were given.

UNEP has given input to several of the ongoing processes i.e. CBD Strategic Plan, ABS process and supported regional consultations on the CBD Strategic Plan and an "Issue Group" on biodiversity is established under the EMG. UNEP is also strongly engaged in the IPBES, Green Economy and TEEB. The UNEP Programme of Work focuses on ecosystem adaptation governance policies in relation to resource efficiency and sustainable production and consumption. Biodiversity will be one of the ministerial themes at UNEPs meeting in Bali, and UNEP will be involved in the UN General Assembly high level session and CITES COP.

Developing new targets and on ensuring good linkage with available indicators and opportunities for measuring progress

Jane Smart

Director of Biodiversity Conservation Group, International Union for Conservation of Nature (IUCN)

IUCN's position on a new CBD strategic plan is to establish a new Vision for 2050 where biodiversity is not only conserved but also restored to deliver essential benefits for sustainable development. A new mission for post 2010 includes the need to establish by 2015 the necessary actions to enable the new Vision for 2050 to be accomplished.

To stop biodiversity loss by 2020, progress must be reported in 2012 (Rio+20) and an in-depth review should be performed in 2015. There is a need to coordinate with the 2015 reporting on the MDGs. IUCN recommends that the framework for new 2020 targets and indicators should use the DPSIR system (drivers-pressures-state-impacts-responses). Amendments of the CBD targets were also proposed, for instance instead of the traditional focus on "impacts" one could use more positive wording like "benefits".

Indigenous peoples perspectives on post 2010 biodiversity targets

Joji Carino

Tebtebba – Indigenous Peoples' International Centre for Policy Research and Education

In analyzing the roots of the contemporary crisis, social ecology highlights that imbalances in social relations, underpin and foster imbalances in the relations between humans and nature. Thus huge imbalances in economic and political power within society, and particularly inequalities in decision-making power, can translate into narrow economic and environmental decisions about land use, property rights and economic incentives which can be highly damaging to the natural environment and further marginalise the poor.

Strengthened environmental governance is needed at all levels - more democratic and inclusive- and fostering a shared ownership of the objectives of the CBD, and National Biodiversity Strategy and Action Plans (NBSAPs). Indigenous Peoples, local communities, farmers, and NGOs, all need to be involved at all levels of environmental governance – whether in shaping policy, implementing projects, or in campaigning against harmful policies and programmes. Civil society need to be embraced as the political constituency for furthering the objectives of the CBD. Winning hearts and minds for restoring ecosystems, is a political issue of our times.

A society-policy interface is as much needed as a science-policy interface for the CBD. The ecosystem-based approach is a framework for realising ecosystem requirements in development planning and implementation. A good example of applying this is the REDD+ policy framework and its implementation. There has been very narrow political space for the voices of indigenous peoples and local communities in the global negotiations of REDD+ programmes and projects. This risks further disenfranchisement, human rights violations, and loss of local land and livelihoods. The many years of experience gained in promoting community forestry can be undermined, along with biodiversity co-benefits.

SESSION 9

BREAKOUT GROUPS

Facilitators:

Natasha Walker, Consultant

Gabriele Obermayr, Austria

Ashgar Fazel, Iran

Beyond 2010: creating a new global strategic plan for biodiversity

Poverty

Poverty is one of the key drivers of biodiversity loss. However, biodiversity can be an answer to poverty reduction: "Biodiversity pays the bill of poverty". Benefit sharing and PES are key mechanisms to combat poverty.

Further, biodiversity targets should be mainstreamed in poverty eradication strategies, and poverty reduction should be prominently portrayed in the vision/mission of the CBD's Strategic Plan (SP). Many countries living with poverty feel the SP does not address the poverty issue adequately, particularly in creating a sense of urgency for biodiversity loss. Should targets in the SP relate directly to poverty reduction?

Synergy among conventions

The range of conventions in the focus of biodiversity needs to be extended in order to exchange information and visualise the linkages between various targets of biodiversity and climate change (and other conventions). Further, cooperation/coordination among the secretariats and at national level (within the environment ministries and between government agencies) needs to be fostered.

It must be ensured that actions taken under different conventions are not in conflict. For instance, climate change actions (mitigation/adaptation strategies) must not harm biodiversity (i.e. monoculture forests, biofuels, etc.). Performance based evaluation systems could be introduced as an incentive for administrators to link biodiversity and climate change targets.

Mainstreaming

Synergies must be created between biodiversity agendas and other agendas relevant to biodiversity: climate change (REDD+ would be a positive example), economy, urban, human development, business agenda, and poverty alleviation strategies. The EMG report can be useful in providing information on how to ensure cross-sectorial integration of biodiversity.

Mechanisms should be developed to involve all relevant stakeholders in the implementation process. It should also be ensured that biodiversity is prioritized and fully integrated into all sectors, including the private sector. Furthermore, other sectors and the local community must be involved in setting new targets, thus creating ownership as well as a financial mechanism.

Targets

The targets must be simplified and structures according to status and implementation (legal, capacity, finance). They must be made attractive, understandable and linked to human well-being. They also need to be ambitious and time-bound, but achievable and well balanced to avoid politicization through an overemphasis of singular targets. The global framework needs to be flexible with staggered, sectorial and regional targets developed according to respective conditions. All relevant stakeholders must be involved in the development of targets (bottom-up approach).

There needs to be a time-line and "stepping-stones" (2015 and 2035 for mid-term reviews of the implementation process) and a regular use of indicators to revise the targets at national level. The Strategic Plan should be a flexible document for planning and review processes.

Is 2020 too far away to update NBSAPs? The amount of work involved means that 2012 may be too early to "translate" global targets to national level.

It is a challenge to effectively manage existing Protected Areas (PA). The coverage of PAs for ensuring *in situ* conservation needs to be extended in order to prevent the extinction of species and maintain genetic diversity. There is also a need to integrate the ecosystem approach in CBD programmes of work. The inventories of species need to be completed.

Targets should address direct and indirect drivers and the relevant sectors. There should also be a target on ecological connectivity to avoid fragmentation.

Proposals and ideas:

- Prevent human-driven extinction to zero by 2020, by safeguarding sites, sustainable management and alternative uses
- All targets are timed to 2020, but how can they be related to other international targets (e.g. MDGs)?

Indicators and data

First of all, baselines must be established to know where to start from and identify indicators already available. An observation system should be created to collect needed data, which should be identified by the scientific community, but not be limited to biological indicators.

The IUCN Red List should be utilised. Reports using indicators should be externally audited to verify them (for credibility). The 2010 Biodiversity Indicators Partnership does important work which should be continued.

Ensure broad accessibility, collection, openness and dissemination of data, in line with the Principles of the Conservation Commons and in dialogue with public and

private sectors as well as indigenous and local communities.

Implementation/supporting measures

Accountability and transparency must be ensured in implementing the Strategic Plan.

Capacity building needs of those involved in implementation must be identified and built on, for example in accessing GEF funding (and other funding). Sufficient resources should be ensured to revise and implement NBSAPs and improve institutional capacity on regional and sub-regional levels. Capacity should also be built in partnerships, promote technology transfer and public-private partnerships.

The requirements made by CBD and GEF should be made less demanding (fewer reports). Global networking structures (such as GEO BON) are useful in supporting implementation.

The Access and Benefit Sharing (ABS) regime should be approved by COP10: necessary arrangements for its effective implementation include the flow of resources. There should also be a focus on the benefits of biodiversity and a clear mechanism for benefit sharing, especially for PAs.

PES is the most effective means to finance implementation.

"Perverse subsidies": Who measures the subsidies and is there a clear line between subsidies and incentives? There is a need for financial reform and better communication. There is also a need to work on an innovative financial mechanism and establish incentives to encourage a change from "business as usual" and promote conservation behaviour, removing bad incentives.

Communication

An appropriate communication strategy should be developed for different target groups (incl. policy makers) The Strategic Plan should be supported with good and targeted communication toolkit-plans that can be tailored to different audiences. Best practices should be disseminated in all languages of the CBD and in a clear way for all target groups.

SESSION 10

GETTING THE TARGETS RIGHT – COMPLETING THE CHAIRMEN'S REPORT

Session Chair: **Finn Katerås**

Project manager, Norwegian Directorate for Nature Management

Less time than originally scheduled was available for discussion on the Chairmen's Report, and reference is here made to relevant text below on Session 12.

SESSION 11

COMMUNICATING BIODIVERSITY

Session Chair: **Langston James Goree VI (Kimo)**

International Institute for Sustainable Development

In introducing the speakers and inviting the participants to engage in a stimulating discussion, Kimo Goree emphasized that "biodiversity is not climate change" and that promoting biodiversity as a priority is a challenge in a year that will likely be dominated by climate change negotiations. He underscored the importance of communicating biodiversity in a way that is accessible to the public.

Does biodiversity matter, and if it does how do we communicate it?

Fredrik Moberg

Albaeco, Sweden

Fredrik Moberg, Director of Albaeco (an independent non-profit organization seeking to 'communicate the latest in sustainability science with a focus on Nature's importance to society and the economy') presented important aspects of biodiversity that need to be communicated more effectively and spoke on we communicate it.

He noted that often there is failure in communicating a strong message because the audience does not feel "connected" to the topics in the message. Moberg said that biodiversity must become everybody's business, and we must show how it is linked to health, money, food, security, livelihoods and climate change. He underlined that we need to better understand our target groups, and address their underlying motivations and affective dimensions. There is a need for understandable, targeted and relevant information to key sectors and to the general public, as well as increased educational efforts at different levels.

Moberg also presented a ten-point "to-remember list" for effective post-2010 communication of biodiversity, including that we "can't save the rest of our fellow species without better understanding of our own", that we should present dreams rather than nightmares, that we should use the "climate momentum", that we should

avoid jargon (perhaps even the word ‘biodiversity’), that we need to get the message across to the finance ministers and businesses, that we must remember the young generation, and that we should use social media to increase participation.

Using the International Year of Biodiversity for outreach and communication

David Ainsworth

Secretariat of the Convention on Biological Diversity

David Ainsworth spoke on how the International Year of Biodiversity (IYB) should also be used as an opportunity for the biodiversity community to encourage people to discover the biodiversity that surrounds us, to realize its value, our connection to it and the consequences of its loss and not least to act to save it. He presented four key goals for IYB, being to raise awareness of how biodiversity is important for our lives, of the serious consequences of its loss and of what people have already done to save biodiversity; to promote new and novel ways to safeguard biodiversity; to encourage people to take immediate steps to reduce the rate of loss of biodiversity; and to initiate dialogue on steps for the post-2010 period.

Ainsworth presented a number of ways in which people and governments and civil society can take advantage of the opportunity of the International Year of Biodiversity, through communicating work that has been done (including scientific achievements, reports and assessments and national CBD implementation), through building media partnerships, by holding forums to bring together relevant stakeholders (including civil society, business and production sectors), and by using the International Day for Biological Diversity on 22 May.

SESSION 12

CLOSING SESSION

Session Chair: **Peter Schei**, Conference Co-chair

Presentation of Chairmen’s Report with conclusions and recommendations

Peter Schei

Conference Co-chair

Conference co-chair Peter Schei presented a summary of the conclusions in the Chairmen’s draft report. He emphasized that he and co-chair Katerås would be held accountable for the content of the final report, but stressed that the document is based on the findings and recommendations of Conference participants, and encouraged their continued input. He explained the report considered the presentations, questions, written suggestions and working group discussions of the Trondheim meeting, along with advice from the Friends of the Chairs. Schei also said the report would be forwarded as information documents at upcoming CBD meetings and made available for other processes.

Emphasizing that the full report would include more details on the conference and improved supporting text, Co-chair Schei outlined twelve key messages based on the conference:

1. The 2010 target has inspired action, but will not be reached in full
2. Biodiversity loss and degradation of ecosystem services have increasingly dangerous consequences for human well-being, even survival for some societies,
3. Urgent action is needed to address the loss of biodiversity, especially to avoid tipping points
4. Biodiversity is the natural capital for sustainable development
5. Inaction is more expensive than action
6. Many more economic sectors than we realize depend on biodiversity
7. Biodiversity and climate change are inextricably linked
8. Implementation! Implementation! Implementation!
9. Now is the time to scale up our science and knowledge
10. We need to communicate that biodiversity matters
11. Substantially more resources are needed
12. Getting the biodiversity targets right

In elaborating on the main messages, he noted the need to convey urgency while inspiring hope, the need for efforts to scale-up science and knowledge without allowing gaps in knowledge to be used as an excuse not to act, and that targets should be ambitious and inspiring without being not be “impossible or illusory”. Schei also referred to Jostein Gaarder’s statements on the first day that “we can’t permit us the decadence it is

to be pessimists" and that "the struggle to preserve the biological diversity of the planet will never be over".

Several participants commended the Co-chairs on the report and identified additional issues of concern, including gender considerations, reference to biodiversity losses in the polar regions as well as tropical regions; and simplifying targets and indicators.

Closing address

Spencer Linus Thomas

Secretariat of the Convention on Biological Diversity

Chair of CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), Grenada

Spencer Linus Thomas, present SBSTTA Chair, referred to the International Year of Biodiversity and to the increased focus on climate change as key opportunities. He emphasized the importance of building on ongoing efforts to mainstream biodiversity, to connect better with the public, to bridge the science-policy gap, to successfully conclude a CBD regime on access and benefit sharing (ABS) and to enhance CBD implementation. He applauded the work of those involved in the Trondheim Conferences, and said it would provide valuable information for upcoming CBD meetings.

He said the CBD is at a critical juncture and encouraged focusing on "ambition over realism" to promote the development of new solutions. Thomas identified making biodiversity processes more representative, relevant and effective as a central task, and said although the road ahead is daunting, success in addressing the global biodiversity challenge is possible.

Closing address

Sigbjørn Johnsen

Minister of Finance, Norway

Johnsen presented how the Minister of Finance is responsible in Norway for coordinating the Government's work on sustainable development, and said that biological diversity is an important part of this work, both in itself and as a base for economic activity.

He stressed that biological diversity is necessary to achieve a development that is socially and economically sustainable, within the boundaries of healthy ecosystems, and that sustainable development should be given attention in Governments' work in all areas. Johnsen saw loss of biological diversity and an unbalanced economy can be seen as two sides of the same coin, and said our generation has a responsibility to hand over to the next generation a society that is in good shape.

Johnsen pointed out that it is not enough only to look at its economic wealth when measuring progress in a nation's wealth. He said that if we destroy the balance in nature between species and ecosystems balance we

risk starting harmful processes that could become very expensive to repair or even irreversible. The precautionary principle should therefore guide our policies at all times.

He welcomed the report now being developed for biological diversity on "The Economics of Ecosystems and Biodiversity" (TEEB), and noted that the findings clearly show that economies around the world will suffer if the current rapid loss of species and ecosystem services continues. He also referred to the strong connection between poverty and degradation of ecosystems, and noted that we will not be able to reach the Millennium goals for sustainable development and eradicate poverty if natural resources are lost or degraded.

The Minister acknowledged that the conference had helped emphasize how the real value of ecosystems and biodiversity is often strongly underestimated or ignored, and that we must take into consideration what services nature provides for us and how much it will cost if these services are lost. He also pointed to the importance of addressing sustainable development in public decisions in a better way, to the role of subsidies that can be harmful to nature, and to for using of economic instruments as a way to protect nature (both at the national and global levels). Investing in and protecting the world's natural capital can be a cost efficient way to reduce global warming and reduce the loss of species.

Johnsen concluded by emphasizing that getting the biodiversity targets right is important – reaching them even more so, and by noting that the conference had made a valuable contribution by pointing at what economic values are at stake when biological diversity is lost.

In closing, the Co-chairs Schei and Katerås thanked participants, speakers, staff and organizers, and a draft copy of the 'Chair's Report' was distributed to participants.