FROM CONSERVATION RESEARCH TO INFLUENCING POLICY

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Julia Marton-Lefèvre has been at the helm of several important global environmental and science organizations.

She will discuss the way in which the use of nature is governed: what works and what does not, and how to find the right balance between saving biodiversity and sustainable development. She will propose, and hope to discuss with the audience. solutions for both people and for Nature by positioning nature as providing solutions for global and local challenges.

Outline

1. **Introduction**
2. **Governance of the Use of Nature: a sea of acronyms**
3. **The conundrum: saving biodiversity vs sustainable development**
4. **Presenting a win-win for both people and Nature: nature Based Solutions to global (and local) challenges**
5. **Conclusions**

SLIDE 1: COVER SLIDE

1. INTRODUCTION

How many of you love to do conservation research?

How many of you do this out of pure scientific curiosity?

How many of you wish also to see the fruits of your science, influence policy?

How many of you think that the policies affecting conservation are adequate to protect and save biodiversity?

How many of you would like to work for a national or international organization which makes decisions about the way we human beings take care of our planet?

I have spent a great deal of my career working in one of these organizations, always at the international level. In each of these organizations, evidence-based science is essential to attain the goal of influencing and assisting society to conserve the diversity of nature and to ensure that this diversity will be able to provide solutions to our greatest challenges – climate change, food security, and an equitable development for all of us.

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2. GOVERNANCE AND THE USE OF NATURE: THE SEA OF ACRONYMS: IS THIS THE BEST WAY TO GO BRING ABOUT CHANGE?

So let us assume that we have much of the requisite scientific knowledge to do the right thing about looking after our planet, for my and your generation, and for future generations to come.

There is, I assume, no one in this audience, who is not interested in doing that right thing. You might however wonder how anything can be achieved with so many organizations in a sea of acronyms that you may or may not know.

SLIDE 2: A SEA OF ACRONYMS

SLIDE 3: HISTORY: founding dates of major environmental organizations

- SLIDE 4: SSC ACRONYMS

- SLIDE 5: EARTH DAY

Today we have a sea of organizations created by governments, international organizations or civil society to address the problems facing the environment.

This is of course very good, but does it lead to confusion and could all this simply contribute to creating silos rather than an organized, harmonious and collective effort to do what we know needs to be done?

I would love to have your views on this, but before you tell me what you think, let's see how many of these acronyms are known to you.

ACRONYM SLIDES

- **Slide 6: with IUCN**
- **Slide 7: with entire name**
- **Slide 8: IPBES**
- **Slide 9: with entire name**
- **Slide 10: WWF**
- **Slide 11: with entire name**
- **Slide 12: CITES**
- **Slide 13: with entire name**
- **Slide 14: NBSAPs**
- **Slide 15: with entire name**
- **Slide 16: does this system work?**

If you look at the mission statements of these organizations, it is clear that they are all doing the right things:

IUCN's mission is "*to influence encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable"*;

TNC says that its mission is "*Protecting nature, for people today and future generations.*"

WWF's mission is to "*stop the degradation of our planet's natural environment, and build a future in which humans live in harmony with nature".*

CI has a mission to "*empower societies to responsibly and sustainably care for nature, our global biodiversity, for the well-being of humanity*."

The Convention of Biological Diversity (CBD) sets out to "conserve biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources."

You can hear similar intentions in these mission statements, all ready to conserve and protect nature in a sustainable manner. Should we have already arrived at the end of the sustainability journey with all these good intentions from all these distinguished organizations?

SLIDE 17: RIO CONVENTIONS

The CBD, is one of the three so called *Rio Conventions*, on Biodiversity, Climate Change and Desertification, put into place as a result of the 1992 Earth Summit held in Rio de Janeiro. Each instrument is intended to represent a way of contributing to the goals of sustainable development. The three Conventions were said to be intrinsically linked, but whether this is really the case I leave to you to tell me.

I remind you that the three Rio Conventions are a part of a plethora of Multilateral Environmental Agreements (MEAs) which are legally binding agreements between three or more States relating to the environment. There is not a definitive agreement as to how many of these MEAS there have been since the 1972 Stockholm Conference on the Human Environment. *Can any of you hazard a guess?*

What is agreed is that there is proliferation of these MEAs, constituting a key characteristic of the existing environmental governance system. The various databases (including IUCN's) count from 400 to more than 500 of these MEAs. So the question is, would the world be in better shape with none, fewer or more of these?

As an example, I have recently agreed to serve on the Board of an important international organisation called Bioversity. This is one of 15 research centers in the CGIAR[1] which is now known as A Global Agricultural Research Partnership, rather than the cumbersome original name which corresponds to the acronym: Consultative Group on International Agricultural Research (CGIAR) created in 1971 with 4 initial institutes. I hope I will learn that the 15 members of this partnership work together in a seamless manner.

I have also recently accepted to chair an advisory board to the Sustainable Biomass Partnership, a partnership between 7 large energy companies trying to do the right thing about providing woody biomass in a sustainable manner to the basket of renewable energy sources we are committed to deliver.

Although we are all proud of our accomplishments as individual organizations, we rarely address the fact that perhaps we could tackle our challenges better with fewer of these organizations/ acronyms, or at least a system which brings them together more effectively in a cooperative rather than a competitive manner which reaches every citizen on the planet.

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[1] AfricaRice
- Bioversity
- Center for International Forestry Research (CIFOR)
- International Center for Agricultural Research in the Dry Areas (ICARDA)
- International Center for Tropical Agriculture (CIAT)
- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
- International Food Policy Research Institute (IFPRI)
- International Institute of Tropical Agriculture (IITA)
- International Livestock Research Institute (ILRI)
- International Maize and Wheat Improvement Center (CIMMYT)
- International Potato Center (CIP)
- International Rice Research Institute (IRRI)
- International Water Management Institute (IWMI)
- World Agroforestry Centre (ICRAF)
- WorldFish

3. THE CONUNDRUM: SAVING BIODIVERSITY VS SUSTAINABLE DEVELOPMENT

One of the recurring challenge in my various international positions has been to demonstrate that conservation, and therefore saving biodiversity is not a side activity of a few passionate scientists like yourselves or well-meaning tree-huggers and bird-watchers, but that it is absolutely essential for human well-being.

Imagine an iconic national park in an African country where one of the largest migrations of animals (wildebeests, zebra, gazelles…) takes place on the planet. This park was hailed as a new World Heritage site inn1981 because of having met the criteria of 'Outstanding Universal Value'. The park is indeed ideal for wildlife, but the government and many Tanzanians see it as a barrier to trade and development. When the leadership of the country announced plans to build a gravel road to ink the country's coast to Lake Victoria and countries to the west, there was a huge international outcry. Scientists writing in *Nature* wrote that "The proposed road could lead to the collapse of the largest remaining migratory system on Earth," but other scientists rebutted by saying that this is an emotional reaction, and that the entire ecosystem must be considered, including the needs of human beings. Once that road is built, the Outstanding Universal Value of the World Heritage site may be lost, but of course if the road is not built people will remain poor in the towns on both sides of the World Heritage site.

SLIDE 18: SERENGETI MAP WITH PROPOSED NEW ROAD

Or imagine a port that is being built on the eastern coast of India, just a few kilometres away from the unique place where thousands of the Olive Ridley Turtles (listed as Endangered on the Red List of Threatened Species) come to nest each year. The light and the noise from the port will definitely distract the baby turtles and cause their certain death as they waddle toward the port rather than out to the sea. No port will mean no development for a very poor part of the country, but building the port carelessly may mean the loss of an important turtle species. This story has a fairly happy ending demonstrating that development and conservation can co-exist and that there are ways to develop in a responsible manner to meet both the needs of people and the needs of nature.

SLIDE 19: DHAMRA PORT MAP

These are the issues many of us face every day, and in my view, on a planet of 7 billion and growing population, we need to find solutions that are good for people and good for the planet. I hope you will be able to give me your ideas when we have a discussion.

Let me briefly review the history of major global efforts to influence environmental policy.

SLIDE 20: MAJOR GLOBAL MEETINGS

The 1972 Stockholm Conference on the Human Environment was the first major meeting about the environment. Prime Minister Indira Ghandi was the only head of state attending this important meeting. One of the results of this Conference (in addition to the creation of UNEP) was the beginning of the establishment in many countries of Ministries of the Environment. The United States does not have such a Ministry which, unfortunately in many countries is seen as a junior post, handed out reluctantly as nearly an afterthought. There are only few countries that combine Ministries of Environment and Development, which is already a better approach.

In 1992, at the Rio Earth Summit on Environment and Development, most Governments were represented by their head of State who agreed that *'Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.'* [2]

Ten years later, in 2002 in Johannesburg, there was another Summit - the World Summit on Sustainable Development which agreed on a Plan of Implementation.

In 2005, The Millennium Ecosystem Assessment, an international synthesis by over 1000 of the world's leading biological scientists concluded that human activity is having a significant and escalating impact on the biodiversity of the world's ecosystems, reducing both their resilience and biocapacity.

[2] Principle 1 of the Rio Declaration on Environment and Development.

This was an important scientific contribution to this debate. *Are any of you using the findings of the Millenium Ecosystem Assessment?*

In 2010 the Parties which adhere to the Convention on Biodiversity met in Nagoya, and after late night negotiations, adopted 20 Aichi Targets which call for specific action by 2020, ranging from the goal that all people will be aware of the values of biodiversity, or that the protected terrestrial and marine domains will be considerably expanded. The late night negotiations also led to the agreement to a Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

Do you know which country has not ratified the Convention? [3]

Are any of you using the Aichi Targets or the Access and Benefit Sharing Protocol in your work? I do hope that each of you takes the Aichi Targets to heart and that you will remind your governments of their commitment to meet the targets by 2020!

In 2012, at the Rio+20 Conference on Sustainable Development governments agreed a document called *the Future We Want* in which they again stated that *they `renew their commitment to sustainable development, and to ensure the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations.'*

Those of us who were in Rio in June 2012 noted that there was a real disconnect between the conversations among government representatives and all of the other groups meeting in Rio: scientists, religious leaders, youth groups, civil society, business.....

Now our governments are busily working on a so-called post 2015 Development Agenda, moving from the eight Millenium Development Goals [4] agreed in 2000. The MDGs focus on reducing poverty, which exists in all countries, but of course mostly in the so called developing

[3] The US concerns were that CBD provisions calling for technology transfer to developing countries could threaten US intellectual property interests, and that the obligations for financial aid under the CBD were vague.

[4] Goal 1: Eradicate extreme poverty and hunger; Goal 2: Achieve universal primary education; Goal 3: Promote gender equality and empower women; Goal 4: Reduce child mortality rates; Goal 5: Improve maternal health; Goal 6: Combat HIV/AIDS, malaria, and other diseases; Goal 7: Ensure environmental sustainability; Goal 8: Develop a global partnership for development

countries. The plan now is to arrive at a more comprehensive set of so called Sustainable Development Goals. A huge amount of consultation has been going on about these SDGs, which today consist of 17 overarching goals with 169 targets. The magazine *The Economist* was rather cynical about this process, in its recent issue, stating that all this "shows what happens when bureaucratic process runs out of control." And that "something for everyone has produced too much for anyone". [5]

I wonder if any of you has been following the discussions about the SDGs. ? Does this have any relevance to your work?

The so-called 'Open Ended Working Group' set up at the UN to work on the SDGs states that it feels that the SDGs should *be action-oriented, concise and easy to communicate, limited in number, aspirational and global in* nature and universally applicable to **all** countries, while taking into account the different national realities, capacities and levels of development and respecting national policies and priorities.

It is also hoped that the SDGs will address and incorporate in a balanced way the economic, social and environmental dimensions of sustainable development and their interlinkages.

This of course sounds very promising and practical but there is a huge amount of pressure from all corners to include everyone's pet projects in the SDGs.

I case you are not familiar with these SDGs, here is the list of the 17 Goals[6] which will most likely be adopted by the nations of the world in the United Nation General Assembly in New York in September:

[5] The Economist, March 28th to April 3rd 2015 'Unsustainable Goals'

1. [6] End poverty everywhere
2. End hunger, achieve food security & improved nutrition & promote sustainable agriculture
3. Ensure healthy lives & promote well-being for all
4. Ensure inclusive & equitably quality education & promote lifelong learning
5. Achieve gender equality & empower all women & girls
6. Ensure availability & sustainable management of water & sanitation for all
7. Ensure access to affordable, reliable, sustainable & modern energy for all
8. Promote sustained, inclusive & sustainable economic growth, full & productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive & sustainable industrialization & foster innovation
10. Reduce inequality within & among countries
11. Make cities & human settlements inclusive, safe, resilient & sustainable
12. Ensure sustainable consumption & production patterns
13. Take urgent action to combat climate change & its impacts
14. Conserve & sustainably use the oceans, seas & marine resources

SLIDE 21: SDGs 1-4
Slide 22: SDGs 5-11
Slide 23: SDGs 12-17

Notice the recurring words in these Sustainable Development Goals:

- *Ensure,*
- *End*
- *Achieve*
- *Promote,*
- *Build*
- *For all*
- *Sustainable*

2015 has been and is full of important global meetings, including:

SLIDE 24: 2105: leading to transformational change?

- Sendai, March: Third World Conference on Disaster Reduction which came out with a Declaration stating that its participants recognize "the increasing impact of disasters and their complexity in many parts of the world" and declare their "determination to enhance efforts to strengthen disaster risk reduction to reduce losses of lives and assets from disasters worldwide."

- Addis Ababa, July: Financing Sustainable Development came out with an Addis Ababa Action Agenda The Addis Ababa Action Agenda establishes a strong foundation to support implementation of the post-2015 development agenda. It provides:

15. Protect, restore & promote sustainable use of terrestrial ecosystems, sustainable manage forests, combat desertification & halt & reverse land degradation, & halt biodiversity loss
16. Promote peaceful & inclusive societies for sustainable development, provide access to justice for all & build effective, accountable & inclusive institution
17. Strengthen the means of implementation & revitalize the global partnership for sustainable development

- A new global framework for financing sustainable development that aligns all financing flows and policies with economic, social and environmental priorities.
- A comprehensive set of policy actions by Member States, with a package of over 100 concrete measures that draw upon all sources of finance, technology, innovation, trade and data in order to support mobilization of the means for a global transformation to sustainable development and achievement of the Sustainable Development Goals.
- The Action Agenda also serves as a guide for further actions by governments, international organizations

- New York, September, SDGs: this will be a high level plenary meeting of the UN General Assembly as a Summit for the adoption of the post 2015 development agenda (25-27 September).

  The zero draft document proposes a New Agenda for Global Action and uses very strong language:

"This Agenda is a plan of action for people, planet and prosperity that also seeks to strengthen universal peace in larger freedom. All countries acting in collaborative partnership will implement the Agenda. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet for present and future generations. We are determined to take the bold and transformative steps needed to shift the world on to a sustainable path. As we embark on this collective journey, we pledge that no one will be left behind. "

SLIDE 25: ZERO DRAFT for UN SDG SUMMIT
Slide 26: ZERO DRAFT cont.

Paris: December: 21st Conference of the Parties to the UN Framework Convention on Climate Change

This will be the 21st yearly session of the Conference of the Parties to the 1992 UN Convention on climate Change and the 11th session of the meeting of the Parties to the 1997 Kyoto Protocol.

The Conference organizers are very straightforward in stating the goal is, to achieve for the first time in over 20 years of UN negotiations, a legally binding and universal agreement on climate, from all the nations of the world. Many of us think that this conference is the last chance to keep global warming from reaching dangerous levels. President

Obama, in announcing his climate plan last month was also very clear by stating that "We are the first generation to feel the impact of climate change and the last generation that can do something about it", and he added that "the Paris conference may be our last chance to have any effect.

So, I want to know from you whether you think the world is on the right track to make the changes that are needed, to ensure that human beings live in a world in which resource use meets human needs for all of us, while ensuring the sustainability of the natural system and the environment, so that these needs can also be met for future generations.

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4. PRESENTING A WIN-WIN FOR BOTH PEOPLE AND NATURE: NATURE BASED SOLUTIONS TO GLOBAL (AND LOCAL) CHALLENGES

Let's get back to conservation and let's start with some numbers – many of these are indeed problems, but I assure you that I will be offering solutions to these.

IUCN has been monitoring the state of biodiversity through its Red List of Threatened Species for the last 50 years. More than 10,000 volunteer scientists are doing this as a part of their work in all corners of the world.

SLIDE 27: RED LIST
SLIDE 28 : NUMBER OF SPECIES
SLIDE 29: NUMBER OF KNOWN SPECIES

The latest estimate of the total number of species on our planet is 8.7 million. Of these, 1.9 million have been formally named and described by scientists.

Today, the Red List covers around 70,000, or just over 3 percent, of all known species, such as mammals and birds on land, and fish and corals in our seas and oceans.

SLIDE 30: IUCN RED LIST COVERS 3%

This sample of species indicates how life on Earth is faring, how little is known, and how urgent the need is to do more to preserve the amazing diversity of species around us.

SLIDE 31 SOBER READING

The Red List makes for sobering reading:

- For example, one quarter of all known mammals and two out of five amphibians are today threatened with extinction.

- 27% of the world's 845 species of reef-building corals have been listed as threatened, and an additional 20% are considered near threatened!

Species and other forms of biodiversity are vanishing at rates not seen since the last mass extinction 65 million years ago when the dinosaurs disappeared. What we are witnessing today is species disappearing up to 1,000 times faster than the natural extinction rate calculated from fossil records.

Imagine if such a large percentage of your family or friends faced a high risk of "extinction". Or imagine if two thirds of your farm, your company or your home was damaged like the world's ecosystems...

Wouldn't you be worried? Would you do something about it?

The Red List finding are not intended to result in our giving up hope but rather to encourage action to turn things around. We know for certain that when conservation is put into place, things can change. For example, we have seen that some 70 mammal, bird and amphibian species have improved their status due to successful conservation action. This includes three species that were extinct in the wild and had since been re-introduced back to nature, including the California Condor and the Black Footed Ferret, in the United States and in Mexico.

The Red List has also steadily informed decision making shaping various international conventions such as the Convention on International trade in Endangered Species (CITES) the Convention on Migratory Species (CMS) and the Ramsar Convention on Wetlands of International Importance.

So you see, I come back to where I began: good science is essential for influencing good decision making. We simply have to make sure that the advice of good science is done is a way that indeed results in wise decisions. This is the challenge!

Here are some other sobering numbers to keep in mind as we look to the future – not to depress us: simply to give us the best information about the road ahead.

SLIDE 32: SOME NUMBERS TO KEEP IN MIND

- About one quarter of the earth's land area is considered to be degraded and about 5.2 million hectares of forests are lost every year.

- There are a lot more numbers to talk about, and of course, the primary among them is the increase by more than 30% between 1990 and 2010 of greenhouse gas emission which are leading to substantial changes in our environment.

How many of you link your research to climate change?

Now let's quickly look into the crystal ball and see where we might be **in** 2050.

- The human population of our planet is estimated to reach 9.5 billion.

- Current estimates of global GDP are around US$60 trillion. We could envisage a world with global GDP of US$200 trillion : -- three worlds sitting on our present one world & stretched beyond its limits.

- Demand for food is set to double by 2050 and energy needs to increase threefold.

- Demand for clean water will rise to meet the needs of the present 1 billion+ people who have no access to potable water or decent sanitation.

- Today 27% of the world's population is under the age of 15. Is a sustainable future possible without jobs for young people?

But, I don't want us to fall into deep depression. I truly believe that there are solutions, if only we human beings, would be ready to organize ourselves, look at the challenges in a lucid manner, roll up our sleeves and move toward those solutions.

The era we live in has been described as The Anthropocene, an informal geologic chronological term that recognizes the extent of the global impact of human activities on the Earth's ecosystems. So if we are in this era of human influence and impact, surely we human beings are capable of finding solutions. And, while I am not stressing the gender issue in this presentation (beyond the fact that I stand here in front of you, as a woman), I do mean that all of us, and not just half of us, hold the key to finding these solutions. It's great to look out at this room and see it so gender and culturally balanced – a too rare sight, alas, in my experience, but things will and must change!

We know that Nature itself holds many of the keys to provide solutions and generate benefits for people, the economy, and Nature itself.

SLIDE 33: NATURE BASED SOLUTIONS

Here are a few positive examples of solutions to inspire us:

- A 2010 study showed that conservation efforts have led to:
  • Increased populations in 5% of threatened mammals ;
  •16 bird species have been prevented from going extinct in the last 15 years.

- Over 70 zoos and aquariums are now featuring the IUCN Red List scale (ranging from Extinct in the wild, endangered, vulnerable, threatened to least concern. As more than 700 million people visit zoos and aquariums each year this is a good sign (*By the way, do you have any idea as to which species on the Red List is identified as being of 'least concern?. It is us, Homo Sapiens, of course*).

SLIDE 34: NATURE BASED SOLUTIONS: COMBINING ECONOMIC BENEFITS WITH QUALITY OF LIFE BENEFITS

- More than half of the planet's original forest cover has been lost or degraded, but there is huge potential to restore forests and turn degraded areas into healthy, fertile, working landscapes that meet the needs of people and the environment. And this restoration effort is well under way. In 2011, an international assembly of high-level representatives from governments, businesses and conservation groups set a target to restore 150 million hectares of degraded lands by 2020. This agreement is called the Bonn Challenge.

  We know that once we restore the 150 million hectare goal of the Bonn Challenge, this would bring benefits of:

  - $84 billion per year in net benefits in terms of food security, jobs and
  - Sequester an additional 1 GtCO2e per year.

- Each year, forests deliver US$130 billion of direct, tangible benefits to 1.6 billion of the world's poorest people—more than the total development aid!

- In 2014, at the UN Climate Summit, governments adopted the New York Declaration[7] on Forests, committing to cut natural forest loss in half by 2020 and strive to end all forest lost by 2030. They also agreed to restore forest lands and croplands of an area larger than India. And finally we are starting to link conservation to climate. The NY Forest Declaration also noted that by meeting these goals, between 4.5 and 8.8 tons of carbon pollution would be cut every year.

- One-third of Botswana's total wealth comes from natural capital – notably nature-based tourism and mineral resources.

- Healthy coral reefs provide coastal protection, tourism opportunities and many other benefits to the tune of $172 billion a year, yet today around 70% of coral reefs worldwide are threatened or destroyed. We now know that mangroves and coral reefs have proven to be more effective and less expensive than man-made structures to protect coasts against hurricanes and tsunamis.

- Protected areas in particular deliver some of the highest returns on investment. Covering 13% of land and 3% of oceans, they are our planet's most precious natural assets. And, I remind you of the goal agreed in 2010 by governments of the world to increase, by 2020 the protected area estate to 17% of the terrestrial and 10% of the marine domains.

Here are some examples about why it is important to establish protected areas:

- Protected areas supply freshwater to one in three of the world's largest cities, including Beijing, Bogota and New York, and store the same amount of carbon as tropical rainforests. To give but one example, the forests of China's Miyun watershed generate benefits worth US$ 2 billion a year whilst supplying 70% of Beijing's surface drinking water. Why is it so difficult to remember that water does not come from pipes and taps, but from wetlands, rivers and glaciers — in other words, from NATURE.

[7] http://www.un.org/climatechange/summit/wp-content/upload

- Mexico's protected areas provide a 50-to-1 return on investment for the Mexican economy, a total of US$ 3.4 billion per year from carbon storage, freshwater provision and eco-tourism;

- Tourism contributes a quarter of Kenya's GDP, with 70% of revenue coming from wildlife tourism.

- In Colombia, protected areas, which cover 10% of the country, provide water for one in two Colombians, and generate one-fifth of the country's hydroelectric power.

- In the wake of the 2011 Japan earthquake and tsunami, plans are afoot to establish the Sanriku Fukko National Park. This is a green reconstruction project to protect the coastline from future disasters, as well as to secure the highly developed tourism and fishing industry on the north-eastern coast.

Protected areas are a wonderful tool to accomplish conservation. And we need all the policy advising skills we can muster to get governments not only to agree to protect a part of the planet but also to do it well. This should not be so difficult – protected areas are proven economic engines: they provide jobs and livelihoods to millions of people and are a top destination for the global tourism industry. They protect resources of immense economic value such as water and fisheries.

5. CONCLUSIONS

So I have given you a few concrete examples of the central role of Nature in providing practical solutions to the challenges faced by all of us in all corners of the world. As there are real solutions, influencing policy is important so that the crucial role of biodiversity and healthy ecosystems for human development and well-being is recognized. For this we will need patience, perseverance, and excellent communications skills to put our messages out in the clearest and most convincing possible manner. We will be discussing the communications issue in the workshop tomorrow afternoon.

While in the past environmentalists attempting to influence policy did so with tragic tones of gloom and doom, we have now changed the discourse to one in which we say that nature is the go-to-tool to find solutions to our challenges. We first began using the term nature based solutions in the context of the UN climate negotiations, demonstrating the important role of natural infrastructure to provide a steady flow of benefits such as clean air and water, flood and drought protection, and climate regulation. In other words, to work with nature, rather than against it.

We must continue to do our good science, and those of us who are willing, must also make an effort to pass on the knowledge that maintaining species, genetic resources and healthy ecosystems– is a crucial pillar of any development strategy. Biodiversity is, quite literally, the foundation of people's wealth, health and wellbeing.

Today, we also have more understanding of the full economic impacts of biodiversity loss, and the significant monetary and non-monetary value of conserving nature. We need to move forward with the recommendations of the TEEB study — The Economics of Ecosystems and Biodiversity — initiated in 2008 , as an attempt to understand the proper values of nature.

After all, in order to continue having fish in our seas, nutrients in our soils and water in our wells, we urgently need to make sure that nature is placed at the heart of our economic systems.

The TEEB study has many examples drawn from the best academic studies. For example, biodiversity and ecosystem services in China contribute benefits that are at least equivalent to all other economic production as measured by GDP. And, continuing with the Chinese example, some 11,000 medicinal plants contribute around US$17 billion to the Chinese economy every year.

The problem is that at the moment, these benefits, in China and of course elsewhere, largely go unnoticed. They do not appear on the balance sheets of companies, or national GDP statistics.

Aside from delivering ecosystem services, biodiversity also contributes to ecosystem resilience which provides a kind of 'natural insurance' against potential shocks and losses of ecosystem services. Although difficult to measure, the insurance value of well-functioning ecosystems should be regarded as integral part of their total economic value.

So, help us figure out how natural resources can be valued as economic assets.

For many years, we have viewed nature either as something in need of protection or something that defies human control as in the expression “a force of nature”.

SLIDE 35: THANK YOU

But let us be clear. Nature is neither a victim nor is it an offender; nature is part of the solution.

It is time to recognize nature for what it truly is: a wise investment choice and a prerequisite for a peaceful and sustainable future.

Thank you for your attention and now give me your advice about how to bring about the changes we need, how to continue to do good science, as you all are doing, and how to make sure that your knowledge, your science is heard, understood, and leads to action.

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AICHI TARGETS

Strategic Goal A - Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: Public awareness increased
Target 2: Values of biodiversity recognized
Target 3: Incentives reformed
Target 4: Sustainable production and consumption promoted
Strategic Goal B. Reduce the direct pressures on biodiversity and promote sustainable use.
Target 5: Habitat loss reduced
Target 7: Sustainable management increased
Target 8: Pollution reduced
Target 9: Invasive alien species combated
Target 10: Pressures on vulnerable ecosystems impacted by climate change or ocean acidification minimized
Strategic goal C: To improve the status of biodiversity by safeguarding ecosystems, species and
Target 11: Protected areas increased
Target 12: Extinction prevented
Target 13: Genetic diversity maintained
Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services.
Target 14: Ecosystems are restored and safeguarded
Target 15: By 2020, ecosystem resilience enhanced
Target 16: Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force.
Strategic goal E. Enhance implementation through participatory planning, knowledge management and capacity-building
Target 17: National biodiversity strategy and action plan developed
Target 18: Traditional knowledge respected and reflected in the implementation of the Convention
Target 19: Knowledge and technologies improved and shared
Target 20: Financial resources