

Expert meeting 1. Coexistence: Reduction of the Threats posed to Biodiversity

Lead Expert: Sugoto Roy (Integrated Tiger Habitat Conservation Programme Coordinator, IUCN)

Moderator: Hang Lee (Professor, Seoul National University)

Facilitator: Gitanjali Bedi

Speakers:

- Tomoko Ichikawa (Communication Officer, East Asian-Australasian Flyway Partnership - EAAFP)
- Patricia Zurita (Chief Executive, BirdLife International)
- Suzanne Case (Chair, State of Hawaii, Dept. of Land and Natural Resources)
- Daniel Simberloff (Gore Hunger Professor of Environmental Science, University of Tennessee)
- Jean-Paul Paddock (Co-Chairman and CEO, WWF-Korea)

Panellists:

- Donguk Han (Executive Director, National Institute of Ecology)
- Anshuman Saikia (Regional Programme Support Coordinator, IUCN Regional Office for Asia)
- Byoung-Yoon Lee (Director, National Institute of Biological Resources)
- Zhu Chunquan (Country Representative, IUCN China office)

This expert meeting was organized around three topics recognized as most relevant:

- 1. Species Restoration**
- 2. Invasive Species**
- 3. Climate Change**

Main threats to global biodiversity

Speaker: Tomoko Ichikawa (Communication Officer, East Asian Australian Flyway Partnership - EAAFP)

Ms Ichikawa explained that EAAFP brings together Government agencies, NGOs and other associations to conserve migratory water birds and their habitats along the East Asian Australian Flyway. She identified the main threats to global biodiversity as:

- Habitat loss or degradation (urbanisation, land use change, deforestation, etc.)
- Unsustainable exploitation (Over-exploitation)
- Climate change (CC) which for example affects species distribution and breeding seasons
- Invasive Alien Species (IAS) which predate on or compete with native species
- Pollution and poisoning, for example agricultural chemicals

She pointed out that when addressing these threats, one needs to keep in mind that threats interact. For example, climate change impacts such as sea level rise or increased storms can favour the spread of IAS. Also, the underlying causes of the threats need to be identified to help better target the actions. It has to be understood that changes in one ecosystem affect other ecosystems.

Actions:

She pointed out that actions addressing the threats need to be multidimensional: many threats need to be addressed at the same time and species restoration has to be done concurrently with habitat conservation or restoration. There is also a recognized need for capacity building, communication, education and public awareness, as well as monitoring and information sharing. She emphasized that political and institutional will need to back conservation efforts, and both stronger and rapid

commitments need to be secured to halt biodiversity loss both in the East Asia region, and at the global level.

Example: spoonbill sandpiper

Population: 400

Threats: Flooding of breeding habitat caused by climate change;
during migration: hunting, oil exploitation; on wintering grounds:
subsistence hunting, sea level rise and coastal reclamation

Solutions:

- Stronger implementation of laws and policies
- International cooperation to raise the issue as a high priority and capacity building in the East Asian Australian flyway
- Awareness raising at various levels

Situation in Korea

Speaker: Hang Lee (Professor, Seoul National University)

Professor Lee reminded the participants of the significance of the gathering, as a follow-up of the IUCN World Conservation Congress hosted in Jeju in 2012, during which there was a strong consensus on the importance to organize the World Leaders Conservation Forum to gather experts' advice and creative ideas as input for dialogues amongst leaders, and to maintain the impetus of previous meetings

Prof. Lee pointed out that the global threats to biodiversity previously mentioned were also true for Korea, and described extra threats more specific to the country, in particular the political division with the 250 km long military demarcation line and the DMZ (Demilitarized Zone). This political fragmentation is resulting in the fragmentation, isolation and severance of key habitats. As a result, South Korea is effectively like an island for terrestrial animals although the Korean Peninsula is connected to the Eurasian Continent. Most wildlife species can't cross the boundary of the DMZ and the ecological integrity of populations is severed.

The effect of the division is that there is no integrated management to address the threats to biodiversity. In North Korea, there is biodiversity loss due to deforestation through over exploitation, while in the South it is mostly due to habitat loss through urbanisation. The main eco-corridor for wildlife movement is interrupted. Regional biodiversity could greatly benefit from transboundary management.

Poll:

The audience was asked what, in their opinion, were the three main threats to biodiversity out of the following eight: Habitat loss & urbanisation; Over-exploitation; Invasive species; Climate change; Pollution; Lack of awareness at different levels; Predicting future problems (GMO); Political fragmentation.

- Habitat loss & urbanization, Climate change and Over-exploitation were picked as the three main threats to biodiversity
- Habitat loss & urbanization, Political fragmentation and Over-exploitation were identified as the three main threats in Korea.

Species restoration

Speaker: Patricia Zurita (Chief Executive, BirdLife International)

Ms Zurita explained that Birdlife is a network of 120 organizations around the world. She illustrated biodiversity loss with some basic statics as examples: terrestrial - half of the forests gone, sea - 76% of fisheries in Europe exploited or overfished and air - 40% of migratory birds are declining. Critically endangered species are impacted by a range of threats, including unsustainable agriculture, IAS, logging, etc.

But the good news is that we know many of the conservation actions that are needed such as site protection and management, IAS control, habitat restoration, awareness raising and reintroduction. What is required is sound science, adequate resources and political will to implement them. With these, we can bring back species from the brink of extinction.

Some examples of species brought back from extinction:

Mauritius parakeet: less than a dozen birds with only three females were left. Thanks notably to captive breeding, habitat restoration through control of IAS and provision of artificial nesting cavities; the population was brought back from a dozen to over 300 in 2007.

An endemic finch, the Azores bullfinch, was also brought back from extinction thanks to restoration, better protection and management of its habitat. In Asia, the Asian Crested Ibis is being brought back, thanks to the cooperation between China and Japan, leading to proper policy and legislation. In New Zealand, the extermination of rats and captive breeding is saving the Campbel Islands' teal.

On the European continent, 37 species are currently recovering.

Ms Zurita mentioned, as solutions to species restoration, technologies like captive breeding. She underlined the importance of an ecosystem based approach, with habitat restoration, and through the control of IAS, as well as management measures like restriction of access to sensitive areas and the creation of protected areas networks, but also reminded that many species require individual attention as well. Also needed are transboundary cooperation across borders and proper policy and legislation.

Poll:

The audience was asked what, in their opinion, were the three top challenges to species restoration out of the following six: Human wildlife conflicts; Lack of awareness; Unplanned restoration; Cost; Choice of species (predators?); Species knowledge.

- Human wildlife conflicts, Cost and Lack of awareness were picked as the three main challenges

The audience was asked what, in their opinion, were the three most urgent actions for species restoration out of the following five: Technology – zoos, and wild population management; Integrated with habitat management; Multi-disciplinary; Information/science sharing; Share costs – transboundary.

- Integrated with habitat management, Multi-disciplinary and Share cost-transboundary were picked as main modes of action

Invasive Species management to protect biodiversity

Speaker: Professor Daniel Simberloff (Gore Hunger Professor of Environmental Science, University of Tennessee)

Professor Simberloff noted that invasive species (IAS) have now been widely recognized as a major problem, proven to have caused the extinction of many species. He gave several examples illustrating that one invasive species can cause the extinction of many native species, sometimes hundreds of them.

Examples of the number of native species brought to extinction by one invasive species:

- 11 species and subspecies of birds due to one tree snake species on Guam
- Nile perch in Lake Victoria caused extinction of 200 native fish species
- Rosy wolf snail caused extinction of 50 native snail species on islands in the Pacific
- An alga in the Mediterranean (*Caulerpa taxifolia*) causing so many extinctions, it is dubbed the 'killer alga'

IAS have been identified as a problem only relatively recently, in the 1980s. Thanks to scientific studies, the understanding of the problem and how to address it is improving.

A major concern is that a single invasive species can transform whole ecosystems, affecting dozens of other species. For example, introduced rats greatly impact seabirds and other ground nesting birds, but further effects on species under and above ground have been identified. IAS can be species that were introduced willingly like new crops, ornamental plants or pest control species, but many are introduced unwillingly – in cargo, untreated wood, etc.

The approach to address IAS threats is to: 1. keep them out – prevent introduction, planned or unplanned; 2. If they get in, detect them quickly and try to eradicate them; 3. If they establish, and cannot be eradicated, manage at densities below acceptable thresholds.

It is also really important to work on predicting which species could become IAS (example: United States USDA Weed Risk Assessment), to develop early warning systems and rapid response mechanisms. New Zealand has an early warning system and has prevented the introduction of invasive species more effectively than most other countries. An early warning system allows for rapid response. But when an invasive species is established, its management requires an array of control methods: for example, for *Melaleuca* in Florida, mechanical, manual, chemical, biological, prescribed fire have been used and now genetic manipulation is being considered.

It is important to keep cost in mind when devising control methods so efforts can be pursued over time and to minimize impacts on non-target organisms.

Poll:

The audience was asked what, in their opinion, were the three top challenges to invasive species control out of the following four: Public awareness; Early intervention/warning; Risk assessments and Cost/research.

- Public awareness, Early intervention/warning and Risk assessments were picked as main challenges

The audience was asked what, in their opinion, were the top three most urgent actions for invasive species control out of the following seven: Learning how to adapt to living with problem long term; Prioritisation; Education; Regulation; Sharing cross border information, tools and techniques; Addressing political fragmentation; Prevention.

- Prevention, Education and Prioritization were picked as the three main actions to take

Climate Change – global perspective, challenges and management

Speaker: Jean-Paul Paddack (Co-Chairman and CEO, WWF-Korea)

Climate change (CC) is happening: extreme weather incidents are happening globally. The science is accepted stated Mr Paddack before mentioning examples of climate change impacts like warming, sea level rise and reminding the participants that climate change also has human health impacts. The largest source of carbon dioxide is the combustion of fossil fuels in the energy sector. Internationally and nationally, efforts are being made to slow down climate change by limiting the driving factors such as the emission of greenhouse gases.

He further stated that climate change impacts on biodiversity and ecosystems are not easy to predict or detect, and that they often combine with other factors like the spread of invasive species. We know that countries and individuals can take responsibilities to reduce Green House Gases and the use of fossil fuels. We can change how we are living and producing.

The actions to take as solutions are:

1. Encourage resilience: protection of large ecosystems, for ex. for forests: prioritize connectivity and scale
2. One planet lifestyle: transition from fossil fuel to renewables, personal life changes, maintain forest cover, certification of forestry products, etc...
3. A low carbon climate resilient technological world with: use of renewables, green finance, low carbon framework, business engagement
4. Mobilizing civil society to embrace renewable energy
5. Right legal frameworks (COP in Paris)

Adapting to Climate Change: perspectives from tropical regions

Speaker: Suzanne Case (Chair, State of Hawaii, Dept. of Land and Natural Resources)

Ms Case reminded the participants that Hawaii is hosting the next IUCN World Conservation Congress, in September 2016. She featured some of Hawaii's ecosystems: rainforest, coasts, and volcanic mountains. Tropical islands have diverse and unique ecosystems which harbour an important biodiversity (many endemics). Ecosystems provide important services: coral reefs - food, rainforest- water, as well as spectacular vistas. Tropical islands are often at the forefront of climate change impacts (for ex. impacts to coral reefs from ocean warming and acidification) and Hawaii is facing that challenge. A recent study predicts a drier climate with impacts to the rain forest and on species, for ex. by favouring the spread of an invasive mosquito carrying a disease that could affect Hawaii's unique forest bird species.

Solutions:

The healthier the ecosystem is in the first place, the more resilient it will stay, so preserve ecosystems.

Most important: every one of us need to do all we can to reduce carbon emission. Hawaii is the first state in the US to commit to become 100 % renewables by 2025, although it is now one of the US states most dependent on fossil fuels.

Poll:

The audience was asked to answer the following yes/no questions on the challenges posed by climate change: Can it be mitigated? Can we adapt?; Can we predict what will happen?

- A majority of participants responded 'yes' to the three questions

The audience was asked what are the three most urgent actions to address climate change out of the four following ones: Proper planning; Prioritisation; Monitoring; Building resilience – managing other threats.

- Building resilience – managing other threats, Proper planning and Monitoring were picked as the three main actions to take

Roundtables:

Participants joined roundtable discussions facilitated by the panellists, moderators and speakers. They addressed the question: How do the challenges of species restoration, invasive species control and climate change inter-relate and what does it mean in terms of actions?

Roundtable results:

Key messages:

1. CEPA (communication, education, **public awareness**) programme needed to raise awareness of the public, the stakeholders and the decision-makers. Policy makers need to understand the need to prioritize natural resources, the public need to be made more aware of the threats posed by invasive species, barriers need to be addressed like no killing of animals in Buddhism. All need to engage in climate change issues.
2. Biodiversity conservation needs to be an **integrated, multi-disciplinary approach**: species restoration including preserving or restoring the health of the ecosystems, control of invasive alien species (IAS) and mitigation/adaptation to climate change. Favour science-based technological intervention. Land and resources have to be used sustainably.
3. Governance: Recognize lack of and **develop policies, legal frameworks and transboundary cooperation** to specifically address biodiversity loss, recognizing linkage between the three areas (species restoration, IAS and climate change), and the fact that economic downturns increase pressure on biodiversity. Pay attention to ecological integrity and work across boundaries/borders. Dedicate adequate financial support to conservation efforts like IAS control, and investment to develop green technologies.

Final points raised by panellists:

- One suggested solution: One Health Concept. Use that concept to understand the ecosystem in which the wildlife lives as a whole; bring various areas of expertise to work together.
- The CEPA concept is very important. People don't know. If we raise awareness, then people can be engaged, and we can implement management measures at a broader scale.
- There is an opportunity in a couple of month for countries to engage in climate change. There is still time to get more ambitious commitments in renewables. We need 100%

renewables engagement adopted by all. Working towards resilience is very important. IAS as a threat is the forgotten brother: funding for this critical threat is very important.

- Tropical islands are microcosms of our planet and are example of the bigger issues. And they can be models for solutions. For our planet, we need to do all we can now to preserve it for the future.
- Not much focus during the talks on public education, but very much brought up during the roundtables; it is very important. Crucial to raise policy-makers awareness so it leads to the needed actions. For IAS, only New Zealand has an early action mechanism, powered by the public. The public provides a service that no county could afford to have conducted by scientists only.
- Importance of maintaining healthy ecosystems has to be recognized. Restoration of ecosystems is important, funding is important, and legislative framework is really important. If working systems exist, we need to replicate them everywhere. For the efforts to succeed, it is important to involve local people in implementing them and to dedicate appropriate funding.
- All threats talked about are intimately linked and solutions are interrelated. Funding to support integrated approaches needs to be raised. Global problems need global, complex and integrated solutions, multidisciplinary – all need to be working together.

Three main points:

- **Raise awareness of the public, the stakeholders and the decision-makers.**
- **Biodiversity conservation needs to be an integrated, multi-disciplinary approach.**
- **Develop policies, legal frameworks and transboundary cooperation to specifically address biodiversity loss.**