cohab2008

Second International Conference on Health & Biodiversity

25th - 28th February 2008, Galway, Ireland

Official
Conference
Programme

COHAB 2

Second International Conference on Health and Biodiversity

Galway, Ireland, 25th to 28th February 2008

Conference Programme

Contents

COHAB 2

Second International Conference on Health and Biodiversity
Galway, Ireland,
25th to 28th February 2008

Conference Programme

Welcome

On behalf of the COHAB Initiative Secretariat and our international partners, I am very pleased to welcome all of you to Galway for this Second International Conference on Health and Biodiversity.

The First International Conference on Health and Biodiversity in 2005, held here in Galway and attended by 150 people from over 60 countries, aimed to highlight the linkages between the health of the world's ecosystems and the health and well-being of human communities, and to discuss possible avenues for further research and action on the issues. The conference recognised that the conservation of biodiversity and the wise use of its resources is fundamental to the health and livelihood sustainability of all of the world's people. The final statements from the 2005 meeting called for an increased effort and better co-operation across disciplines and across borders to halt the loss of biodiversity for the benefit of all life on Earth,

A number of specific themes were addressed during the 2005 conference, including Disease Ecology, Natural Products and Drug Resources, and Agricultural Biodiversity. However, isolating specific issues can easily overlook the fact that biodiversity underpins every aspect of our health and livelihoods. For this COHAB 2 conference, with almost 200 delegates from 70 nations in attendance, we have selected three themes for the workshop discussions, which we feel best highlight the critical nature of the relationship between health and ecosystems, and also underpin the need for a wider holistic and systemic approach to health and human well-being. The issues of *Disaster Prevention, Relief and Recovery, Food resources, Diet and Nutrition, and Emerging Infectious Diseases*, are closely interlinked, and all have a relevance to issues of traditional knowledge, medicinal resources, climate change, poverty reduction and livelihood security.

Floodwaters, Ganive Benin

COHAB 2 is not just about highlighting problems – this conference is about identifying solutions, and encouraging greater partnership at all levels to address these issues. The Millennium Ecosystem Assessment, and the recent reports of the Intergovernmental Panel on Climate Change, have clearly identified the urgent need for all sectors of governance and society to recognise the value of ecosystems and the goods and services they provide, based not simply on monetary worth but on the inestimable value of the protection against illness, disaster and hunger which biodiversity provides. The issue is not simply one of value gained, but also losses

Grape Pickers, Slovenia

avoided, and ensured security of resource supply. In response, this conference will work to produce a series of evidence-based reports on key issues, for consideration at subsequent multilateral meetings on the environment, health, climate change and development. The conference will mix broad discussions with presentations of individual case studies, highlighting examples where ecosystem approaches have been taken to address community health and welfare needs, identifying opportunities for enhanced collaboration, and setting the foundations for future partnerships. Each of us here this week has a role to play, and we look forward to working with you in what we believe will be an important and exciting week of discussions.

Waiting for the Morning Catch, Mui Ne, Vietnam

The COHAB Initiative Secretariat and our partners are grateful to the Government of Ireland for the tremendous support which we have received (through the Department of the Environment, Heritage and Local Government, the Department of Health and Children, and the Department of Foreign Affairs) for organising this event. Considerable thanks are also due to SwedBio (Sweden), GTZ (Germany), DEFRA (United Kingdom), USAID (United States), the Government of Canada, and the International Development Research Centre (IDRC, Canada), for their generous support in bringing delegates from developing countries and indigenous communities to the conference. Thank you also to the International Association for Ecology and Health (EcoHealth), the World Resources Institute, and the World Business Council for Sustainable Development for additional support. There are many others who have been supporting us behind the scenes to who we are very grateful.

Particular thanks are due to the COHAB 2 chairing organisations and COHAB Initiative Steering Committee partners – the UN Food and Agriculture Organisation, WHO, UN CBD Secretariat, Bioversity International, the Wildlife Conservation Society, the ProAct Network, UN Development Programme, Global Environment Facility, UNEP-WCMC, and IUCN.

We are saddened that a good friend and supporter of the COHAB idea, the late Dr. Mario Ramos, could not be here with us in person. But we believe he is here with us in spirit, and the fact that so many people have again assembled here in Galway – some returning, some new – to address the issue of biodiversity and its importance to human health, is a testament to the spirit of collaboration, friendship and understanding, and appreciation of all of the world's living resources, which Mario exemplified.

We hope that this week's discussions will inspire you to enhance partnerships for biodiversity and human well-being in your own countries and spheres of work. We all have a busy week ahead of us here in Galway, but we hope you will also take the opportunity to relax and to have some fun too. We have some of Ireland's finest food and music to share with you, and look forward to meeting as many of you as possible during the week.

We hope you enjoy your stay,

Conor Kretsch
Director

Fidelma Murray
Training and Events Manager

COHAB Initiative Secretariat,
Galway, Ireland, February 2008

Conference Format

The conference will open with a full-day plenary session during which recent developments in research and policy will be highlighted, with an overview of key recommendations from the Millennium Ecosystem Assessment, details of the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and the outputs of other relevant meetings since COHAB 2005. Over the following two days, delegates will break out into working groups to focus on important thematic areas. The discussions will include examples of inter-disciplinary projects from international level to community level, with reviews of existing policies and research programmes. Case studies of community-based initiatives will be of particular importance.

In order to strengthen the links with health and development communities, and to reinforce the concept of collaboration and holistic approaches, each workshop will be jointly chaired by organisations representing each sector. The workshop topics and proposed chairs are as follows:

WORKSHOP 1:
Disaster Prevention, Relief & Recovery
Harnessing ecosystem services for prevention, recovery and redevelopment programmes.
Chaired by the Secretariat of the Convention on Biological Diversity and the ProAct Network.

WORKSHOP 2:
Food Resources, Diet & Nutrition
Meeting food security and poverty challenges with biodiversity.
Chaired by Bioversity International and the Food and Agricultural Organisation of the United Nations.

WORKSHOP 3:
Emerging Infectious Diseases
Integrating biodiversity conservation and management into disease prevention and control programmes.
Chaired by the Wildlife Conservation Society and representatives of the World Health Organisation.

In each of the workshops, participants will be asked to consider three key themes in their discussions - these will form the basis of the workshop reports:

(i) Systemic approaches to health and development - building, communicating and reinforcing the conceptual framework on health and biodiversity linkages.

(How can the ecosystem approach to health and development be mainstreamed into policy and decision making processes? What lessons can be drawn from past experience? What research gaps must be addressed?)

(ii) The use of strategic assessments - ensuring that health-biodiversity relationships are appropriately considered and monitored in the design and development of plans, programmes and policies on health, social welfare and economic development.

(How can biodiversity and health considerations be addressed holistically? What lessons can be learnt from experience with Strategic Environmental Assessments, Health Impact Assessments, economic Cost Benefit studies, and Root Causes analysis?)

(iii) Climate change - accounting for the potential impacts of climate change on ecosystem services in the context of each workshop theme.

(Considering that Climate Change is likely to be a major complicating factor for these holistic approaches, and bearing in mind the potential risks to biodiversity conservation and public health protection which it presents, what are the key threats to ecosystem services which need to be addressed?)

The workshop reports, and the final statement and proceedings from COHAB 2 will be brought forward for consideration at subsequent international and multi-lateral conferences and fora on health, development, disaster risk reduction, climate change and environment.

Opening Plenary Session

Monday 25th February 2008

Morning Session 1 - Introduction and Welcome

07.30 - 08.50	Registration
08.50 - 09.00	Artistic Performance - Liadàn
09.00 - 09.05	Welcome
09.05 - 09.15	Official Address - *On behalf of United Nations Secretary General Mr. Ban Ki Moon*
09.15 - 09.30	Official Opening - *Ireland Government Minister John Gormley*
09.30 - 09.45	Official Address - *North Ireland Assembly Minister Arlene Foster*
09.45 - 10.00	Official Address - *United Kingdom Government Minister Joan Ruddock*
10.00 - 10.15	Opening Remarks - *Conor Kretsch, COHAB Initiative Secretariat*
10.15 - 10.25	UN Convention on Biological Diversity - *Jo Mulongoy*
10.25 - 10.50	UN Development Programme - *John Hough*
10.50 - 11.15	UN World Health Organisation - *Diarmid Campbell-Lendrum*
11.15 - 11.35	**Refreshments**

Morning Session 2 - Global Perspectives, the MA and the MDGs

11.35 - 12.00	UN Food and Agriculture Organisation - *Barbara Burlingame*
12.00 - 12.25	Wildlife Conservation Society - *Kristine Smith*
12.25 - 12.50	UN Educational, Scientific and Cultural Organisation - *Ana Persic*
12.50 - 13.15	Q & A
13.15 - 14.30	**Lunch**

Afternoon Session 1 - Global Perspectives, the MA and the MDGs (continued)

14.30 - 14.55	Bioversity International - *Pablo Eyzaguirre*
14.55 - 15.20	UNEP-WCMC - *Monika MacDevette*
15.20 - 15.45	ProAct Network - *David Stone*
15.45 - 16.10	Q & A
16.10 - 16.30	**Refreshments**

Afternoon Session 2 - Global Perspectives, the MA and the MDGs (continued)

16.30 - 16.55	IUCN - *Neville Ash*
16.55 - 17.20	Intergovernmental Panel on Climate Change - *Camille Parmesan (University of Texas)*
17.20 - 17.45	Q & A
17.45	**Close**

Evening Events

19.00 - 20.45	**Welcome Reception and Speed Networking** Welcome to Galway - I*reland's Minister for Overseas Development, Mr. Micheal Kitt TD* Sustaining Life - *Aaron Bernstein MD, Centre for Health and the Global Environment, Harvard Medical School*

Workshop 1: Disaster Prevention, Relief and Recovery

Guidance for Participants

1. Background

The loss of ecosystem services can increase our vulnerability to the impacts of natural and man-made disasters – flooding, storms, earthquakes, drought, conflict, etc. Those who are poor or sick, or who experience low levels of livelihood security, are likely to be at greatest risk from such events, and are typically more dependent upon ecosystems for their well-being. There is compelling evidence that the effects of natural and man-made disasters may be exacerbated by ecosystem change, unsustainable development and biodiversity loss. A failure to recognise these issues and to account for biodiversity and essential ecosystem services in disaster risk reduction, relief and redevelopment programmes, may simply negate today's relief efforts if such disasters recur in the future. Furthermore, in a world where climate change may result in sea level rise, increased drought risk and more frequent and more extreme storms, the services provided by biodiversity will be critical for human communities most at risk from such events, in both developing and developed countries. Refugees from disasters, including climate change refugees, may be particularly vulnerable to added burdens of disease, food insecurity and malnutrition as a result of their displacement or the loss of access to ecosystem benefits. Therefore, where appropriate, the protection, management, monitoring and restoration of ecosystems should play a central role in disaster prevention, early warning, recovery, and emergency aid programmes. Ecosystems and the benefits they provide, and the impacts of disasters (including refugee crises) often straddle national boundaries, and influence the lives of communities over huge areas. Collaboration across disciplines and across borders in addressing this issue is therefore essential.

The potential importance of ecosystems to reducing disaster risk and providing security for people in the wake of disasters has not been fully addressed by either the biodiversity conservation or disaster relief communities. There is a gap in awareness, policy and action that needs to be filled. The Global Platform for Disaster Risk Reduction

Brush Fire California

Rwandan Boy

(formerly known as the Inter-Agency Task Force for Disaster Reduction) held its first meeting in July 2007, in Geneva. The meeting included a workshop on Ecosystems and Environmental Management. The workshop report states:

> *"Around the world, examples can be found of how indigenous communities, national governments, and international organizations have incorporated environment into their risk reduction efforts. Yet, clear guidance on best practice is not readily available. In addition, considerable confusion persists regarding the role of environment in disaster risk."*

This COHAB 2 workshop on "Disaster Prevention, Relief and Recovery" aims to help address this uncertainty. The discussions will highlight successes where conservation and disaster reduction projects have been integrated, and explore how the two sectors can better co-operate. The Workshop will produce a series of recommendations on best practice for cross-linking between biodiversity conservation, the MDGs, and disaster risk reduction, including disaster risks associated with climate change.

2. Workshop format and organisation

This workshop will be chaired by the Secretariat of the United Nations Convention on Biological Diversity, representing the major multi-lateral process on the conservation of biodiversity, the sustainable use of its components, and the equitable sharing of the benefits derived from genetic resources; and the ProAct Network, a global non-governmental organisation established in 2007 to support disaster risk reduction, crisis management and relief efforts, as these are shaped by global environmental change.

Workshop 1: Disaster Prevention, Relief and Recovery
Chaired by UN CBD and the ProAct Network

Tuesday, 26th February - Parallel Workshops Day 1

Morning Session - "Building cross-sector understanding"

08.50 - 09.10	Morning coffee
09.10 - 09.20	Welcome
09.20 - 09.35	Overview of workshop themes and format
09.35 - 10.05	*Balancing Needs and Priorities: Human Well-being and Ecosystem Functioning in Post-conflict and Disaster Situations* David Stone (ProAct Network)
10.05 - 10.30	*The Convention for Life on Earth - links between the programme of work of the CBD with Disaster Risk Reduction* Jo Mulongoy (CBD)
10.30 - 10.55	*Title to be confirmed* Alfredo Quarto, Mangrove Action Project
10.55 - 11.15	**Refreshments**
11.15 - 11.40	*Ecosystem support for livelihoods and health in post-conflict Cambodia* Jennifer Daltry (Flora and Fauna International)
11.40 - 12.05	*Environmental Restoration in Refugee Hosting Areas: Refugees and Communities restoring and managing their environment - Lessons from the Horn of Africa* Ed Barrow (IUCN)
12.05 - 12.30	Discussion
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - "Strategic Assessments"

14.30 - 14.40	Overview and Discussion
14.40 - 15.05	*Ecosystem services and Strategic Environmental Assessments for disaster reduction in Asia* Asha Rajvanshi (Wildlife Institute of India / IAIA)
15.05 - 15.30	*WHOse quality of life? New international methods for assessing the effects of disasters* Suzanne Skevington (WHO Centre for Quality of Life)
15.30 - 15.55	Discussion
15.55 - 16.15	**Refreshments**
16.15 - 16.40	*Application of EcoHealth Approach to Address the Health Risk of Communities affected by Drought in Central India* (Ragwesh Ranjan, Development Alternatives, India)
16.40 - 17.05	*Assessing the impact of disasters on ecosystems and health - experience from Ethiopia* Samuel Tadesse (CARE Africa)
17.05 - 17.30	Discussion
17.30	**Close**

Workshop 1: Disaster Prevention, Relief and Recovery

Guidance for participants (continued)

3. Themes

The central theme of WORKSHOP 1 is "harnessing ecosystem services for prevention, relief and recovery programmes."The workshop will discuss how biodiversity and ecosystem services can play a role in reducing the risk and / or impacts of natural and man-made disasters; how they can support relief and recovery efforts following a disaster or conflict situation; and how biodiversity and ecosystem integrity must be considered in planning and implementation of rebuilding programmes.

(i) Systemic approaches to health and development - building, communicating and reinforcing the conceptual framework on health and biodiversity linkages.

(How well do organisations working in the areas of crisis prevention, emergency relief, refugee aid and rehabilitation etc, communicate and co-operate with conservation organisations? How can ecosystems support disaster risk reduction and emergency response strategies? What are the most important ecosystems / goods and services in the context of crisis prevention and disaster recovery? Is the humanitarian sector sufficiently aware of the value of ecosystem services in avoiding and reacting to disasters? How exactly can that value be measured? Conversely, is the conservation community fully aware of the possible connections between conservation planning and disaster risk planning? Which ecosystems are of greatest importance? Which regions are most dependent upon ecosystem services in this context? Can donor countries do more to promote and support an ecosystem approach to crisis prevention and recovery? What are the information needs of each sector? What can agencies within the U.N. system do better in this regard? How can the programme of implementation of the Convention on Biological Diversity be mainstreamed into disaster / crisis management planning? Could multi-lateral biodiversity agreements (Convention on Biological Diversity, Convention on Migratory Species, Convention to Combat Desertification, the Ramsar Convention on Wetlands etc) play a supportive role in the Global Platform for Disaster Risk Reduction? What lessons can be drawn from past experience? What case studies of multi-disciplinary approaches can be highlighted? What gaps in research, policy and action must be addressed?)

(ii) The use of strategic assessments - ensuring that health-biodiversity relationships are appropriately considered and monitored in the design and development of plans, programmes and policies on health, social welfare and economic development.

(How should the links between ecosystems and human well-being be factored into assessments of disaster risk reduction or crisis management strategies? Are there common cross-cutting indicators that can be used? Can specific practical approaches be utilised to enhance cross-sectoral collaboration? What are the roles and responsibilities of various sectors in maintaining ecosystem integrity in high-risk areas? How should ecosystem services and vulnerabilities be factored into risk assessment and crisis management procedures? How can conservation strategies, for example in respect of protected areas, take into account disaster risks? And how should refugee support programmes take account of ecosystems? In refugee situations, can issues such as the availability of food, fuel, and water resources, and the risks of disease emergence, be meaningfully addressed through an ecosystem approach?)

Flooded Road, India

(iii) Climate change - accounting for the potential impacts of climate change on ecosystem services in the context of each workshop theme.

(How does climate change increase disaster risks, and can ecosystems play a part in adaptation to or reducing these risks? If climate change is expected to increase the vulnerabilities of certain communities, and increase the risks of disasters associated with extreme weather events, water scarcity etc, how can ecosystem integrity and biodiversity conservation reduce such risks? Conversely, if biodiversity and ecosystems are likely to be severely affected by climate change, in what areas will this lead to greatest risks to human communities? Can specific solutions be devised from traditional knowledge, e.g. of food resources? Should we now start planning for future "climate change refugee" situations through ecosystem planning and management? Where, how, and whom should be involved?)

Other general points for consideration during the workshop include:

- The role of biodiversity in disaster risk reduction.
- The value of biodiversity to human health in the wake of disaster events (e.g. protecting against disease, providing food security, and protection from further emergencies).
- Roles and responsibilities in maintaining ecosystems in high risk areas.

Workshop 1: Disaster Prevention, Relief and Recovery
Chaired by UN CBD and the ProAct Network

Wednesday, 27th February - Parallel Workshops Day 2

Morning Session - "Climate Change"

08.50 - 09.10	Morning coffee
09.10 - 09.35	Review of previous day's discussions
09.35 - 10.05	*Title to be confirmed* Tommy Garnett (Environmental Foundation for Africa)
10.05 - 10.30	*Wetland ecosystems, climate change, and disaster risk* Teresita Borges (Ministry of Science, Technology and Environment, Cuba)
10.30 - 10.55	*Impact of persistent drought via the pathway of household food insecurity, water shortage and poor sanitation: a case in most devastated areas of Viet Nam* Pham Van Hoan (National Institute of Nutrition, Viet Nam)
10.55 - 11.15	**Refreshments**
11.15 - 11.40	*Climate change, forest fires and human health* Volker Hammen (EU ALARM project, Germany)
11.40 - 12.05	*Community Risk Management and Climate Change* Peter Crichton (Concern, Ireland)
12.05 - 12.30	Discussion
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - Preparation of Report

14.30 - 15.30	Working Groups
15.30 - 15.50	Feedback from Working Groups
15.50 - 16.10	**Refreshments**
16.10 - 17.30	Agreement of report content
17.30	**Close**

Workshop 2: Food Resources, Diet and Nutrition

Guidance for participants

1. Background

Agricultural biodiversity includes the entire variety of living things associated with agriculture, including the plant and animal species used for food, and the other organisms, habitats and ecosystems which support food production. The Millennium Ecosystem Assessment has outlined the important functions of biodiversity, which, through the provision of ecosystem goods and services, support all human life and our development, including the provision and safeguarding of vital food resources. In addition, detailed research (such as the work of the U.N. Food and Agriculture Organisation, the Consultative Group on International Agricultural Research and others) has clearly established that food production systems that conserve and encourage biodiversity often produce higher yields, and support crops which are naturally more resistant to climatic extremes and diseases than strict monocultures in intensively farmed landscapes. In some areas, food resources based on native species and wild food types, also have higher nutritional value, are more robust, and are more important to people's livelihoods and well-being, than non-indigenous foods. Utilising and enhancing biodiversity, particularly in the development of native breeds, can have significant benefits for local economies and rural livelihoods.

Agricultural biodiversity is likely to become increasingly important for food security as the effects of climate change become more pronounced and widespread. Climate change presents particular threats to food production systems and to animal and plant health, through impacts on weather patterns, soil quality, pollinators, the availability of clean water, and the occurrence and distribution of pest species and infectious diseases. Enhancing the diversity of food crops, and ensuring the success of measures to conserve unmanaged agricultural biodiversity, can not only provide real economic and social benefits in the short term, but can also help the agricultural sector adapt to climate change and protect crop and livestock health in the longer term.

The report from the first COHAB conference in 2005 states:

> *"In devising and implementing national development strategies and agriculture policies, governments should ensure that the genetic and species diversity of agricultural produce is preserved and improved, that the ecosystems which support food production are conserved, and that the importance of dietary diversity based on crop and livestock varieties is explained and promoted to producers and consumers."*

Chilli Peppers drying in Rajasthan, India

In the light of the U.N. Millennium Development Goals and the growing threat of climate change, agricultural biodiversity and natural food resources take on an even greater importance for all communities. This workshop on "Food resources, Diet and Nutrition" aims to synthesise current thinking on the role of biodiversity in feeding the world's growing population and addressing issues of nutrition, dietary health and livelihood security; and also to explore mechanisms for increasing collaboration between the health, agriculture and biodiversity sectors on this issue.

2. Workshop format and organisation

This workshop will be chaired by the Food and Agriculture Organisation of the United Nations, representing a multi-lateral forum for education and experience-sharing on agricultural policy and food resource management; and Bioversity International, one of the leading authorities on agricultural biodiversity, representing the Consultative Group on International Agricultural Research (CGIAR), a global network which conducts research and promotes action on sustainable food production.

Workshop 2: Food resources, Diet and Nutrition
Chaired by UN FAO and Bioversity International

Tuesday, 26th February - Parallel Workshops Day 1

Morning Session - "Building cross-sector understanding"

08.50 - 09.10	Morning coffee
09.10 - 09.20	Welcome
09.20 - 09.35	Overview of workshop themes and format
09.35 - 10.05	*Collaborations and Partnerships to Ensure Sustainability of Food Biodiversity* Barbara Burlingame (FAO, Rome)
10.05 - 10.30	*Nutritional Composition of aquatic species from rice fields in Laos* Mulia Nurhasan (University of Tromso, Norway)
10.30 - 10.55	*Potential Role of Traditional Foods in Enhancing Nutritional Health and Livelihoods* Patrick Maundu (CGIAR, Kenya)
10.55 - 11.15	**Refreshments**
11.15 - 11.40	*Conserving Biodiversity for Improved Nutrition, Food Security and Livelihoods in Uganda* Denis Marsha Kabuuka (SLINT, Uganda)
11.40 - 12.05	*Traditional Africa Dark Green Leafy Vegetables - a South African Experience* Retha Van der Walt (Morogo Research Programme, NW University, S. Africa)
12.05 - 12.30	Discussion
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - "Strategic Assessments"

14.30 - 14.40	Overview
14.40 - 15.05	*Title to be confirmed* Pablo Eyzaguirre (CGIAR, Rome)
15.05 - 15.30	*The value of biodiversity and natural food resources in combating the spread of HIV/AIDS* Josef Grimm (GTZ, Germany)
15.30 - 15.55	*Analysis of Indigenous Traditional Knowledge: Cultural Importance and Nutritional Content of Wild Edible Plants* Malek Batal (University of Ottawa, Canada)
15.55 - 16.15	**Refreshments**
16.15 - 16.40	*Social Dimensions of Bushmeat Marketing in the Upper Guinea Hotspot: Household budgets, hunting offtake, meat consumption and nutritional status in SE Liberia, 2000-2005* Reg Hoyt (Forest Partners International)
16.40 - 17.05	*Synergies of Agricultural Biodiversity and Health - the Sauri Millennium Village Model* James Wariero, (Millennium Villages Project, Kenya)
17.05 - 17.30	*International task Force on Indigenous Peoples' Food Systems and Nutrition* Harriet Kuhnlein, (CINE, Canada)
17.30	**Close**

Workshop 2: Food Resources, Diet and Nutrition

Guidance for participants (continued)

3. Themes

The central theme of WORKSHOP 2 is "meeting nutrition security and poverty challenges with biodiversity." ("nutrition security" had previously been stated as "food security"; this has been changed in recognition of the fact that nutrition security encompasses both the availability of food resources and the issue of nutrient sufficiency and dietary health.) The workshop will discuss how biodiversity, including managed and unmanaged agricultural biodiversity, can enhance the production and security of food supplies, and look at the roles of the agriculture, fisheries management, human health, development and nature conservation sectors in achieving sustainable food production and nutrition security in the face of global change.

(i) Systemic approaches to health and development – building, communicating and reinforcing the conceptual framework on health and biodiversity linkages.

(How can potential conflicts between the separate goals of conserving biodiversity and producing high agricultural yields, be addressed? What examples can be highlighted of successful partnerships between the agriculture, health and nature conservation communities? Is the International Treaty for Plant Genetic Resources for Food and Agriculture, which is in harmony with the U.N. Convention on Biological Diversity, being implemented successfully, and how can the health and biodiversity sectors be engaged to better support its objectives? Is the health sector sufficiently aware of the value of diversity in diets? Is the agricultural community sufficiently aware of the role of biological diversity in providing the ecosystem services upon which food production depends? Is the biodiversity sector fully aware of the links between ecosystem integrity and food resource sustainability? How can the issue of food resources be related to / considered in protected areas management (e.g. for wetlands, woodlands, grasslands or marine habitats)? How can the role of natural food resources in diets be enhanced? What can be learned from the experience of indigenous communities? How can the dietary health of indigenous peoples be enhanced? Can donor countries do more to promote and support an ecosystem approach to food production and harvesting? What lessons can be drawn from past experience? What case studies of multi-disciplinary approaches can be highlighted? What research gaps must be addressed?)

(ii) The use of strategic assessments – ensuring that health-biodiversity relationships are appropriately considered and monitored in the design and development of plans, programmes and policies on health, social welfare and economic development.

Planting Rice near Mount Fuji, Japan

(How can the assessment framework for the Millennium Ecosystem Assessment be applied to agricultural and food production systems? How should agricultural biodiversity and traditional knowledge be factored into health or environmental impact assessments? Can Strategic Environmental Assessments of agricultural policies or strategies be utilised to support human health? What are the major health factors for consideration under cost-benefit studies of local agri-environment subsidy schemes? Are there common cross-cutting indicators that can be used? What are the roles and responsibilities of various sectors in maintaining plant and animal genetic resources for food and agriculture? Are there specific practical approaches that have succeeded in enhancing cross-sectoral collaboration?)

(iii) Climate change – accounting for the potential impacts of climate change on ecosystem services in the context of each workshop theme.

(What are the greatest threats to food production, and how can biodiversity be better enhanced to ensure future security? What threats to food resources, nutrition security and agricultural biodiversity must be addressed by policy makers, and how can biodiversity conservation help? Can specific solutions be devised from traditional knowledge and indigenous food resources? In the face of increased risks to community health and natural resources, how can agricultural biodiversity play a meaningful role in adapting to climate change? What practical strategies have been identified, or adopted, to date?)

Other possible general points for consideration during the workshop might include:

- The value of biodiversity to crop health (e.g. protecting against pests and diseases, and resistance to effects of extreme weather events).
- Social and economic aspects of biodiversity.
- Roles and responsibilities in maintaining agricultural / fisheries ecosystems.

Workshop 2: Food resources, Diet and Nutrition
Chaired by UN FAO and Bioversity International

Wednesday, 27th February - Parallel Workshops Day 2

Morning Session - "Climate Change"

08.50 - 09.10	Morning coffee
09.10 - 09.35	Review of previous day's discussions
09.35 - 10.05	*Climate change and food security* Barbara Huddleston (FAO)
10.05 - 10.30	*Natural food resources and climate change impacts: perspectives from Inuit communities* Eric Loring / Looee Okalik (Inuit Tapiriit Kanatami, Canada)
10.30 - 10.55	*Arguments for Protection: An insurance policy for a planet under stress* Liza Higgins-Zogib (WWF International, Switzerland)
10.55 - 11.15	**Refreshments**
11.15 - 12.30	Discussion
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - Preparation of Report

14.30 - 15.30	Working Groups
15.30 - 15.50	Feedback from Working Groups
15.50 - 16.10	**Refreshments**
16.10 - 17.30	Agreement of report content
17.30	**Close**

Workshop 3: Emerging Infectious Diseases

Guidance for participants

1. Background

Disease-causing microbes (pathogens) and parasitic invertebrates play an important role in ecosystem functioning and productivity, and are essential to maintaining the health of ecosystems and the natural equilibrium within and between populations of wild flora and fauna. Cycles of infection, disease, morbidity and mortality have played an essential part in natural selection and the evolution of life, and have also driven the evolution of human societies and cultures. However, the balance between populations of organisms, including the transmission cycles of infectious organisms, can be disrupted through human activities, and this can lead to disease outbreaks in man and nature. Historically, global environmental change and human impacts on ecosystem processes have played a significant role in the emergence, resurgence or spread of several infectious diseases of humans, plants and animals. The relationship between biodiversity loss and the emergence and spread of new and more virulent disease organisms is of great international significance.

There is clear scientific evidence that outbreaks of many diseases, including SARS, Ebola, Marburg, Nipah, hantaviruses, rabies, bluetongue, malaria, and the HIV pandemic, have resulted from human impacts on wildlife and ecosystems, including inter alia habitat disturbance, unsustainable exploitation of biodiversity, and the wildlife trade. Urban sprawl, encroachment into wilderness areas, and pollution of the atmosphere, oceans and inland waterways have also been linked with the spread of diseases. The current international spread of the H5N1 strain of avian influenza and other zoonoses (diseases spread from animals to man) may be facilitated by these activities, and it is possible that biodiversity loss and ecosystem disturbance could increase the risk of these diseases being transmitted to people, livestock or wildlife. Invasive alien species have also been implicated in disease outbreaks or transmission cycles. For example, in the U.S., recent outbreaks of avian botulism, causing the deaths of thousands of birds around the Great Lakes, have been linked with the introduction and spread of zebra mussels and round gobies. Recently, the first case of the extinction of a species - an amphibian - attributable to an emerging disease - a chytridiomycosis - was documented. There are many possible causes, but considering the rapid global spread of chytridiomycosis in amphibians, ecosystem change, possibly linked with climate change, may be involved.

Eastern Chimpanzee, Zaire

A failure to address the root causes of disease emergence and spread associated with ecosystem change or impacts on wildlife could have severe global consequences. Therefore, it is essential that the use of biodiversity indicators and the protection of ecosystems be integrated into international efforts to protect public health and prevent the emergence and spread of infectious diseases. This workshop aims to facilitate a greater awareness and understanding of the links between human health, ecosystem health and wildlife health, and to assist the development and implementation of an ecosystem approach to policies and programmes aimed at preventing the emergence of infectious diseases.

2. Workshop format and organisation

This workshop will be chaired by the U.N. World Health Organisation, representing a multi-lateral agency providing leadership in health issues and health education, and developing evidence-based policy options; and the Wildlife Conservation Society, a leading international nature conservation NGO with particular expertise in wildlife diseases and veterinary medicine.

Young Birds on a Goose Farm

Workshop 3: Emerging Infectious Diseases
Chaired by UN WHO and the Wildlife Conservation Society

Tuesday, 26th February - Parallel Workshops Day 1

Morning Session - "Building cross-sector understanding"

08.50 - 09.10	Morning coffee
09.10 - 09.35	Review of previous day's discussions
09.35 - 10.05	*Title to be confirmed* Dave Nabarro (UNDP, New York)
10.05 - 10.30	*Wildlife / Livestock Interface: Impact on Human Livelihoods in Latin America* Marcela Uhart (Wildlife Conservation Society, Argentina)
10.30 - 10.55	*Healthy environment, Healthy People: A case study of the Iwokrama HIV/AIDS project, Guyana* Melina Kalemandeen (Iwokrama Project, Guyana)
10.55 - 11.15	**Refreshments**
11.15 - 11.40	*The Power of Open Access: Disease Surveillance Data Sharing as a Global Good* Damien Joly (Global Avian Influenza Network For Surveillance, Canada)
11.40 - 12.05	*Snail-borne diseases and Biodiversity in Africa* Thomas Kristensen (Mandahl-Barth Research Centre for Biodiversity and Health, Denmark)
12.05 - 12.30	*Zoonotic diseases: biodiversity-related aspects and a Canadian approach to addressing these threats* Harvey Artsob (Canadian Public Health Agency)
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - "Strategic Assessments"

14.30 - 14.40	Overview and Discussion
14.40 - 15.05	*Great Ape Conservation through Public Health* Gladys Kalema (Conservation Through Public Health, Uganda)
15.05 - 15.30	*Pathogens, Parks and People. Understanding the role of zoonotic tuberculosis across the wildlife, livestock and human interface, and the possible implications for conservation in Africa* Claire Geoghegan (University of Pretoria, South Africa)
15.30 - 15.55	*Wildlife trade and emerging diseases in humans and animals* Nina Marano (US Centres for Disease Control and Prevention, USA)
15.55 - 16.15	**Refreshments**
16.15 - 16.40	*Wildlife Conservation, Promotion of Village Poultry Health, and HIV/AIDS Mitigation in Southern Africa* Robyn Alders (International Rural Poultry Centre, Mozambique)
16.40 - 17.05	*Social and environmental factors influencing the disease risk from bushmeat in Liberia* Richard Nisbett (Forest Partners International) / Alex Peal (Conservation International, Liberia)
17.05 - 17.30	*Occurrence and dynamics of rodent borne viruses in Europe* Heikki Henttonen (Finnish Forest Research Institute, Finland)
17.30	**Close**

Workshop 3: Emerging Infectious Diseases

Guidance for participants (continued)

3. Themes

The central theme of WORKSHOP 3 is "integrating biodiversity conservation and management into disease prevention and control programmes."

The workshop will discuss how biodiversity plays a role in the ecology of infectious diseases; discuss how biodiversity loss can increase risks of disease outbreaks in man, wildlife, livestock and plants; examine the roles of the conservation sector in protecting public health, and the role of the health sector in conserving biodiversity.

(i) Systemic approaches to health and development - building, communicating and reinforcing the conceptual framework on health and biodiversity linkages.

(How can the gaps between the separate goals of conserving biodiversity and preventing disease emergence be bridged? Is the health sector sufficiently aware of the value of ecosystems in preventing disease emergence? How can the gaps be bridged? Is the nature conservation community sufficiently aware of the human and wildlife health aspects of conservation? How should the health and conservation communities engage with the agricultural community, e.g. on issues of livestock and crop diseases? What disease issues may be relevant to protected area networks? How should protected areas be managed in order to prevent disease emergence? What are the respective roles of the health, agriculture and environment sectors? What is the role of the development aid community in preventing disease emergence? How can technologies such as GIS be utilised to support a cross-sector approach? How should initiatives such as the Group on Earth Observations (GEO) and the GEO System of Systems (GEOSS) address the emergence of diseases associated with ecosystem change? What examples of successful collaboration at government level can be highlighted? And at local level? What lessons should be drawn from our knowledge of disease emergence resulting from impacts on biodiversity? What case studies of multi-disciplinary approaches can be presented? Can the field of conservation medicine be mainstreamed into medical education? What research gaps must be addressed? In the context of the Millennium Development Goals, and considering the outputs of the Millennium Ecosystem Assessment, can donor countries do more to promote and support an ecosystem approach to disease prevention?)

(ii) The use of strategic assessments - ensuring that health-biodiversity relationships are appropriately considered and monitored in the design and development of plans, programmes and policies on health, social welfare and economic development.

Vaccination Drive in Africa

(How can health and disease risk be factored into conservation strategies? What common cross-cutting indicators can be used? How can wildlife disease risks be factored into planning of economic or agriculture policy? What are the roles and responsibilities of various sectors in preventing disease outbreaks? Should nature conservation play a significant part? Is the concept of Root Causes analysis for biodiversity loss, also applicable to the issue of disease emergence?)

(iii) Climate change - accounting for the potential impacts of climate change on ecosystem services in the context of each workshop theme.

(What specific risks might climate change pose in the context of the emergence of infectious diseases of humans, animals and plants? To what extent does planning for the health risks posed by climate change require an ecosystem approach? What specific threats to biodiversity must be addressed by policy makers? Are there key ecosystems, e.g. wetlands, that need to be protected, in order to minimise disease risks which climate change might pose to plants, animals, and man? In the face of increased risks to community health and natural resources, how can biodiversity conservation play a meaningful role in adapting to climate change? In an adaptation scenario where tough choices must be made between conservation and acceptable loss of biodiversity due to climate change, how do we prioritise, taking into account the risks of the emergence, resurgence or spread of infectious disease? Can specific solutions be devised from traditional knowledge?)

Other possible points for consideration during the workshop include:

- Disease risks and urbanisation
- Links between protected areas and health
- Roles and responsibilities in maintaining ecosystems for human well-being

Workshop 3: Emerging Infectious Diseases
Chaired by UN WHO and the Wildlife Conservation Society

Wednesday, 27th February - Parallel Workshops Day 2

Morning Session - "Climate Change"

08.50 - 09.00	Morning coffee
09.00 - 09.10	Overview of workshop themes and format
09.10 - 09.35	*Title to be confirmed* Diarmid Campbell-Lendrum (World health Organisation, Geneva, Switzerland)
09.35 - 10.05	*Climate change and ecosystem disruption* Steve Zack (WCS, Pacific West Programme, USA)
10.05 - 10.30	*Climate change and vector borne diseases* Pablo Beldomenico (WCS, Argentina)
10.30 - 10.55	*Climate change and biodiversity in the Arctic, Wrangel Island as an example* Vasiliy Baranyuk (Ministry of Science, Russia)
10.55 - 11.15	**Refreshments**
11.15 - 11.40	*Attribution in climate change impact studies: how to document cause from correlational data* Camille Parmesan (University of Texas, USA)
11.40 - 12.30	Discussion
12.30 - 14.30	**Lunch and Side Events**

Afternoon Session - Preparation of Report

14.30 - 15.30	Working Groups
15.30 - 15.50	Feedback from Working Groups
15.50 - 16.10	**Refreshments**
16.10 - 17.30	Agreement of report content
17.30	**Close**

Closing Plenary Session

Thursday, 28th February

Morning Session - Workshop Reviews

09.10 - 09.35	Overview of Workshop 1
09.35 - 10.00	Overview of Workshop 2
10.00 - 10.25	Overview of Workshop 3
10.20 - 10.50	Q & A
10.50 - 11.20	*"Healing Across Cultures"* Todd Pesek, MD (University of Cleveland, USA) and Victor Cal (Belize Indigenous Training Institute, Belize)
11.20 - 11.40	**Refreshments**
11.40 - 12.10	*The Jagdeo Climate Change Initiative:* *A Call for Participation in Guyana's Bold Proposal for Climate Change Mitigation* John Caesar (National Parks Commission of Guyana, & University of Guyana)
12.10 - 12.35	*Examining the Links Between Biodiversity and Human Disease:* *The U.S. EPA's Interdisciplinary Research Initiative* Montira Pongsiri (US EPA, Washington DC, USA)
12.35 - 13.00	*Ecosystem Sustainability and Health* Alonso Aguirre (International EcoHealth Association, New York, USA)
13.00 - 13.25	*Linking Conservation and Development, with an Emphasis on Fresh Water:* *Implications for Human Health and Biodiversity* Larry Gorenflo (Conservation International and Penn State University, USA)
13.25 - 14.40	**Lunch**

Afternoon Session - Bridging the Gaps

14.40 - 15.30	Special Panel Discussion *"Living Within Our Means?"* Ecosystems, Economies and Community in 21st Century Europe Directorates General of the European Commission: DG SANCO, DG AIDCO, DG Enterprise and Industry, DG Environment, DG Fisheries and Maritime, IUCN
15.30 - 16.20	Special Panel Discussion *"Health is not valued till sickness comes"* Reducing Risks in an era of Global Change UNHCR, IUCN, IAIA, ProAct Network
16.20 - 16.40	**Refreshments**
16.40 - 17.20	Discussion on Conference Report and adoption of Galway Declaration
17.20 - 17.30	Closing Statements
17.30	**Conference Closes**

Additional Events

In addition to the main conference, a number satellite workshop events are also proposed, to run on Friday 29th February 2008, the day after the main COHAB 2008 event closes.

Indigenous peoples nutrition and natural food resources - Examples of projects and research supporting the food security and health of indigenous communities.

The COHAB Initiative Secretariat, in association with the United Nations Food and Agriculture Organisation, the United Nations Development Programme, the Centre for Indigenous People's Nutrition and Environment, and the Government of Canada, will convene a special discussion forum on the theme "Indigenous Peoples' Nutrition and Natural Food Resources", in Galway, Ireland, on Friday 29th February 2008.

The aims of this workshop are:

- To discuss the importance of biodiversity to the nutrition security and dietary health of Indigenous People worldwide.
- To share experience from community-based research and activities on traditional food systems.
- To discuss the threats which climate change poses to natural food resources, community health and traditions.
- To promote cross-cultural and cross-sectoral collaboration on the conservation of traditional food systems and natural food resources.

The workshop will take place on Friday 29th February 2008, the day after the main COHAB 2 conference ends. Participation is open to all COHAB 2 participants, indigenous community representatives, decision makers from the agriculture, health, and biodiversity / environment sectors, and to scientists, environmental professionals, and other stakeholders.

Two other satellite events will also be held on Friday 29th: A limited number of places are available in these workshops for delegates to the COHAB 2 conference:

Best Practice in Impact Assessment - Systemic approaches to biodiversity in Strategic Environmental Assessment and Health Impact Assessment. (In association with the International Association for Impact Assessment and the CBD Secretariat)

Business and Ecosystems - innovation, opportunities and challenges for the private sector. (In association with the CBD Secretariat, the World Resources Institute, the Céifin Centre, and with the support of the World Business Council for Sustainable Development).

About the COHAB Initiative

The COHAB Initiative is an international programme established to respond to the gaps in awareness and existing policies on issues linking biodiversity with human health and well-being. The Initiative aims to establish an international, inter-disciplinary collaborative framework to support existing activities on international development, biodiversity conservation and population health, and to support the United Nations Millennium Development Goals (MDGs).

Teotihuacan Stone Carving

The COHAB Initiative has been created in response to the outputs of the First International Conference on Health and Biodiversity (COHAB 2005), which was held in Galway, Ireland, during 2005; and the reports of the Millennium Ecosystem Assessment. The COHAB Initiative operates through Partnership arrangements with a growing network of organisations worldwide, representing government and multi-lateral agencies, academic institutes, NGOs, indigenous communities and the private sector. The Secretariat of the COHAB Initiative is based in Galway, Ireland. Major areas of focus include:

- poverty reduction and livelihood security
- food security, nutrition and dietary health
- emerging infectious diseases
- natural products and medicinal resources
- disaster prevention, relief and recovery
- indigenous community traditions and health
- climate change impacts and adaptation

Background

The Millennium Ecosystem Assessment (MA), a global project commissioned by the United Nations in 2000, has assessed the consequences of ecosystem change for human well-being, and identified the scientific basis for action needed to enhance the conservation and sustainable use of those ecosystems. The reports of the MA have highlighted some of the growing evidence that the expanding human population and its economic, social and political activities have increased the rate of biodiversity loss above what may be considered the natural background rate, and beyond the capacity of the Earth to renew these resources. As a result, the health and welfare of people throughout the world is under increasing threat from new and unexpected hazards related to the loss of animal and plant species and the disruption of ecosystems. The ability of the planet's ecosystems to sustain future generations can no longer be taken for granted. In as much as the loss of biodiversity puts the well being of many human populations at risk, its conservation and sustainable use can help to combat poverty and hunger, prevent disease outbreaks, and promote stability and security for millions of people worldwide.

While many benefits of biodiversity can be assigned a specific worth or economic value, for many sectors of society the value of biodiversity and ecosystems exists not so much in a monetary value gained, but on losses prevented or moderated by the existence of a healthy natural environment. While it is possible to directly quantify the economic worth of some ecosystem services such as food and timber production, the value in terms of life-supporting services which protect individual or population health and well-being is difficult to define in strict social or monetary terms.

Although the importance of biodiversity to human health and welfare may be widely recognised within the environment sector, there is still a significant gap in understanding and collaboration between environment on the one hand, and development, health and economic sectors on the other. For example, although the World Health Organisation has been associated with numerous high-level projects on biodiversity loss and its relevance to health, and has been closely involved with the Millennium Ecosystem Assessment, this has not translated widely to the practices of health departments at local and national government level around the world. In many countries, there is still a lack of knowledge and understanding within the health sector of the importance of biodiversity conservation to healthy human populations, and a lack of awareness of impacts which biodiversity loss can have on human health.

Biodiversity conservation is also a key development issue, though it is often not recognised as such by organisations involved in development aid or emergency relief. Many organisations at the forefront of development issues do not understand the meaning of biodiversity, or do not see the direct relevance of biodiversity to their fields of work. Even where the relevance and connections are understood, there is difficulty in translating this knowledge into action. In the context of emergency aid, disaster relief and rebuilding programmes, there is risk that problems which have been created or exacerbated by habitat disturbance may persist or recur if those programmes fail to recognise the importance of biodiversity to health and livelihood security. What is clearly needed is a means of connecting biodiversity issues with the activities of aid organisations at the grass-roots level, tying in directly with their existing areas of activity.

Yak, Himalayas, Tibet

Furthermore, while there is a need for greater understanding of biodiversity within non-environment sectors, those involved in biodiversity conservation must also know how to integrate health and development considerations into their respective programmes and activities. Humans, our cultures and our communities are part of global biodiversity; we are connected to and depend upon the ecosystems with which we interact and of which we are a part. The biodiversity community must develop an understanding of how their plans can have the potential to affect human well-being and adopt holistic approaches to ensure the long term success of conservation strategies, for the benefit of future generations as well as for wildlife and ecosystems.

Biodiversity and the Millennium Development Goals

International commitments towards the Millennium Development Goals (MDGs) will be severely hampered unless a concerted and effective effort is made towards reaching the strategic goal of the Convention on Biological Diversity (CBD) to achieve, by the year 2010, a significant reduction in the rate of biodiversity loss worldwide. Conversely, a failure to address the MDGs, or to put appropriate measures in place towards their implementation, will seriously affect the ability of nations to address the CBD 2010 target. Beyond 2010, a failure to adequately address issues of global health, poverty, debt relief, trade and security will continue to create conflicts between people and the natural environment. Such conflicts will likely result in further impacts on biodiversity that may, ultimately, create further challenges for human health and welfare, and livelihood sustainability. There is a need to ensure that national programmes for the implementation of the MDGs recognise that the conservation of biodiversity must play a central role in national action plans towards the MDGs - tackling issues of poverty, disease, education, sustainability, equality and international co-operation.

Pink-tipped Sea Anemone

Bridging the Gaps

The Partners to the COHAB Initiative have identified a need for an international collaborative programme to facilitate partnership across disciplines and to address the conceptual barriers that inhibit cross-sectoral partnerships on biodiversity, health and development issues at government level. There is also a continuing need to promote these connections to a wider group of individuals and organisations, including those in the private sector. Engaging with the general public on biodiversity issues represents another major challenge. This is perhaps particularly true in developed countries where many people (e.g. in urban areas) do not recognise or appreciate any tangible connection with, or direct dependence upon ecosystem services. In general, arguments for the cultural, religious, aesthetic, ethical and economic values of biodiversity have not convinced the wider public of the importance of nature conservation.

The COHAB Initiative aims to help movements towards a common platform open to all stakeholders to debate and examine the importance of the natural world to human life:

- Highlighting the importance of biodiversity and ecosystems services to human health and international development;
- Illustrating how biodiversity is an essential component in achieving each of the eight United Nations Millennium Development Goals;
- Highlighting the risks that human impacts on ecosystems present to human health and welfare worldwide;
- Promoting collaborative approaches to conservation for sustainable human development;
- Facilitating and building capacity for inter-disciplinary, cross-sector and international partnerships;
- Creating greater awareness among policy makers, scientists, health professionals, natural resource managers, local authorities and the general public.

Ulu Knife

Gentoo Penguins, Antarctica

COHAB 2 Conference Partners and Chairs

With Thanks

With thanks to Diarmid Campbell-Lendrum, Carlos Corvalan and colleagues at the World Health Organisation (WHO).

COHAB 2008 Sponsors

Notes

Notes

cohabinitiative cohab2008