

Climate Change and Resilient Ecosystems

International parliamentary hearing on managing ecosystems and ensuring ecosystem services to help prevent and adapt to climate change

**at the Mabula Game Lodge, South Africa
12-13 April, 2008**

Funded by SwedBio. Co-sponsored by the World Future Council.

Legislators in this 11th e-Parliament hearing heard from experts that there were a number of ways they could act now to protect the world's ecosystems.

In particular, the 17 legislators were impressed by a presentation by Costa Rican legislator Grettel Ortiz which showed how her country had stopped deforestation and had furthermore reforested large areas since the 1980s.



Dr. Robert Scholes said that 20-30 percent of all species are threatened with extinction in the next century. Bushbuck such as this one pictured near the hotel, are not currently at risk.

Ortiz explained that much had been achieved as a result of legislation: parliament had passed an Environment Law, a Biodiversity Law, and a Forest Law which had established proper incentives for rainforest protection such as tax credits, direct payments, and subsidized loans.

Legislators also heard presentations about South Africa's Green Scorpions – the environmental police who have increased awareness and punishment for environmental crimes; about the need to review the

permit system for exploitative development in Indonesia; and about a scheme to sustainably manage dryland areas in Namibia.

This dryland presentation by consultant Juliane Zeidler focussed on a sustainable management scheme that encompasses over 100,000 square kilometres in and 200,000 people. She said that it has resulted in real benefits in terms of increased income for the people as well as increased populations in a wide range of animal species.

The legislators also heard from Jackie Alder from the Fisheries Centre at the University of British Columbia who explained that Kiribati had been promoting a new sustainable way of marine management.

The measures focus not just on the sea but on the surrounding land – making improvements to agriculture that help to reduce the population's reliance on fishing. Alder said that it has been extremely successful and, though small-scale, could be replicated elsewhere.

Earlier the legislators had heard from Dr. Robert Scholes of South Africa's Council for Scientific and Industrial Research about the crisis that was facing the earth: a crisis which he said could result in the loss of 20-30% species on earth over next century.

He said that he would expect mankind to survive into the next century but that 'civilisation' would be very likely to collapse.

He said that our civilisation can only function in a fairly narrow temperature band and that, if the world becomes too warm, then modern civilisation – freedom, democracy and comfort – would all be at risk.

This report includes the following sections:

1. Participants
2. Action Ideas Discussed
3. Follow-up Actions
4. About the e-Parliament, SwedBio and the World Future Council



The legislators who gathered in Mabula: Abdel Karim Shah (Tanzania), Ruth Kavuma (Uganda), Hilaria Supa (Peru), Cornelis Van Rooyen (hidden – South Africa), Ruth Rabinowitz (South Africa), Grettel Ortiz (Costa Rica), Anchen Dreyer (South Africa), Patricia Romero (Costa Rica), Dr. Kwame Ampofo (Ghana), George Nangale (Tanzania), Luciano Fabris (Argentina), Stephen Mukitale (Uganda), Dr. Rafael Mwalyosi (Tanzania), Michael Boampong (Ghana), Emilio Flores (Mexico), Dora Byamukama (Uganda). Not pictured: Makhuni Ntuli (South Africa).

1. Participants

Members of Parliament:

Dr. Kwame Ampofo MP, Ghana, *Member, Select Committee on Mines and Energy*

Michael Coffie Boampong MP, Ghana, *Member, Select Committee on Environment, Science and Technology, and Member, Select Committee on Mines and Energy*

Dora Byamukama, *Member East African Legislative Assembly for Uganda*

Anchen Dreyer MP, South Africa, *Member, Committee on Labour*

Luciano Fabris MP, Argentina, *Member, Natural Resources and Environmental Conservation Committee*

Emilio Flores MP, Mexico, *Member, Environment and Natural Resources Committee*

Ruth Kavuma MP, Uganda, *Member, Committee on Natural Resources*

Stephen Mukitale MP, Uganda, *Member, Committee on Natural Resources*

Prof. Raphael Mwalyosi MP, Tanzania, *Member, Land, Natural Resources and Environment Committee*

George Nangale, *Member East African Legislative Assembly for Tanzania,*

Makhoni Ntuli MP, South Africa, *Member, Portfolio Committee on Environmental Affairs and Tourism*

Elsa Ortiz MP, Costa Rica, *Member, Permanent Special Committee on The Environment*

Dr. Ruth Rabinowitz, South Africa, *Party spokesperson on Health issues*

Patricia Romero MP, Costa Rica, *Member, Special Committee on Science and Technology*

Abdulkarim Shah MP, Tanzania, *Member, Agriculture, Livestock and Water Committee*

Hilaria Supa MP, Perú, *Member, Energy and Mines Committee, and, Member, Andean, Amazonian and Afro-Peruvian Peoples, Environment and Ecology Committee*

Cornelis Van Rooyen MP, South Africa, *Member, Select Committee on Land and Environmental Affairs, and Provincial Whip*

Expert Presenters:

Dr. Jackie Alder, Senior Research Fellow, Fisheries Centre, *University of British Columbia*

Fitrian Ardiansyah, Programme Director of Climate and Energy, *WWF Indonesia*

Norbert Henninger, Senior Associate, People and Ecosystems Programme, *World Resources Institute*

Dr. Robert Scholes, Fellow, Natural Resources and the Environment, *Council for Scientific and Industrial Research (South Africa)*

Stefan Schurig, Director, Climate and Energy, *World Future Council*

Rina Taviv, Environmental Modelling and Climate Change, *Council for Scientific and Industrial Research (South Africa)*

Juliane Zeidler, Managing Director, Senior Consultant, *Integrated Environmental Consultants of Namibia*

e-Parliament secretariat:

Jasper Bouverie, Communications Director

James Corre, Programme Officer

Nicholas Dunlop, Secretary-General

Hilary Francis, Programme Officer

Observers

Christine Wallace, Wallace Foundation

Scott Wallace, Wallace Foundation



From left: James Corre (e-Parliament), Grettel Ortiz (Costa Rica), Dr.Robert Scholes (South Africa - CISR), Abdel Karim Shah (Tanzania), Hilaria Supa (Peru), Ruth Kavuma (Uganda), Dr.Rina Taviv (South Africa - CISR), Hilary Francis (seated – e-Parliament), Luciano Fabris (Argentina), Cornelis Van Rooyen (South Africa), George Nangale (partly hidden - Tanzania), Anchen Dreyer (South Africa), Stefan Schurig (World Future Council), Dr.Kwame Ampofo (partly hidden – Ghana), Patricia Romero (Costa Rica), Norbert Henninger (World Resources Institute), Dr.Jackie Alder (Univ of British Colombia), Stephen Mukitale (Uganda), Dr.Rafael Mwalyosi (Tanzania), Michael Boampong (Ghana), Fitriani Ardiansyah (Indonesia – WWF), Juliane Zeidler (IECN – Namibia), Emilio Flores (Mexico), Nick Dunlop (e-Parliament), Dora Byamukama (Uganda), Laura Van Dam (translator).

2. Action Ideas Discussed

Dr.Robert Scholes: Ecosystems under threat, and why it matters

Dr Robert Scholes, of the Council for Scientific and Industrial Research in South Africa, began by giving a short presentation on the Millennium Ecosystem Assessment (MEA). He explained that the assessment was a comprehensive weighing up of the existing evidence, which drew on thousands of published findings. The project sought to assess the capacity of the planet to support the well-being of people both now and in the future.

The MEA, which was published in 2005, made use of a new conceptual framework – the idea of ecosystem services. The study measured the benefits that people derive from nature and assessed their relative availability. Dr Scholes explained the importance of this framework, in that it shifts debate from moral discussion around responsibilities and intrinsic value, into discussions on a utilitarian basis, where the main reason we worry about the state of nature is selfish - because we are dependent upon it and if we aren't careful the decline of natural resources will affect us.

The report considered four kinds of ecosystem services:

- **provisioning services**, such as food, wood, water, biofuels and medicinal plants;
- **cultural services**, including a sense of place, and the aesthetics of ecosystems;
- **regulating services**, or the way ecosystems fit together to keep things running smoothly, such as natural disease or pest control, or the role of ecosystems in controlling global climate;
- **supporting services**, which are those primary services which are necessary for the delivery of others. An example of this would be nutrient cycling.



Dr.Scholes advocated full-cost accounting as an important step in ascribing proper value to ecosystem services: it should be recognised that social capital and natural capital have as much value as manufactured capital

The study was groundbreaking in that a number of sub-global assessments were undertaken. Other huge studies such as the IPCC have been done globally, and have produced enormous amounts of information, but, since we need to act locally, there is a real demand for information at the local level. In ecosystem services this is especially crucial – so that people at a local level can fully understand the implications of future development.

Globally, people in general have never been better off than now. We are far better off in terms of food production per capita than we were 30 years ago. Forests are in decline, but timber

production has never been higher. The reason we are doing so well though, in spite of the damage that has been done to ecosystems, is because of a timelag: we are living on the environment's capital and not the interest. Three-quarters of ecosystem services are flatlining or in decline.

There are many examples of this decline. For instance, three-quarters of the world's fisheries are operating at maximum capacity or have already collapsed. We all notice it in the price of fish in the marketplace, which has trebled in the last three years.

Equally worrying is the threat to the diversity of life on earth. The rate at which species were lost in the last 100 years is 100 times higher than the natural rate of species replacement. If we project forward and take climate change into account, the MEA scientists predicted that by the mid to late 21st century, the rate will have increased by 100 times again – making the extinction rate 10,000 times higher than the natural replacement rate. Dr Scholes said that this would result in the loss of 20-30% species on earth over the next century.

What can be done?

Dr Scholes said that good legislation is very important. No-one deliberately destroys an ecosystem. Destruction is usually the unintended consequence of well-intended policies that have knock-on effects far away. A good example of this is the 10% biofuel target of the European Union. This has had massive consequences for forests in Indonesia, and has also caused food price rises in many developing nations.

Access rights are also important for ecosystem services. The lack of any rights to the land or the sea can make it very difficult to enforce responsible use of resources. Fisheries, for example, need strong policies and institutions if they are going to be protected for the future.

Dr Scholes talked about the importance of full-cost accounting. This involves realising that our wealth has three components: manufactured wealth, social capital and natural capital. If you take your natural capital to manufacture goods, and there is less of this natural capital available after the process, then, in real terms, the world is a poorer place. It is obviously wrong therefore that the accepted method of accounting will merely record the increase in GDP accrued from the sale of the manufactured goods. To properly determine whether we are getting better or worse off, we need to develop full-cost accounting methods that measure all kinds of wealth.

Dr Scholes ended by saying that our treatment of the earth was unsustainable and that we are also testing the limits of resilience of human society. He said that he would expect the earth to survive and that the human species itself should be able to cope with a rise in temperature of even 4 or 5 degrees. However, he said that our civilisation can only function in a fairly narrow temperature band. If the world becomes too warm, then modern civilisation – freedom, democracy and comfort – would all be at risk. Indeed we'd be very likely to lose it all.



Legislators and experts listening to Dr.Scholes' presentation. Many legislators felt there was need for greater education as to the dangers of climate change.

Stefan Schurig: Climate Change and the UN Negotiations

Stefan Schurig, Climate and Energy Director at the World Future Council, began his presentation by highlighting some of the facts about climate change:

- Eleven of the last twelve years (1995–2006) rank among the 12 warmest years since records began in 1850
- The total temperature increase is 0.76°C
- Mountain glaciers and snow cover have declined on average in both hemispheres
- Average sea levels rose at a rate of 1.8 mm per year between 1961 and 2003. The rate was even faster between 1993 and 2003 with about 3.1 mm per year
- There will be 150 million environmental refugees by 2050
- IPCC experts agree that containing climate change (i.e. making its consequences manageable) requires major changes in the way we live and manage our societies within the next 10 years.



Stefan Schurig proposed a three-pronged approach to tackling climate change: energy efficiency; develop the renewable energy sector; and halt deforestation and foster organic farming.

Schurig went on to lay out three key strategies to mitigate climate change. He stated that we must increase energy efficiency and energy saving; harvest the solar energy in the desert and develop the domestic renewable energy sector; and halt deforestation and foster organic farming. Schurig argued that a sense of justice and trust between the industrial and developing countries will be crucial if we are to address the threat of climate change. He argued for a global emissions target of two tonnes

per capita, and stressed the importance of increased technology transfer and investment in the carbon-free development of the South.

Dr. Rina Taviv: Climate Change Mitigation and Ecosystems Management

Rina Taviv, of South Africa's Council for Scientific and Industrial Research, told participants about the country's 'Green Scorpions'. These are employees of the co-ordinated national Environmental Management Inspectorate (EMI), who ensure compliance with South Africa's environmental laws on issues such as air quality, marine conservation, pollution and waste.

Dr Taviv explained that the introduction of the Green Scorpions has led to a marked increase in the number of investigations and convictions for environmental crimes. Reported arrests by the Green Scorpions increased from 898 in 2006/7 to 2,612 in 2007/8. Reported convictions of environmental criminals also increased from 134 in 2006/7 to 746 in 2007/8.

On a separate issue, Taviv also suggested changes in agricultural methods could help to mitigate climate change. For example, she called for the prevention of forest fires and burning for agriculture and she advocated the adoption of low-tillage. This can enable the land to regain some of the carbon lost when land is cleared.

The advantages of implementing land-use mitigation are that these technologies are in many cases cheaper than mitigation technologies in the energy and industrial sectors and, as well as reducing CO2 emissions, they have co-benefits, such as reduced air and water pollution and water conservation. Taviv pointed out that they are particularly applicable for developing countries, where agriculture is the source for a greater percentage of national carbon emissions.



Dr Taviv explained that South Africa's environmental police – the Green Scorpions – had managed to significantly increase prosecution for environmental crimes over the past 2 years.

Norbert Henninger: Integrating Ecosystem Services into Public Decision Making

Norbert Henninger, of the World Resources Institute, spoke about the implications of the Millennium Ecosystem Assessment for decision-making. He started by outlining the current state of ecosystem services, and he



Norbert Henninger from the World Resources Institute explaining that investment in environmental services can mean not having to invest in expensive infrastructure.

stressed that all but four of the 21 are unchanged or in decline.

Henninger diagnosed several problems in the way that we approach ecosystem management. Firstly he argued that people fail to connect healthy ecosystems with the attainment of socioeconomic goals. It was important therefore to distribute and publicise data that proves this to be the case. He also emphasized the importance of strengthening the rights of local people over ecosystems, since they were the best caretakers of those systems. Greater rights, he said, encouraged

greater care and responsibilities.

Henninger pointed out that the management of ecosystems is often fragmented across multiple agencies and that this can give rise to conflicting policies. He said that management must involve coordination of these agencies. He also expressed concern that governments and businesses are not held responsible for ecosystem management and said that it was crucial to improve accountability for decisions affecting ecosystems.

As an example of good decision-making which facilitates the sustainable use of ecosystem services, Henninger described the watershed management system around New York City. Maintaining the system of natural filtration by looking after the lakes, streams and rivers in New York State cost 1.5 billion US dollars over a 10-year period from 1997. Construction of a modern water filtration plant on the other hand would have cost 6 billion US dollars to build and \$300 million a year to maintain. The natural method of filtration therefore preserves the ecosystem and also saves money.

Use of the natural method of filtration would not be possible however without legislation. The law says that natural filtration is permissible if the natural environment is capable of producing water of adequate quality. It is this kind of forward thinking decision-making which can facilitate more sustainable use of ecosystem services.



The group listening to Norbert Henninger's presentation. Some countries have already introduced payment for environmental services with great success: notably Costa Rica.

Grettel Ortiz: The situation in Costa Rica

Costa Rican legislator Grettel Ortiz began the second day of the hearing by explaining how her country had, since the 1980s, succeeded in reforesting large areas – and how this had come about directly as a result of legislation.

She started her presentation with a series of slides which showed how, after World War 2, Costa Rica had cut down much of its forest to support

agriculture and cattle ranching. By the 1980s, the country's forested area was only about 20 percent of the forested area that had existed in 1940.

Ortiz explained that the country had introduced a series of laws to encourage the replanting of the forest: among them were the Environment Law, the Biodiversity Law and the Forestry Law. All these laws are geared towards providing payment for ecosystem services – through providing tax credits, subsidised loans and direct payments to landowners.



Ortiz explaining the Costa Rica has increased forest coverage since the 1980s – by offering a series of tax credits, subsidised loans and other incentives.

The results have been spectacular. The maintenance of forests is now widely perceived as a worthwhile business in Costa Rica. The forestry lobby is extremely strong in the country. Sustainable teak plantations have become widespread. The forested area has increased once again so that it now represents about 50 percent of the country.

The legislators listening to this presentation all agreed that they'd like to find out more about how Costa Rica has achieved such success.

Hilaria Supa: The situation in Peru

At this point Hilaría Supa Huaman, a Quechua Congresswoman from Peru, made a heartfelt speech to the participants:



Hilaria Supa spoke passionately about the need to "heal the earth". She asked other legislators whether they perceived the earth as a mother.

"Those who speak of development are in fact consumers. There are worse things in Peru where the government says there is no pollution, the people defend nature and the environment, but the government says there is no pollution. They say the indigenous people are against development, but the people are still poor.

"The people have nothing to eat, they would hunt, or eat fish but they have all been poisoned. Why don't they do studies in order not to pollute? We protect the land, the fish, life. All the world's indigenous people protect the environment.

"Someone spoke about land titles. Why do they give titles to the land? To take land from the indigenous people. It's a con. We don't want titles. We

want land and territory. We don't want it to be stolen. We don't want our brothers killed just so they can consume.

"These people don't know. They sit in their offices. The forests are the lungs of the world, and we are killing them to consume. Only the inhabitants know all the medicinal plants, and the indigenous can give solutions, alternatives, but we are not taken into account. We have been caring for the land for thousands and thousands of years. But the supposedly developed world doesn't want to know: they only value their own knowledge.

"We have lost our values, our self esteem. They say to us if we cut one tree for cooking that we are destroying the environment. We have never destroyed the environment. The blame is theirs and we will not take it. I would like to see you live there, drink that water. We have faith that Pachamama will react. That's why I ask, is the land just the land or is it your mother? For us it is a mother. It is our mother, because it gives us, air, water, food. For this reason we love this life. Without these things there is no life.

But a woman must rest to give birth to a good child, and the earth must rest too. They say if the land is not used then it must be sold. But this land is resting, just as a mother must rest. So I ask for solidarity for my people and all the indigenous people. We didn't come to fight, we came to get involved to save the planet."



Many legislators were extremely touched by what Supa had to say – and were keen to have their pictures taken with her. This is her with Emilio Flores from Mexico.

Fitrian Ardiansyah: how legislators can help save the rainforests

Fitrian Ardiansyah, Programme Director at WWF Indonesia, began by explaining how deforestation was one of the major causes of climate change. He explained that land use change (which includes deforestation) is responsible for 18% of global greenhouse gas emissions. Emissions from land use change in Indonesia makes up 35% of the global total. Brazil contributes 19%.

Ardiansyah outlined a number of factors that led to land use change:

- population growth and concomitant poverty
- market and commodity development (i.e. timber, pulp & paper, palm oil, biofuel) leading to increased logging & forest conversion
- large-scale infrastructure & energy development



Fitrian Ardiansyah enjoying a break between the presentations. Private game reserves – such as the one at Mabula – may have a role in ensuring the protection of ecosystems.

- unclear tenurial issues
- failure to acknowledge community rights because of conflicting policies and weak governance.

Ardiansyah highlighted certain passages of the Stern report, and echoed its message that: “Policy requires urgent and international action: pricing for damages from greenhouse gases, supporting technology development and combating deforestation.” Echoing Stern, he said that improving land management and reducing deforestation significantly reduces CO2 emissions and is a highly cost effective method of doing so – and

that large-scale pilot schemes could help explore alternative approaches to provide effective international support.

Ardiansyah said that there was a need for greater policy coherence between the agriculture, forestry and energy sectors with regard to forest management. He suggested parliaments review the permit allocation process for exploitative developments. And he said that the productivity of existing land needs to be increased to make development of forest areas less necessary.

In particular he recommended relocating exploitative developments away from forest and peatlands. For example the World Wildlife Fund’s 2007 study on the issue indicated that the use of tropical fallow land for planting oil palm as clearly more effective in terms of carbon dioxide savings than clearing of natural forests.



Tanzania and Ghana both have forested areas: AbdelKarim Shah (Tanzania) and Dr. Kwame Ampofo (Ghana) listening to the presentation with e-Parliament Secretary-General Nicholas Dunlop.

Juliane Zeidler: conservation of drylands

Juliane Zeidler, Managing Director of Integrated Environmental Consultants of Namibia, began by explaining that ‘drylands’ actually include large areas of semi-arid land that many people might perceive to be ‘green’. One must not think of drylands as barren deserted areas – they actually contain more than 35% of the world’s population and many of these people directly depend on natural resources and biodiversity for their daily survival.

Water is scarce in dryland areas and is often the limiting factor for

sustainable development. People have traditionally lived on livestock, game and some plants and fruits, so their lifestyle has had a relatively low environmental impact. Agriculture in drylands however depends heavily



Zeidler explaining that over 13 percent of Namibia's land mass is now within a drylands conservation scheme.

on water, so it is seldom sustainable and requires high inputs. About 70% of the drylands worldwide are affected by land degradation and the loss of biodiversity and all drylands are faced with climate change impacts and will have to adapt accordingly. Furthermore, the majority of people living in drylands are living in poverty, so social development and ecosystem protection need to be addressed at the same time.

Zeidler shared an example of best practice in promoting sustainable development and ecosystem management from Namibia. Namibia's National Community Based Natural Resource Management (CBNRM)

programme is a joint venture between government and non-government institutions, communities, community-based organisations and development partners. The programme aims to provide incentives to communities to manage and use wildlife and other natural resources in sustainable and productive ways. It does this by promoting three closely related approaches:

- **a natural resource management and conservation programme.** It promotes wise and sustainable management of natural resources, and encourages biodiversity conservation by creating the necessary conditions for sustainable use.
- **a rural development programme.** It seeks to devolve rights and responsibilities over wildlife and tourism to rural communities, thereby creating opportunities for enterprise development and income generation.
- **an empowerment and capacity-building programme.** It encourages and assists communities and their local institutions to develop the skills and experience to sustainably develop and proactively pilot their own futures.

There is 118,276 km² (13% of Namibia's land mass) within communal area conservancies involved in the project. 212,000 people live in the conservancies, and the project has seen real benefits in terms of increased income for the people as well as increased numbers in a wide range of animal populations.

Dr. Jackie Alder: Marine and Freshwater Ecosystems

Dr. Jackie Alder, from the Fisheries Centre at the University of British Columbia, urged participants to use 'climate change glasses' when trying to preserve marine and freshwater ecosystems. She argued that it was important to pay attention to both mitigation and adaptation strategies in order to deal with climate change.



Jackie Alder said that a sustainable marine management programme had been introduced in Kiribati. It featured both coastal and land policies – so that residents were not so dependent on the sea.

Mitigation tackles the cause of the problem and contributes to reducing long-term risk at the global level. Reducing greenhouse gas emissions, for example, will eventually slow down the increase in sea temperatures and the projected rise in sea level might not be so severe. Alder said that sea temperatures are going to continue to rise, and the maximum temperature will depend on how well we can reduce emissions.

Adaptation strategies provide for a change of approach in terms of fishery and marine management - given that climate change is already occurring. This is often difficult in the marine environment because there are few boundaries; fish are perceived as being common property; and enforcement is extremely difficult.

Alder introduced the concept of Integrated Coastal Zone Management (ICZM). ICZM is a dynamic, multidisciplinary process to promote sustainable management of coastal zones: balancing environmental, economic, social, cultural and recreational objectives. 'Integrated' in ICZM refers to the integration of all relevant policy areas, sectors, and levels of administration. It also means integration of the marine environment with the neighbouring terrestrial environments.

Alder gave an example of best practice in ecosystem management from



Sonya Fernandez and Laura Van Dam translating Dr Alder's presentation for the Latin American legislators. Both sets of legislators – African and Latin American – were most grateful for their hard work.

Kiribati: the National Adaptation Programme of Action (NAPA), a scheme to help less-developed countries adapt to climate change. Kiribati is made up of a group of small Pacific islands with low-lying coral cays. They suffer from a number of climate impacts, including coastal erosion, saltwater contamination, flooding,

declining agriculture and fisheries, and coral bleaching.

Kiribati has a small population of approximately 85,000 people. The islands are small and populations are growing, putting considerable pressure on the islands' resources. Only 10% of the population is in paid employment and much of the food is locally-grown produce such as taro, pandanus, coconuts and fish. Water has always been a fragile resource on the islands.

The Kiribati NAPA introduced a range of measures, including improvements to the water supply, improved meteorological equipment and reporting, and advances in agriculture such as the use of gene-banking and salt-tolerant crops. Money was also invested in coastal roads and seawalls, coastal management, and coral reef rehabilitation.

Alder said that the experience in Kiribati shows that the process of climate risk management is a slow process which cannot be rushed or simplified. All key stakeholders were involved and extensive consultations were combined with social, technical and economic assessments. Capacity building was instrumental in ensuring that full benefit was derived from the investment made in the project.



Some of the elephants kept in the Mabula Game Reserve. The way that the reserve operates is that funds from tourists are channelled towards upkeep and conservation.

3. Follow-up Actions

After hearing all the expert presentations, the MPs from each country discussed in turn the situation in their country and the plans for future action that they would take away from the meeting.

ARGENTINA



Dr. Luciano Fabris said that the issues that stood out from the hearing were the right to natural resources, incentives for the care of ecosystems, and the use of 'green accounting'. He felt that more effort should go into setting up reserves – and that legislation needed to be introduced to prevent the overexploitation of ecosystems.

COSTA RICA



Grettel Ortiz belongs to a party that describes itself as 'a friend to the environment' and it has championed many environmental laws. In addition to her presentation about payment for environmental services (see above), Ortiz said that Costa Rica has also developed a water tax, the country is looking at ways to regulate the number of cars in the capital and that, although the country has oil, it has imposed a moratorium on exploration.

She said that she would take home the idea of introducing private game parks – as this would be a way of enabling private investors to fund conservation. She also said that it's very important to restrict what multinationals do – and to require them to do studies on environmental impact.



Patricia Romero comes from an area in Costa Rica where pineapples are grown. She said that their cultivation causes environmental problems because they use up nutrients in the soil and pineapple farmers tend to use a lot of chemicals – so the land ends up degraded and polluted. She said that her party has been promoting organic cultivation. She said there was a need to construct all laws with an understanding of the needs of the environment and conservation. She called for more investment in education – not just children but also adults. At the moment 6 percent of Costa Rica's annual budget is spent on education. She would like to raise that to 8 percent and invest much more on environmental education.

GHANA



Kwame Ampofo. In Ghana all mineral resources are nationally-owned, as are forests, unless they are on the edge of a farm. You need a permit to fell trees even if they are on your own land. You are also not allowed to use a chainsaw. The cutting must be done by conventional means.

Ampofo said that the greatest devastation comes from three sources: the increasing demand for land for agriculture; the increase in mining in forest areas, where mining companies have entered previously protected reserves; and forest fires. Forest fires are a serious matter in Ampofo's constituency. He said that people frequently go and burn the forest so they can use the land.

Ampofo also said that he was particularly interested in the concept of full-cost accounting and would like to know more about how it could be applied in Ghana. He said that he was going to lobby the government to make sure that all future projects were properly evaluated using green accounting.



Michael Boampong's constituency contains the Bia National Park – a park which contains many threatened species and which is currently in receipt of EU funding aimed at its protection. He said that one of the big problems is that people enter into the reserve to chop down trees for timber and hunt for animals – and, although this was illegal, it was very difficult to stop them.

He said that, as a result of the hearing, he is even more convinced as to the need to protect game and the land itself. He said that he would put this agenda forward – especially with the chief and elders in his locality.

MEXICO



Emilio Flores said that he'd just presented a range of environmental initiatives into the Mexican Congress. One of the initiatives is to create a body at the national level to look after the forests. He said that the current situation was that there was a law in place to stop logging but that the trees were being cut anyway and that they were being cut in a very arbitrary way. He said that his new law would result in a clearer strategy and better policing with proper punishment for those that infringe. He said that the law was still going through Congress but that it has cross-party support.

PERU



Hilaria Supa said that there was a need for laws that state that companies should be prosecuted if they contaminate the environment – and this should apply to multinational companies as well. In particular Supa called for companies in the United States to be brought into international treaties and to be made to pay for the degradation that they had caused. She also said that, as an indigenous woman, she would like other legislators sign a declaration of solidarity on the environment and human rights.

SOUTH AFRICA



Anchen Dreyer said that in South Africa there are good laws. For example, the idea that the environment was “a right and not a privilege” was agreed and adopted by all parties when the constitution was set up. However she said that the key thing was implementation. She feels that the green scorpions need to be given more power to do their work.

Makhoni Ntuli

Ntuli said that in South Africa there has been a realisation that women are the custodians of the environment – so the government have established a forum every year where women meet to talk about the environment and about preservation of resources for the poor.



Ruth Rabinowitz has already set up an e-Parliament Renewable Energy Action Group (e-React) in the South African parliament. She said that they are currently looking at introducing feed-in tariffs through the business community.

With regard to ecosystems, she said there is clearly a need to pay people to protect biodiversity and that there needs to be more debate about carbon trading so that money actually reaches local communities.



Cornelis Van Rooyen was disappointed that there were not any parliamentarians from the North at the hearing. He was concerned in particular about carbon trading because this seemed to give northern countries a license to continue to pollute. Similarly, with regard to deforestation, he felt that the main culprits were the multinationals – and again they were not represented at the hearing. However, he said that he found the presentations very interesting and expressed interest in the

feed-in tariff and the experience of Namibia in conserving its drylands. Why, he asked was it not possible for South Africa to replicate this model?

TANZANIA



Raphael Mwalyosi said his constituency was about to undergo major development: the existence of iron ore and coal deposits in the area has always been known but now the area has been opened up by a new road. He said that he considers his immediate challenge to be the education of people in the area. He expects most people working in the new mines to be incomers – because local people do not have the necessary expertise. It is therefore imperative that the local people understand how their ecosystem might be at risk. Mwalyosi said that he was particularly impressed by the presentation from Costa Rica – and was interested in seeing whether it might be applicable elsewhere.



George Nangale said that he comes from a semi-arid region of Tanzania where drought is always a threat. He said that there was a big need in this area to educate people so that they store food. He also said he was interested in finding out about crops that were drought-resistant. He said that there was a need for legislation to guide post-harvest practices.



Abdelkarim Shah used to be a fisherman and comes from the Island of Mafia which is part of Zanzibar. He said that he is particularly concerned about illegal fishing – particularly dynamite fishing which is destroying the coral. He wondered whether the e-Parliament could be extended to provide support within individual parliaments. He said that he was concerned about the 200 or so fishing vessels that come from China to fish off the coast of Tanzania. He felt that the e-Parliament could play a big role in sorting out such problems.

UGANDA



Dora Byamukama indicated great concern as to the future of Lake Victoria. The lake is a resource which is shared between many countries in East Africa and she said there were many issues that needed to be addressed regarding its upkeep. In many cases buildings had been constructed too close to the shore, for example. Mining in the region had caused pollution. She said this was an urgent matter for the East African

Legislative Assembly which brings together all the countries with an interest in the lake.

Byamukama said at the hearing that she felt that people in her region needed to take climate change much more seriously and there was a necessity for concrete and speedy action. In particular she felt it was necessary to provide incentives to people to make it worthwhile for them to protect their local environment.



Ruth Kavuma represents the Sese Islands in Lake Victoria: a group of 84 sparsely populated and underdeveloped islands where people rely on fishing, lumbering and tourism for survival. She said that she was concerned about increasing pollution of the lake, reduced fish stocks and that people had cut trees so that the islands were no longer so well protected from the winds.

She said that she wanted to strengthen the people's knowledge of the environment and that there was a need to coordinate laws for environmental protection. At the moment, she said, there were too many separate authorities – what was needed was one overriding authority and clear laws. Furthermore this authority should have authority over private as well as public land – currently many private landowners just think they can do what they like.



Stephen Mukitale's constituency is close to Lake Albert and the River Nile. He said he was concerned about the depletion of fish stocks as well as encroachment which, he said, has caused a loss of natural vegetation at the edge of the lake. He was also concerned about the indiscriminate felling of trees. Apparently there are laws against lumbering and encroachment but they are inadequately enforced.

Recently oil has been found in this area and the National Assembly is currently debating a law which will enable its exploitation. Mukitale said that he feels they need urgent help with this – and in particular with how to formulate an environmental impact assessment.

4. On the e-Parliament, SwedBio and the World Future Council



The e-Parliament is a new global forum in which democratic national legislators work together to exchange and implement good policy ideas. It is led by an international Council of Members of Parliament and Congress. We are combining the new communications technologies with face-to-face meetings to apply at the global level some of the methods of a national Parliament. For more information on the e-Parliament please visit our website at www.e-parl.net.



The Swedish International Biodiversity Programme (SwedBio) was therefore initiated by the Swedish International Development Cooperation Agency ([Sida](#)) and the Swedish Biodiversity Centre ([CBM](#)), to allow a proactive and strategic approach to addressing biodiversity for local livelihoods within Swedish international development cooperation.



The World Future Council (WFC) aims for a global membership of wise thinkers, practical pioneers and young leaders. It will identify the "implementation gaps" between current practices and necessary measures to assure a sustainable and equitable world. As an institution representing humanity's common values, the WFC will provide an ongoing forum for debate and action. For further information please see our website at www.worldfuturecouncil.org/.