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Gincana 5 From COP 9 to 2010

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The Bonn Biodiversity Summit: Birthplace of a “Global Naturallianz” for Life on Earth

Fifteen years after its entry into force, the Convention on Biological Diversity faces unprecedented challenges. Biodiversity decline and loss of ecosystem services continue to be major global threats to life on Earth. The unprecedented loss of biodiversity is being seriously compounded by the negative impacts of climate change. The Fourth IPCC Assessment Report predicts that, as a result of climate change, up to 30 per cent of all known species are likely to be at increased risk of extinction before the end of this century. Unprecedented and sustained efforts are urgently required at all levels, by all stakeholders to address the planetary challenges of climate change and loss of biodiversity.

It is for this reason that following her appointment as Special Envoy of the Secretary-General on Climate Change, Ms Gro Harlem Brundtland stated: “It is irresponsible, reckless and deeply immoral to question the seriousness of the situation. The time for diagnosis is over and the time for action is now”. She stressed the importance of 2007 as a year in which the wheels have to be set in motion. The call for action on climate change has been heard.

The year 2007, which was the twentieth anniversary of the Brundtland report *Our Common Future*, will be remembered as the year of renewed commitment by the international community as a whole to address the challenges of climate change. Immediately upon taking up his assignment, the new Secretary-General of the United Nations, Mr Ban Ki-moon, decided to make climate change as one of his priorities. He appointed three special envoys and convened, for the first time in the history of the United Nations, a Summit of the United Nations General Assembly exclusively devoted to climate change. The Secretary-General’s personal engage-

ment was key to the success of the Bali road map. A special session of the Security Council was convened in April 2007 to consider the security dimension of climate change. For the second time, the environmental dimension of peace and security was recognized by the Norwegian Nobel Committee in awarding the prestigious Nobel Peace Prize to the Intergovernmental Panel on Climate Change and to Al Gore, the former Vice-President of the United States of America.

The call for action is also being heard to address the challenges of the biodiversity crisis. Under the able leadership of Marina Silva, the Minister of Environment of Brazil, a new phase of enhanced implementation of the three objectives of the Convention was born in Curitiba, Brazil, at the eighth meeting of the Conference of the Parties to the Convention. The success of this new phase calls for enhanced commitment by all Parties, other Governments and stakeholders. The ninth meeting of the Conference of the Parties will take place less than two years before the deadline of substantially reducing the loss of biodiversity adopted by 110 Heads of State and Government in Johannesburg at the 2002 World Summit on Sustainable Development. It will also take place less than two years before the end of the Curitiba commitment to finalize the negotiation of an international regime on access and benefit. It will take place also in less than two years before the celebration, for the first time, of the International Year on Biodiversity.

It is for this reason that the Secretariat has redoubled its effort to rise to the challenges of enhancing its support to Parties and establishing a broad-based partnership with all relevant partners and stakeholders. Between Curitiba and Bonn, the Secretariat serviced 83 meetings, including 10 major open-ended intergovernmental meetings, with the participation



of more than 5,200 delegates. Therefore, the Bonn biodiversity meeting offers a unique opportunity to build on the momentum achieved to date and be a pivotal point in the history of the Convention. It cannot be just another meeting but rather the beginning of a new chapter in the life of the convention on life on Earth and the start of new era of doing business differently when it comes to the relationship between man and nature.

As Friedrich Hoelderlin, the great German lyric poet, once said, “wherever there is a danger, so too grows the solution”. In offering to host the ninth meeting of the Convention, Germany has decided not only to offer the necessary conference facilities but to lead by example. The “Triple German Presidency” of the European Union, the G8 and the ninth meeting of the Conference of the Parties is unique. The preparation by the host country for the Bonn biodiversity meetings is unique in the history of multilateral environmental agreements. Germany’s part in the “Triple Presidency of the European Union”, together with Portugal and Slovenia, for the preparation of the Bonn meetings is unique. The inclusion of biodiversity in the Heiligendamm Declaration on Growth and Responsibility in the World Economy adopted by the G8 Summit in June 2007 is unique. The Heiligendamm biodiversity commitment is a major breakthrough as was endorsed by the President of the United States of America, a country that I sincerely hope will be able to join soon the CBD family as a full member. The Potsdam Initiative of the G8+5, as well as

the establishment of the Sukhdev high-level panel on economic consequences of the loss of biodiversity, is also unique. The National Campaign for Biodiversity as well the establishment of the “Global Naturallianz” is unique. The mobilization of all German stakeholders, including the scientific community, the local authorities, the parliamentarians, the youth, the non-governmental organizations, and the business community is unique. The WomenLiveDiversity” (“FrauenLebenVielfalt”) competition, as well as the “Naturathlon 2008, are also unique events. The adoption of the German biodiversity strategy and the involvement of the Länder is also unique. The Life Web Global Initiative on Protected Areas is also unique. The participation of Heads of State and Government in the Bonn Biodiversity Summit is also unique. The personal engagement of the Chancellor of Germany, Ms. Angela Merkel is also unique, as evidenced by her contribution to this magazine.

I am very pleased to present this issue of *Gincana*, which also includes contributions from seven other Heads of State and Government. Since the Curitiba meetings, *Gincana* has emerged as a major platform for Heads of State and Governments to share their vision with the world. Twenty Heads of State and Government have done so, including two articles by the Prime Minister of Japan, the country that has offered—three years in advance—to host the tenth meeting of the Conference of the Parties to the Convention in Nagoya in October 2010, thus opening the door for the establishment of the “Triple Presidency of the Conference of the Parties”.

As Albert Einstein said, “We can’t solve problems by using the same kind of thinking we used when we created them.” In offering to host the ninth meeting of the COP, Germany has moved ahead in promoting fresh thinking, and providing leadership to the world. In my capacity as the Executive Secretary of the Convention on Biological Diversity, it is my sincere hope that the Bonn Biodiversity Summit, being held under the motto “One Nature-One World: Our Future” will be remembered by our children as the birthplace of a universal “Global Naturallianz” for life on Earth with the full and active engagement of all stakeholders. ♡

Message on the International Day for Biological Diversity, 22 May 2008

This Day serves as a reminder of the importance of the Earth’s biodiversity, and as a wake-up call about the devastating loss we are experiencing as irreplaceable species become extinct at an unprecedented rate.

In any attempt to address this problem, agriculture should be viewed as a starting point. The crops and domesticated livestock of today are a reflection of human management. And the news is not good. About a fifth of domestic animal breeds are at risk of extinction, with an average of one lost each month. Of the 7,000 species of plants that have been domesticated over the 10,000-year history of agriculture, only 30 account for the vast majority of the food we eat every day. Relying on so few species for sustenance is a losing strategy.

Climate change is complicating the picture. Fluctuations in temperature and precipitation are wreaking havoc on crops. Experts say these factors may cost southern Africa up to 30 per cent of its maize crop by 2030. A diversity of crops and livestock is our best insurance in the face of these changes.

Livestock production is itself a major culprit in climate change, responsible for more greenhouse gas emissions than transport. Biodiversity is directly threatened by this industry; about a fifth of terrestrial animal biomass goes to livestock—land that was once habitat for wildlife, and that can provide an important buffer against the impacts of climate change.

In a world where the population is projected to jump 50 per cent by the year 2050, these trends can spell widespread hunger and malnutrition, creating conditions where poverty, disease and even conflict can metastasize.

Preserving our planet’s precious bio-



diversity is essential to development and security. Not just livestock and crops raised in agricultural landscapes, but also the many thousands of plants and animals in forests, oceans and other ecosystems need protection to maintain the planet’s basic environmental balance.

We must rally behind attempts at a solution, such as the Global Plan of Action for Animal Genetic Resources adopted last September at a meeting supported by the United Nations. Parties to the Convention on Biological Diversity are meeting in May to work, with all other partners, to redouble efforts to reduce biodiversity loss as they seek to achieve the global target set for 2010.

We all have a stake in supporting functional ecosystems, diverse in species and genetic resources, to sustain life everywhere. It is too late to undo the damage the planet has suffered, but it is never too soon to start preserving all that we have left. May this International Day for Biological Diversity unite us in this mission. ♡

Biodiversity: Time for a Breakthrough in Bonn

In Kericho District of Kenya, where the United Nations Environment Programme (UNEP) is headquartered, a community is beginning to be paid for managing their forests.

People in Lodiani are set to receive up to half a million Kenyan shillings to manage seedlings and trees. The project is funded by the power company KenGen.

The scheme aims to protect hydro-electric power facilities from water shortages and siltation. It underlines how innovative financial schemes are being federated around the world delivering the triple benefits of conservation, economic benefits and livelihood improvements.

Indeed, the world is rich with shining examples on how biodiversity and its ecosystem services can be creatively and intelligently managed.

These range from no-take fishing zones in countries like Australia, Fiji and St. Lucia, to the establishment of vast marine protected areas in Kiribati, to the United States.

The decision to include Reduced Emissions from Deforestation and Degradation in the Bali Road Map—the negotiation document for a post 2012 climate regime—alongside support by Norway of \$2.7 billion are other positive signs.

Meanwhile over 12 per cent of the world's terrestrial surface is now held in protected areas and UNEP's World Conservation Monitoring Centre is cooperating with others to better capture developments in marine reserves via the World Data Base on Protected Areas.

Sound and solid work is also coming from the G8 'Potsdam Initiative' and from grassroots initiatives such as Countdown 2010 and the Alliance for Zero Extinction.

The question before nations meeting in Bonn for the Convention on Biological Diversity (CBD) is how to accelerate and mainstream all such developments so they become less of a case for celebratory spotlighting and more of the

mundane part of day to day planning and management.

For while efforts are certainly being made to reverse the rate of loss of biodiversity by 2010, the urgency and magnitude of the response is failing to match the scale and pace of the challenge.

This is outlined in UNEP's Global Environment Outlook-4 launched last year:

- Twenty years ago around a fifth of fish stocks were deemed over-exploited—this has now risen to about 40 per cent.
- In Latin America and the Caribbean, desertification—caused by deforestation, over grazing and inadequate irrigation—affects a quarter of the region.
- Populations of freshwater vertebrates have declined on average by nearly 50 per cent since 1987 as compared with an around 30 per cent decline for terrestrial and marine species.
- About 40 per cent of big estuaries in the United States, including those that link to the Gulf of Mexico and Chesapeake Bay suffer severe eutrophication—which can lead to deoxygenated 'dead zones'—because of nitrogen enrichment.
- In the Caribbean, over 60 per cent of coral reefs are threatened by sediments, pollution and over-fishing.

In Dead Water, a UNEP-led report released at our Governing Council in Monaco in February highlighted how multiple impacts, ranging from coastal pollution to alien invasive species and now climate change may collectively impact 10-15 per cent of the world's seas and oceans—an area coinciding with some of the best and most productive fishing grounds.

We needed a breakthrough in Bali, we got one. We now need a breakthrough in Bonn—not least to ensure that a global response to climate change recognizes that bolstering the resilience of ecosys-



tems is a key part of the mitigation but also the adaptation agenda which in turn hinges on maintaining, not destroying, the planet's biodiversity.

The climate agenda has put a focus on technology transfer—this must also include 'soft' technology including skills and know-how on ecosystems management, restoration and rehabilitation.

Meanwhile, the third pillar of the CBD—namely Access and Benefit-Sharing (ABS)—remains weak, incapable of providing the wide-ranging economic and social improvements in developing, but also developed countries promised when the Convention was originally conceived.

There are some encouraging signs here too and ones that can draw on lessons from the Bonn Guidelines up to the International Treaty for Plant Genetic Resources for Food and Agriculture.

Many governments have been working hard since the CBD's meeting two years ago to carve out a path along which all countries might pass supported by NGOs and industry.

There remains a great deal to be done on finally realizing a fair and equitable regime that balances the interests of developing and developed countries and special interest groups.

Questions surrounding patenting and the role of indigenous knowledge up to the sharing of benefits with all relevant groups are part of that debate.

But this cannot be a reason for paralysis and inaction. Three pillars were identified under the CBD, the global policy response to reverse the rate of loss of biodiversity agreed in 1992—conservation, sustainable use and ABS.

It is high time that in Bonn we strengthen this third pillar by empowering the CBD to realize its laudable aims and objectives that remain as relevant and as urgent today as they did 15 years ago. ✎

Safeguarding the Global Web of Life – Germany in the Spotlight

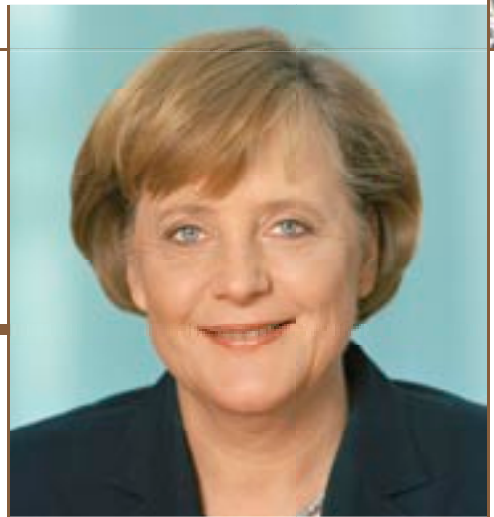
The richness of our planet, the treasures of Creation, the wonders of nature—these are three variations on one certainty: biodiversity is crucial to humanity’s future. Nevertheless, biodiversity is disappearing around the world on a dramatic scale despite numerous national and international measures aimed at stemming the tide. This loss in diversity is alarming. After all, nature is not just a value in itself. The diversity of nature also provides us with food, drinking water, fertile soil and medicines. It protects us from natural disasters and regulates the global climate. Not least, it provides many people with jobs and an income.

There are therefore more than enough reasons to protect the world’s biodiversity and to use it sustainably. By tackling this challenge with commitment we are also making a valuable contribution towards climate protection. This will be the focus of the 9th Conference of the Parties to the Convention on Biodiversity (CBD) whose

us to protect the climate. For example, natural, semi-natural and species-rich forests and moors have an enormous potential for storing carbon. Around 25 per cent of global emissions are due to the destruction of such natural ecosystems.

What should we do? We need to take a new direction if we want to conserve biodiversity. Key decisions on this have to be made at the Conference of the Parties in Bonn. For instance, the countries of origin of genetic resources must be granted a fair share of the profits from their use. I consider this to be one of the central points to be negotiated at the Conference. The desire of developing countries to agree on binding rules on this issue is completely understandable. I hope we can come to a unanimous decision with a concrete mandate for negotiations.

Furthermore, it is crucial that additional innovative financing instruments for the protection and sustainable use of biodiversity be launched. For a lack of fund-



tached to the adoption of criteria on selecting marine areas requiring protection. The large gaps in the global “security network” at sea cannot be closed unless progress is made. Another focus of attention is conservation of the genetic diversity of plants and animals in agriculture and forestry, as well as in horticulture.

If we are to have any real chance of halting the further decline in biodiversity, political acceptance of this issue must first of all be enhanced. It is therefore absolutely vital that knowledge about the impact of the loss of biodiversity be increased and disseminated. This will require an efficient interface between science and politics. With regard to climate change, this interface was created with the establish-

“The 9th Conference of the Parties to the Convention on Biological Diversity not only offers us an excellent opportunity but also places us under an obligation to do everything in our power to greatly advance protection of biodiversity throughout the world.”

participants I look forward to welcoming to Germany.

Why is biodiversity at risk? The main causes are pollution, intensive commercial utilization and the overexploitation of species and habitats as a result of poverty. Climate change is also contributing to the rapid global loss of biodiversity. Global warming is already having a negative impact on sensitive ecosystems such as coral reefs, mountains and the poles. The Brazilian Amazon rain forest is in danger of drying out. After all, biodiversity helps

ing remains one of the main reasons why the CBD has not been adequately implemented to date.

Moreover, the global network of protected areas on land and at sea must be further developed. We want to invite all states to make their contribution towards completing this network. Financial support is to be offered in return for cooperation. In particular, this mechanism can help protect forests, which are at threat throughout the world.

Special importance should be at-

ment of the International Panel on Climate Change (IPCC). Similar measures should be taken in the sphere of biodiversity. For here, too, we are faced with far-reaching issues which can only be resolved through close international cooperation.

Against this background, the European Commission and Germany initiated a study on the social costs of environmental destruction and the global loss of the benefits of ecosystems. It is intended to help bring about the necessary change in attitude in society as a whole.



I hope the Conference in Bonn and the High Level Segment will produce targeted new approaches to global biodiversity policy. The ministerial meeting will take place during the crucial final stage of the Conference. That will enable the ministers to set their own priorities.

It will give me great pleasure to welcome the ministers at the opening of the High Level Segment. Not only as former Federal Environment Minister but also as Federal Chancellor, I have a special interest in the protection of biodiversity. I am a passionate champion of this cause at both the national and international level. And I am very much aware that the CBD has more than an environmental dimension. It is also crucially important to co-operation between industrialized and developing countries.

In October 2007 I visited the BIOTA project in South Africa. BIOTA is an interdisciplinary research project established jointly by African and German scientists. The researchers are working on concepts aimed at stemming the loss of biodiversity. They are investigating the impact of changes in climate and use on the diversity in species and habitats and how the population is affected by this dynamic process. Based on the results, they recommend measures to protect and regenerate biodiversity.

In my view, a project like BIOTA has a twofold purpose. On the one hand, it makes a practical and instantly effective contribution towards protecting and ensuring the sustainable use of biodiversity. On the other, it fosters responsibility and rural development on the ground. Such projects deserve our support and we should encourage others to follow suit.

The international community has only two years left to reach the 2010 Target of a significant reduction in the loss of biodiversity. The 9th Conference of the Parties to the Convention on Biological Diversity not only offers us an excellent opportunity but also places us under an obligation to do everything in our power to greatly advance protection of biodiversity throughout the world. This, no more and no less, is about safeguarding the natural resources we need for our own survival and ensuring that future generations, too, have an opportunity to develop. ♡

Building a Society in Harmony with Nature

On the occasion of the Ninth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 9), I express my sincere appreciation to the federal government of Germany, the provincial government and the people of Bonn, and express my respects to the Parties and the Secretariat of the CBD for their efforts. I earnestly hope that this meeting will be fruitful towards achieving the 2010 Biodiversity Target.

Japan became a Party to the Convention on Biological Diversity in 1993. Since then, we have been making every effort to achieve the objectives of the Convention. Japan, being an archipelago that stretches from north to south, surrounded by the sea, and also blessed with four clearly distinguished seasons, enjoys a rich biodiversity which we benefit from.

In recent years, however, biodiversity in Japan is facing threats such as human activities and development, deserted rural areas including SATOYAMA¹ and alien species. Addressing the biodiversity “crisis” caused by climate change is also a critical issue. Another issue is that Japan largely depends on imports from foreign countries for most natural resources including foods.

To address these challenges, we twice reviewed our National Strategy, which was formulated in accordance with the CBD, and the Third National Biodiversity Strategy and Action Plan of Japan was decided at the cabinet meeting in November 2007. We will further strengthen our efforts towards conservation and the sustainable use of biodiversity at home and abroad by effectively implementing policies and measures decided in the Strategy.

It is important for each country to address sincerely what they are able to do and what they should do toward the achievement of the Biodiversity 2010 Target and additional Targets, by collaborating with other countries, international organizations, NGOs and so forth. I am

encouraged that a wide range of activities involving collaboration among various players has been initiated in many different fields around the world. Japan is determined, in Asia and in the international community, to actively contribute to such activities and make further efforts toward the conservation and sustainable use of biodiversity as a potential host of COP 10.

This year Japan has succeeded Germany to the G8 presidency. Global environment issues, including biodiversity which was taken up at the G8 Heiligendamm Summit in Germany, will be among the main issues for the G8 Hokkaido Toyako Summit.

Japan, as well as other Asian countries, has a long history of harmonious co-existence between man and nature. We would like to communicate to, and share with the world, information on building a “Society in Harmony with Nature”, into which modern knowledge and technologies are integrated by taking advantage of our attitude toward nature represented by “SATOYAMA” in Japan and knowl-



Challenges and Ways to Achieving the 2010 Target



edge and traditions for coexistence between man and nature including social and administrative systems.

I cordially invite every one of you to visit Japan in 2010. We will think together about biodiversity—the gift of nature—and work together so that we could continue to benefit from biodiversity in the future. ♡

1. SATOYAMA: A rural landscape being maintained through traditional and sustainable land use in Japan. It consists of a mixed mosaic of paddy, community forest, grassland, and is also a home for about a half of the endangered species in the country.



Irreversible damage to ecosystems and accelerated extinction of species are affecting the functioning of nature. Today, escalating impacts of human activities on forests, wetlands, and other natural ecosystems imperil biodiversity. The consequences of biodiversity loss also affect human well-being; decline of ecosystem supporting, provisioning and regulating services are causing loss of drinking water and climate disruption. The human economy depends upon the services performed “for free” by ecosystems. Economic development that destroys biodiversity and impairs services can create costs to humanity over the long term that may greatly exceed the short-term economic benefits of development.

The year 2010 became a milestone of committed actions for biodiversity. The 2010 EU biodiversity target to stop the loss of biodiversity by 2010, agreed by the EU summit in Goteborg in 2001, is much more ambitious than the global one, to significantly reduce the current rate of biodiversity loss by 2010, agreed at WSSD in Johannesburg in 2002. In May 2008, the Ninth Conference of Parties to the Convention on Biological Diversity is an important milestone to review the progress made and to show very clear and explicit commitments towards halting the loss of biodiversity.

The most irreversible of human impacts on ecosystems is the loss of native biodiversity. The EU is increasingly recognising the importance of biodiversity and the serious problem we are facing with biodiversity loss. Thus, it is crucial to raise public awareness on the protection of endangered plant and animal species and the preservation of healthy and stable ecosystems delivering critical ecosystem services important for achieving sustainable development. Informed decisions, improved science policy interface and enhanced scientific cooperation on the one hand, and improved education, communication and public awareness on



the other, are essential to safeguard our biodiversity. Given the current state of technology and the scale of the human enterprise, we should as soon as possible carefully decide what proportion and spatial pattern of land must remain relatively undisturbed, locally, regionally, and globally, to sustain the delivery of essential ecosystem services.

Slovenia, one of the new EU countries, has an important task during the first six months of 2008 in leading the European Council. Being situated at a juncture of different biogeographical regions and climatic zones, it has an exceptionally high diversity of landscapes, ecosystems and species. Thus, biodiversity is high on our agenda and among the environmental priorities along with climate change. In this implementation phase of the Convention local to regional levels are most critical.

Based on the national experience we believe that Parties to the Convention on Biological Diversity have to be proactive in its implementation. Biodiversity, particularly forest biodiversity, and climate change are among priorities during the Slovenian Presidency of the EU. Biodiversity and climate change considerations are closely linked and therefore there is an increasing need for stronger mutual support between biodiversity and climate change policies, building on their great potential for synergies. Biodiversity supplies the genetic and biochemical resources that under-

pin our current agricultural and pharmaceutical enterprises and may allow us to adapt these activities to climate change. We, therefore, aim at better linking activities of and encouraging cooperation between various relevant sectors.

The “close to nature” (sustainable) forest management practiced in our country for decades is reflected in almost 60 per cent of the territory being covered by mainly natural forests. Forest ecosystems also form a large part of the 36 per cent of the territory assigned to Natura 2000 network. They are both important for biodiversity conservation, providing also a framework for applying the ecosystem approach and a good basis for formulating and implementing holistic climate change policies.

At the regional level, the European Community provides the main legal framework for nature conservation. At the sub-regional level, working with non-EU countries in addition to the Bern Convention, two conventions provide a useful implementation framework: The Danube Convention and the Barcelona

Convention. The former is providing a good framework for transboundary cooperation within the Danube River Basin, the latter on the Mediterranean Sea. Slovenia’s active involvement in the implementation of the Barcelona Convention and its protocols, particularly the biodiversity of the coastal and marine areas, manifested itself *inter alia* in a protocol on Integrated Coastal Zone Management being finalized during Slovenia’s presidency of the Convention in 2007. Based on an ecosystem approach this new instrument provides a useful tool for sustainable management of the coastal and marine environment.

A recently signed cooperation on a transboundary project among the six countries in the South-East Europe, in the Dinaric karst area (“The Dinaric Arc Initiative”) is a good example of the implementation of the Programme of work on Protected Areas at a sub-regional level. Slovenia is a key link with the non-EU countries in the South-East European (SEE) sub-region to share the EU experience. This is a very particular karst region

with globally important biodiversity, and bridging the Danube River Basin and the Adriatic Sea (the Mediterranean ecoregion) into an interacting whole.

Although we are committed to continue our activities at the national and European levels towards achieving the 2010 target and beyond, decision adopted at the COP9 in Bonn will importantly shape our future activities. Importantly, the ministers at the High Level Meeting need to clearly state their country’s commitments. I strongly believe that these concrete commitments can make a difference for biodiversity if timely and properly implemented.

I would like to conclude my thoughts with a slogan developed in Park Škocjanske jame, a karst protected area in Slovenia, a World Heritage Property and a Ramsar Site, to manage their natural and cultural heritage: “*Learn to Live, Learn to Love and Learn to Last*”. I believe it is a promising saying for biodiversity conservation and its sustainable use for present and future generations for a more sustainable use of natural resources. ❖

W. Baldwin Spencer, *Prime Minister, Antigua and Barbuda*

The 2010 Biodiversity Target and Challenges Faced by SIDS in Addressing Biodiversity Loss

The proverbial clock is ticking and in less than 24 months the year 2010 will be upon us. Other than signifying the fact that we would be a decade into the 21st century, 2010 will be remarkable for a far more important reason: 2010 is the benchmark year during which the global community will be judged about its abilities in meeting the 2010 Biodiversity Target agreed to by all Parties to the Convention on Biodiversity (CBD) in 2002.

The international community cannot claim that the 2010 Biodiversity Target was unachievable because it was unclearly or ambiguously worded. All Parties to

the CBD agreed in The Hague (2002): “to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.” Moreover, this target was reaffirmed by Heads of State and Government at the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002.

Sadly though, with our collective date with destiny fast approaching, the international community is only now beginning to come to grips with the challenges that must be surmounted if this 2010

target is to be achieved. There are critical gaps in financing and capacity at the global, regional, national and local level that thwart efforts for comprehensively assessing and responding to the threat of biodiversity loss. If these gaps remain unaddressed, then the target will simply be unachievable, but this will not be because the target was unclear but instead it will be the result of the lack of commitment and the shirking of responsibility by the global community as a whole.

As the elected leader of a twin small island state, I am particularly concerned about the need to ensure time-



ly, effective and concerted action because the grave impacts of biodiversity loss are most acutely felt in Small Island Developing States (SIDS) like Antigua and Barbuda.

There are over 100,000 islands on the planet and 150 of the largest have a land-mass equal to the size of Europe. Some of these islands support the most rare, endangered and threatened plant and animal species on the planet. Taken as a whole, despite their small size, small islands are rich and teeming in biological diversity and provide habitats for over 4000 endemic species of plants and animals. However, over the years, environmental degradation has led to the extinction of many animal and plants species, with the concomitant irreversible loss of genetic resources and ecosystems, which in turn has affected the dynamic interactions of ocean, coral reefs, land formations and island vegetation.

For all SIDS, marine and coastal areas are critical to the health and well-being of communities and ecosystems. Un-polluted marine and coastal ecosystems and habitats not only support a rich diversity of marine life but also provide valuable resources, support jobs and income for local communities. Beautiful beaches and spectacular dive sites lure tourist dollars and provide employment in many SIDS. Bountiful waters support sustainable fisheries which in a number of SIDS are the mainstay for national incomes, coastal livelihoods and traditional cultures.

Unfortunately, biological diversity in SIDS is eroding rapidly and the rate of extinction of unique island species is increasing exponentially. The marine environment of SIDS, for example, is seriously threatened by over-fishing, the loss of habitats due to destructive fishing techniques, inappropriate coastal development, pollution and run-off from a range of sources, as well as invasions of alien and exotic species all of which upset the natural yet fragile ecological balance. Overriding this all is the impending and very real threat of climate change, whose influence we already see in coral bleaching, changing ocean currents and increasingly violent and destructive storms.

Conserving these resources is not simply about protecting the environment, but

also about creating new economic opportunities that do not undermine the health of marine ecosystems. It is clear that food security, economic development and natural resource management of SIDS must be addressed in the overall context of sustainable development.

Given all of these challenges, and faced with the 2010 deadline for the implementation of policies and measures to reduce the current rate of loss of biological diversity, SIDS can provide suitable framework—as “living laboratories” for assessing biodiversity loss, defining baseline(s) against which the rate of national biodiversity loss could be measured and putting into place effective responses that mitigate against biodiversity loss. The role of SIDS as repositories of unique and endemic biodiversity resources allows for SIDS to be seen as “living laboratories” for addressing biodiversity loss and showcasing the efforts of national, regional and global actors in addressing biodiversity loss is critical given the short timeframe to meet the 2010 Biodiversity Target.

If one accepts the maxim that biodiversity contributes directly and indirectly to human well-being; that it is essential for the functioning of ecosystems and the sustained flow of benefits from ecosystems to individuals and societies; and that the loss of biodiversity contributes to worsening health, lower food security, increasing vulnerability, lower material wealth and worsening social relations, then it is equally easy to see that SIDS can and do provide a suitable framework for immediate action.

While we acknowledge that the Parties to the Convention have created a comprehensive body of policies, tools and guidelines that address the threats to biodiversity at all levels, and that these policies provide a sufficient framework to deal with the biodiversity crisis, we must also acknowledge that more work needs to be done—and urgently so.

Put in the starkest of terms, the loss of biological diversity destabilizes human and ecosystem well being in SIDS, which in turn make communities and ecosystems particularly vulnerable to external shocks and disturbances such as hurricanes and floods. The adverse impacts

of climate change directly contribute to the loss of valuable and fragile biodiversity resources in SIDS and taken together these two global challenges pose a grave and imminent danger for the future survival of SIDS and an immediate and significant barrier for the achievement of the Millennium Development Goals in SIDS by 2015.

If SIDS are to meet the challenges that are inherent in fulfilling the globally agreed 2010 Biodiversity Target, then the following representative set of priorities should be considered for all SIDS—in close partnership with all stakeholders and the international community:

- Enhance the collection of baseline data and information on national biodiversity stock
- Improve national systems for monitoring and evaluation of biodiversity
- Improve linkages with existing commitments with other MEAs
- Strengthen national capacity and participatory processes, including consultation and management skills
- Improve management effectiveness through the combination of scientific and traditional knowledge
- Develop sustainable financing mechanisms at the national and community levels
- Improve the integration of environmental priorities into poverty reduction strategies
- Improve communication and networking, including through identifying and highlighting the benefits, sharing lessons learned, developing local technical expertise, and providing education and awareness for local communities to improve management and enforcement of environment protection laws.

Unprecedented efforts will be needed to achieve the 2010 target. However, with appropriate scaled-up responses, it is possible to achieve the 2010 target at national, regional and global levels. Utilizing the policies of the Convention and some of the ideas identified here, I believe that SIDS can strive towards meeting the 2010 Biodiversity Target, but this is predicated upon a close, effective and timely partnership with the global community. ❖



Felipe Calderon, *President, Mexico*

Facing Biodiversity Conservation Challenges in Mexico

The biodiversity of the Mexican territory is exceptional. Mexico is one of the countries with the richest biodiversity and natural wealth in the world. Thus we are well aware of our duty to protect this patrimony in order to inherit a better future for our children and for mankind.

In this article we address the problems faced by Mexico related to biodiversity and endangered species conservation, as well as some of the main public policies launched during my administration to curb environmental degradation, protect our biodiversity and combat the effects of climate change.

Mexico's natural capital

With only 1.5 per cent of the planet's land surface, Mexico holds almost 12 per cent of the known species of the world. Likewise, Mexico is considered one of the five countries with the widest variety of ecosystems, along with China, India, Peru and Colombia.

Mexico is also exceptional for its marine surface. It is the only country with an exclusive sea, the Gulf of California, and it shares with Belize, Guatemala and Honduras the second most import reef system in the world, located in the Caribbean.

A key element of Mexico's biodiversity is the great number of endemic species (e.g. half of its flora species). This represents a special challenge since a failure in our conservation efforts would mean that they will disappear from the planet. That is the reason why their protection is a priority for the government of Mexico.

Challenges and opportunities

These biological resources are part of our fundamental heritage and are central to our economic, social and cultural development. We consider them necessary to drive a competitive economy and raise living standards for Mexicans.

However, this biological wealth is

threatened by different factors, including land use change and ecosystem fragmentation, illegal wildlife trade, invasive species, over-exploitation and pollution. Moreover, in the long-term, the impact of climate change represents the biggest threat for wildlife and biological diversity both in Mexico and the rest of the world.

Protecting our ecological diversity implies challenges, as well as opportunities, to develop our communities.

That is why in Mexico, we are determined to turn conservation and sustainable use of natural capital initiatives into development tools, especially for the rural communities living in poverty. We want to guarantee the well-being and progress of Mexicans, without compromising the welfare of generations to come.

What we are doing

My government is committed to promote economic and social valuation of biodiversity, including market diversification to encourage economic development in rural communities, based on the sustainable use of their natural resources. Rural and indigenous communities of the state of Oaxaca, for instance, generate almost 40 million dollars annually and at least 30,000 jobs through sustainable management of their certified forests.

Our landmark forest program, Proarbol, is a payment for environmental services scheme, intended to launch the development of communities located in forests and protected areas, as well as in other conservation priority regions. With Proarbol we have expanded the surface under sustainable forest management and fostered alternative productive projects. This program was essential to meeting Mexico's goal of planting 250 million trees in 2007.

Along with our conservation efforts and the sustainable use of our natural resources, we are expanding, gradually and consistently, the protected extension of

Mexican primary and representative ecosystems. Only in 2007, 1,066,300 additional hectares of Natural Protected Areas were decreed, reaching a total of 23 million hectares. By 2012, we intend to surpass 25 million hectares of protected areas—which is equivalent to nearly 13 per cent of our territory.

We are also determined to give special attention to Mexican endangered species through specific programs oriented to their recovery, protection and sustainable management. When a species is lost, the rest are at risk. Therefore, we have launched the Conservation of Endangered Species Program. We will allocate approximately five million dollars for the protection of the vaquita marina, the leatherback turtle, the jaguar, the Mexican wolf and the royal eagle, all of which are species in risk of extinction.

We have developed information systems with reliable data, based on solid scientific and technical knowledge, which are constantly improved and equipped with forefront technology in order to make them accessible to all kind of users. The most complete of these systems is the National Information System on Biodiversity, developed by the National Commission for the Knowledge and Use of Biodiversity (CONABIO). This system is vital for decision-making on conservation and sustainable use of natural resources.

We are firmly fighting the illegal clearing of our forests, through the implementation of a Zero Tolerance policy. Thanks to the collaboration among the federal government, local authorities and forest communities, in 2007, 19,000 metric cubes of round wood were secured and 62 sawmills were closed down. We know that punishing those who undermine our forests is not enough. Therefore, we are also promoting education for sustainable development. During my administration, the environmental agenda has been incorporated into the free textbooks distributed in ele-

Aníbal Cavaco Silva, *President, Portugal*



mentary schools, as well as in the curricula of middle schools in order to raise awareness among children of the importance of preserving our natural resources.

To face the main environmental challenge affecting mankind, we presented the National Strategy on Climate Change. With this strategy we are making progress on two fronts: on one hand, in what we call the “Green Agenda”, which includes programs to protect and reforest our woodlands, and on the other hand, the “Gray Agenda”, which focuses on the implementation of measures to reduce air pollution and to promote renewable energies impelled by water, wind and sunlight.

In these ways, Mexicans are resolved to transit from the mere diagnosis of problems to the design and implementation of solutions, always acting with responsibility and a strong commitment to preserving our natural capital and guaranteeing a better quality of life for present and future generations.

Final comment

Mexico’s biological wealth is a key component of the world’s biological richness. With the measures described above and other complementary actions we join the international community in its efforts to significantly reduce the rate of biodiversity loss.

We Mexicans acknowledge that there is much more to do for the protection and conservation of our wildlife. After many years of failing to make a significant contribution to protect our biodiversity, today Mexico is recognized by the 2008 GermanWatch index as the fourth country in the world for its efforts to combat climate change. We also rose in Yale’s University Environmental Sustainability Index, which measures the performance of the environmental policy of nations, from 66 to 47th place in 2008.

Mexico will keep its guard up. We are determined to protect and preserve the natural heritage of all Mexicans and of mankind. We will continue to demonstrate, with facts, our commitment to preventing and mitigating the effects of climate change. Preserving Mexico’s biodiversity is a priority for my government and it is a commitment of all Mexicans to the planet. ♡

Stopping Biodiversity Decline: A Matter of Urgency

Distinguished Participants of the 9th Conference of Parties to the United Nations Convention on Biological Diversity.

Stopping biodiversity decline is a matter of urgency.

The Millennium Ecosystem Assessment launched in 2001 by the UN Secretary-General reported that changes in biodiversity have been more rapid in the past 50 years than at any time in human history and are expected to continue at the same pace or even to accelerate. As a result some two-thirds of ecosystem services worldwide are in decline.

The recent Global Environment Outlook which assesses the current state of the global environment stated that species are becoming extinct at rates which are a 100 times faster than the rate shown in the fossil record because of land-use changes, habitat loss, overexploitation of resources, pollution and the spread of invasive alien species. Climate Change plays a crucial role in biodiversity decline. Many natural systems are already being affected by climate change and the damages will accelerate as the world gets warmer.

In fact, a new major extinction is under way, this time caused not by natural disasters but by human population growth and consumption patterns.

Therefore it is decisive to develop ambitious policies and to achieve a significant reduction of the current rate of biodiversity loss at the global regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth by 2010 as agreed in 2002 by the Parties to the Convention on Biological Diversity.

But is also important to recognize the ecosystems services provided by biodiversity, and to give biodiversity the necessary relevance in the economy.

Therefore, the business sector has a vital responsibility towards the conserva-

tion of biological diversity, the sustainable use of its components and the fair equitable sharing of benefits arising out of the utilization of genetic resources. In fact all businesses ultimately depend on biodiversity and how companies manage biodiversity is increasingly seen as relevant to their bottom line performance.

Companies can and should manage biodiversity risks and capture biodiversity opportunities initiatives undertaken by the business community to conserve biodiversity will not only safeguard current and future operation but can also improve the competitiveness and profitability of business.

I welcome all efforts currently being developed by the Convention on Biological Diversity and by the European Union (EU) to foster the “business case” for biodiversity.

Partnerships between companies, public authorities and NGOs represent one of the options to better protect nature and to accelerate business-based opportunities.

In this respect, I welcome the results of the EU Portuguese Presidency. Portugal, in its capacity as Presidency of the EU in the second term of 2007 actively worked on the development of an initiative—*The EU Business and Biodiversity Initiative*—aimed at creating a reference framework for partnerships between business and biodiversity protection based in a group of principles and a European platform with monitoring and benchmarking capacities which was discussed in Lisbon at a EU High Level Conference. As a result, the European Commission decided to establish a Technical Support Facility to improve the continued development of this EU Business and Biodiversity initiative.

I am confident that this process will better mainstream biodiversity into public policy and business activities. ♡



Madagascar: Heading Boldly Towards 2010

With just two years left before 2010, we need to ask ourselves the hard question. What have we achieved? At the sixth Conference of Parties in 2002 we set goals to significantly reduce the current rate of biodiversity depletion. How many of those objectives have actually been met?

As a signatory party to the Convention on Biological Diversity, Madagascar has been engaged in this global conservation challenge. We have been seeking, testing, developing and implementing new ideas to maintain our island's exceptionally unique biodiversity, its flora and fauna, which is found nowhere else on Earth.

We are faced with serious challenges. In the context of globalization, how does one protect this unique richness and fight poverty at the same time? How do we maintain the health of the essential ecosystems on which we humans depend? What can we do about climate change? Cyclones, hurricanes, floods and droughts increase and damage human livelihoods as well as our natural heritage. We are seeing these catastrophes now. Climate change is no longer just a theory.

Madagascar embarked on transformational change with its "Madagascar Naturally Vision", a bold vision with goals that have been closely inspired by the Millennium Development Goals. From this vision we have forged our framework for sustainable development for 2007-2012, the Madagascar Action Plan. Commitment 7 of the Madagas-

car Action Plan states that we "will be a world leader in the development and implementation of environmental best-practice". Central to the success of the plan is the decentralization process that strengthens the 22 regions of the country, giving them the responsibility and the means to revert the trend of environmental degradation.

Biodiversity conservation must be proactively addressed to be successful. Conservation and environmental protection needs to be integrated into all poverty alleviation strategies in order for the latter to be sustainable. The ecosystem approach, and the principles on sustainable use set in Addis Ababa, are tools to foster a more holistic vision and integrated approach to biodiversity conservation, with the participation of all stake-

holders and based on good governance principles. However, participation of local communities in biodiversity conservation requires that they be trained and supported.

In 2003, I made a commitment to triple the protected area coverage of Madagascar from 1.7 million ha to 6 million ha. Since then, we have made good progress and the protected area system now covers some 4.5 million ha, including coastal, marine, freshwater and forest ecosystems. This is a significant contribution to the current global 2010 target.

In Madagascar, we have made this progress by reinventing our perception of protected areas. We have taken full advantage of the six IUCN categories, so that the new protected areas are no longer

isolated from the rest of the landscape. Not only do they protect the unique biodiversity of Madagascar, they also protect its invaluable cultural heritage.

The new Madagascar Protected Area System is well integrated into the broader regional planning processes. Protected areas bring additional benefits along with the biodiversity protection, such as maintenance of environmental services such as water supplies, nutrient cycling and local climate regulation. Contrary to the traditional view of protected areas, they can also be used as a mechanism to provide long-term access to natural resources for communities living in and around these areas, thereby providing more security and providing incentives for better land management. Protected areas are also central to generating direct revenues

"Protected areas bring additional benefits along with biodiversity protection, such as maintenance of environmental services such as water supplies, nutrient cycling and local climate regulation."

from ecotourism. In my country, over half of the tourists come to visit the natural riches of the island and so protecting these riches is essential for the development of the promising tourism sector.

This new role of protected areas as social, economic and environmental elements of sustainable development is in line with international legal instruments such as the Convention on Biological Diversity, Agenda 21 and the World Summit on Sustainable Development action plan set in 2002.

Sustainable use of natural resources, when applied, promotes social justice, participative democracy and equity. Protected areas integrating sustainable use become a center of interest for local communities. Social safeguard policies ensure

Helen Clark, *Prime Minister, New Zealand*

that the poorest do not bear the costs of conservation.

In parallel to the creation of new protected areas, sustainable forest management areas have been established. These areas are carefully delineated and are intended to provide a sustainable and rational supply of forest products. Madagascar has set a goal to maintain its forest cover at its 2001 rate while satisfying the needs of its population. To achieve this significant efforts are needed to restore both natural forests and to plant more plantation forests to ensure that they can provide our wood needs.

For the 2010 goals, a lot remains to be done but it is clear that we have some new opportunities too.

It is clear that conservation, sustainable forest management and management of carbon stocks through forest conservation, reforestation and afforestation contribute to climate change mitigation and adaptation. Initiatives such as the Biocarbon Fund and the Forest Carbon Partnership Facility should be multiplied. The recent Bali Action Plan agreed by the Parties of the UNFCCC is an opportunity to create stronger synergy between international treaties that we should seize. In particular there are clear links between the UNFCCC and activities implemented under the CBD to protect forest and wetland habitats, the destruction of which account for one fifth of the world's carbon emissions.

It is clear that all our environmental commitments need to be sustainable. For example, the challenge is not only to increase the protected areas coverage but also to ensure the effective and efficient long-term management of these areas. This requires technical expertise but it also requires funding. In Madagascar, we are developing new financing mechanisms such as environmental trust funds, but their capital still needs to be increased. We are well aware that if we are to succeed in our promises to leave healthy ecosystems to the next generation then we also need to leave the means to pay for them.

As we move closer to 2010, we should make sure that we reinforce partnerships and exchange networks to share, learn and build upon each other's experiences to ensure that we truly cherish the environment. ♡

Balancing Conservation and Sustainable Use of Biodiversity

New Zealand was proud to host a visit of The Convention on Biological Diversity's (CBD) Executive Secretary, Ahmed Djoghlaif to New Zealand in January last year. Dr. Djoghlaif's visit was all too brief, but I believe he was able to see a little of our unique landscapes, biodiversity, the important role of Māori in our society and environment, and discuss a little of how we approach sustainable use of natural resources.

I am pleased to be able to contribute to Gincana and offer some perspectives on New Zealand's long involvement with bio-



“Biodiversity is everyone's business.”

diversity issues, our economic dependence on biodiversity, and our commitment to be the first truly sustainable country. Balancing conservation and sustainable use of biodiversity is critical to achieving that.

Efforts to ensure the long term conservation of New Zealand's unique biodiversity gathered strength in the latter years of the last century. New Zealand has around a third of its land area in its public conservation estate. In 1993, New Zealand ratified the Convention on Biological Diversity, and in 1998 the government adopted 'Halting the decline of indigenous biodiversity' as one of its 10 strategic priorities. The New Zealand Biodiversity Strategy was launched in February 2000 after wide consultation.

As Prime Minister, I was proud to endorse the Strategy. It sets out goals for conservation of our biodiversity, and gives clear direction on how Government and communities can work together to reverse its decline. In practical terms this means maintaining and restoring a full range of our remaining natural habitats and ecosystems and viable populations of our native species.

My message in 2000 was that “biodiversity is everyone's business.” It extends into all our backyards and neighbourhoods and is affected by nearly all of our activities.

Eight years later, that message is just as relevant. There is greater awareness about biodiversity in our community. Among many initiatives, the development of “mainland islands” is especially exciting. These are habitats for our native bird life created by using special fence systems to exclude invasive animal pests. The “mainland islands” are also places for people to see and learn about biodiversity in their neighbourhoods.

Land-based industries make a much greater contribution to the New Zealand economy than they do to any other Western nation. Agriculture, forestry, and horticulture, including processing and manufacturing, contribute approximately 20 per cent of our GDP and 65 per cent of our export earnings. Our continuing success in primary production is directly linked to being able to manage and use our biodiversity sustainably. This means careful management of our soil and water resources,



and supporting biodiversity conservation alongside the working landscapes. It also requires continuing efforts to research and better understand the sustainability of these systems.

New Zealand faces other special challenges. Our isolation, the attribute which led to our unique and endemic biodiversity, means that we must also work to sell our goods in global markets which are paying increasing attention to the environmental impacts of factors such as long distance transport.

The age of globalisation, trade, and mass tourism, has also brought more biosecurity risks. We need to be more vigilant than ever in preventing incursions of invasive species which could threaten our indigenous species and habitats, and our primary industries.

Climate change is exerting its own set of challenges, bringing with it the risk of species loss in specialised ecosystems, and unwanted species which may thrive in warmer conditions. The frequency of more extreme weather can also threaten lands and communities. Clearly isolation will no longer shield even the most remote parts of our planet, like New Zealand.

These issues highlight the complexity of finding balance in our biodiversity-dependent economy; whether it concerns tourism revenues from visitors who come to see the unique forests which harbour the ancient species of our land; or managing the soils which sustain our agricultural exports.

Approaches to biodiversity in New Zealand have evolved a great deal over the years since the Rio Conference. We New Zealanders do regard our natural heritage as central to our identity, and know that sustaining it is critical for our long term economic wellbeing too.

For New Zealand to remain a viable and prosperous nation in the 21st century, we must become truly sustainable—or face long term disadvantage in our key markets. Sustainability and prosperity will go hand in hand.

For us, sustaining our biodiversity and aiming to be a truly sustainable nation is not only the right thing to do for our planet; it is also the smart thing to do for our future wellbeing. ♡

CBD COP 9—An Opportunity for the Global Community

Europe is highly urbanized and a densely populated part of the world and it faces major challenges in conserving its biodiversity. The European Union (EU) has committed itself to the ambitious target of putting a stop to the loss of biodiversity in Europe by 2010. On the International Day for Biological Diversity in May 2006, the European Commission adopted a Communication on “Halting the Loss of Biodiversity by 2010 and beyond”, together with a detailed action plan proposing concrete measures and outlining the responsibilities of EU institutions and Member States.

Since the adoption of the groundbreaking Birds Directive in 1979, protecting Europe’s wild birds, Europe has developed a number of specific laws to safeguard biodiversity. Our experience has shown that concerted international action can be highly effective. Much has been achieved. With Natura 2000 we have established the world’s most comprehensive network of protected areas, effectively protecting 20 per cent of the EU territory. But we also made substantial effort to integrate biodiversity into other EU policies such as on Agriculture, Maritime Affairs and Fisheries, Research and Development Cooperation. Taken together, the EU and its Member States are the world’s largest donors of biodiversity-related aid. We have funded numerous projects in partner countries to help them conserve their biodiversity and promote its sustainable use.

But despite these efforts, biodiversity loss continues in Europe and the rest of the world.

The time has come to take stock and re-double our efforts. Expectations are high for the Convention on Biological



Diversity’s (CBD) Ninth meeting of the Conference of the Parties (COP 9). We need to see ambitious decisions to substantially enhance implementation of the CBD.

Our hope is that tangible guidance will emerge for COP 9 and how to maximize co-benefits between climate change adaptation and mitigation measures on one hand, and biodiversity conservation and sustainable use on the other. The CBD should also develop guidance to ensure that the increased demand for bioenergy and biofuels does not have a negative impact on biodiversity and specific criteria need to be adopted to identify valuable marine areas.

The EU will maintain its proactive approach in international negotiations on access and benefit-sharing (ABS) by 2010, which we know is an issue of high interest to many developing countries.

Like good health, biodiversity is something we tend to take for granted, and sometimes only fully appreciate when it is no longer there. While every nation has national interests to defend, let us not forget that the CBD is a unique forum where government and citizens of the world meet with common interests: to keep our world living and breathing healthy, for our sake and especially for our grandchildren. ♡

Funding Global Nature Conservation – How much Value do we Place on Protecting the Natural Bases of Life?



How much value do we place on conserving nature's treasure trove in which we hope to discover important medicines in future? How can we assess the CO₂ absorption of bogs and thus their importance for climate protection? How much will it cost us to implement technology which imitates the natural flood protection provided by mountain forests and mangroves? And how much value do we place on the murmur of a creek, the fragrance of a flower meadow or the fresh air of a forest?

The complex web of interactions and functions of species and habitats, the economic value of biological diversity and the services it provides have thus far been neither comprehended nor acknowledged sufficiently. The diversity of nature and the services it offers have rather been taken for granted and exploited. This lack of appreciation for nature's economic value has led to a situation in which the conservation of biological diversity has frequently been neglected in the political decision-making process and the distribution of financial resources. This has often had dramatic impacts on the condition of nature.

Continued loss of biological diversity

Today biological diversity is disappearing worldwide at an unprecedented rate. Although many countermeasures are taken at national and international level, deforestation continues unabated. Every year a forest area of 13 million hectares is destroyed. According to the Food and Agriculture Organization of the United Nations' (FAO) most recent figures, today 77 per cent of fish stocks worldwide are being depleted or exploited to their biological limit. If present trends continue, commercial fishery will no longer be possible

in 2050. According to the data collected by the World Conservation Union IUCN more than 16,000 known species worldwide are currently threatened with extinction, including about 25 per cent of mammals, 33 per cent of amphibians and 12 per cent of bird species.

Consequences of biodiversity loss

Biological diversity is nature's database. In view of the depletion of finite resources and constant global population growth, biodiversity is a vital resource base of the future. We will have to draw increasingly on natural products and processes in order to cover our demand for resources. Today, these kinds of products and processes already account for 40 per cent of the global economy.

The diversity of nature provides the basis for our existence, giving us food, clean water, fertile soil, fuels and medicines. We find opportunities for recreation in natural surroundings. By pollinating plants, insects ensure that we can harvest our crops. The poor in rural areas in particular directly depend on the services of local ecosystems for their existence. According to the Millennium Ecosystem Assessment (MA), however, about two thirds of all life-sustaining functions are in decline, as they are severely affected by excessive use and the loss of biodiversity. The assessment clearly shows that the loss of biological diversity is a major barrier to fulfilling the UN's Millennium Development Goals.

The economy of biological diversity

Biological diversity is an indispensable basis for economic development. To give only a few examples: the gross product of fishery production is about US \$80 billion (not including aquaculture). 40–50 per cent of all medicines that exist worldwide

are of plant origin. Tourism in rural areas benefits from national parks and biosphere reserves which often contribute significantly to regional economic development. Calculating ecosystem services such as CO₂ absorption, drinking water supply, natural pest control, soil formation and erosion control is more complicated. The precise value of these services can usually only be determined when the ecosystem ensuring them can no longer fully provide them and supplementary technological measures have to be taken.

Despite these figures and known interrelations nature conservation is still largely considered an economic stumbling block. Efforts to preserve nature are seldom acknowledged as a basis for economic developments. And yet, that which is ecologically necessary has long been the economically sensible thing to do.

At present we are trying to make short-term economic profits through industrial fishing, forest clearance, monocultures in large-scale plantations and by expanding our infrastructure at an enormous speed. This strategy will cost us dearly in the long term. We can already see the consequences of our actions today. The loss of ecosystem services which is evident, for example, in the imminent collapse of fishery, crises in the pollination of crops, the increasingly costly supply of drinking water and major floods is already causing economic losses of several hundred billions of US dollars.

In order to ensure sustainable economic development on our planet, we have to give nature some space, we have to protect the web of life and nature's life-sustaining functions and preserve biological diversity's innovative potential for future resources. The capacity of natural systems to regenerate must serve as a benchmark for the intensity with which



we use nature. Waiving the use or reducing it to a sustainable level will cost money in the short term. However, investing today in the conservation and sustainable use of biological diversity, thus enabling us to make use of natural resources and services, would be much more economical than repairing or restoring it at great expense later. Every dollar that we spend now on the conservation of biological diversity and sustainable production methods will save us many times the amount in future.

In a nutshell: the conservation of biological diversity is the basis for maintaining a stable global economy and is indispensable for preserving our bases of life. Therefore we have to be willing to spend more, at both the national and international level.

Financing global biodiversity conservation

The CBD working programmes and guidelines contain a comprehensive and globally agreed framework for action to effectively implement the three aims of

instruments more effectively and, within this framework, increase existing funds. The conservation and sustainable use of biological diversity have to be taken into greater account in all relevant sectors. In addition, we have to develop innovative international funding instruments and implement them resolutely.

Increasing existing funding

On the national level we should thoroughly review the different possibilities to improve funding: can we increase the appropriations for the conservation and sustainable use of biodiversity in the national budget? Can we make more extensive use of tax instruments and incentives, or introduce new ones? Can we make increased use of equalisation payments for projects? Can we expand the instrument of payment for ecosystem services? Can we launch support programmes or increase their funding? Can we establish environmental foundations or provide existing ones with more funding?

There are similar challenges with regard to international measures. Accord-

"Debt for Nature Swaps" can be applied and whether the setting up of environmental foundations can be supported more strongly.

In addition, individuals and companies are ever more willing to contribute to the conservation of global biodiversity e.g. through donations. This is another potential we can use more effectively.

Integrating biodiversity

Sectors which are closely linked to economy such as agriculture, forestry, fishery, trade, tourism, transport, energy industry and research have a significant influence on biological diversity. They can and must make a vital contribution to the conservation and sustainable use of biodiversity. Compared to nature conservation, significantly higher funds of several billions are available to the above-mentioned sectors. It will be a question of investing an increasing share of these funds in securing a natural resource base in the long term. This calls for government to take action, but in particular for companies themselves to do something.

Innovative international funding mechanisms

Conserving biological diversity is the foundation for the long-term functioning of the global economy and for life on this planet—and is thus a global challenge. We should therefore also discuss in detail the introduction of global funding mechanisms and implement these where possible. Within the framework of the discussion on funding global goods, many concepts have already been developed and dealt with by different bodies. These proposals include introducing global taxes, charging fees for the use of global environmental goods (e.g. shipping or deep-sea fishing), making international compensation payments for waiving use, introducing cap and trade mechanisms and more strongly interlinking global funding instruments for climate protection.

There are still plenty of open questions and numerous political obstacles with regard to each of these instruments. Some mechanisms may be more realistic than others. With a view to the global challenges, we have to find the political will and courage to closely review the

"In order to ensure sustainable economic development on our planet, we have to give nature some space."

the Convention: the conservation and sustainable use of biological diversity and equitable benefit sharing. We do not lack the knowledge of how to halt the loss of biodiversity. However, there is a major deficit with regard to implementation. One significant reason for this is insufficient funding. At the World Summit in Johannesburg and in a large number of CBD agreements the need for increased funding was confirmed and we committed to making greater efforts. The loss of biological diversity, however, continues unabated. If we still want to reach the 2010 target, we have to be prepared to invest a great deal more in the conservation and sustainable use of biological diversity at both the national and international level.

In my opinion we have to follow a double strategy. We have to use existing in-

ing to the OECD, the share of spending for matters related to biodiversity in the total official development assistance has remained between 2.4 per cent and 2.8 per cent for many years. In light of the vital importance of biological diversity for economic development and the bases of human life, we must ask ourselves to what extent this share should be raised. With a view to the confirmed increase in development assistance to 0.7 per cent of gross national product, funding should at least be increased proportionately. I do feel, however, that the share as a whole has to be increased. This would of course have to be based on a general consensus, as the priorities of development cooperation are laid down jointly. In this context there should be a review of how the Global Environment Facility (GEF) can be better funded, how the instrument of



options for introducing global instruments and to agree on and implement specific instruments as soon as possible. The CBD should actively contribute to this discussion.

In Germany we are currently reviewing such an innovative instrument. We intend to publicly auction a share of the CO₂ permits allocated to Germany within the framework of the European Emissions Trading Scheme. With the revenues from this auction we want to fund, for example, international climate protection measures which also assist the conservation of biodiversity. We call on other countries to consider introducing this instrument as well. If several partners come together this

could give a new important impetus to the conservation of global biodiversity.

G8—Potsdam Initiative

During their last meeting in Potsdam the environment ministers of the G8 countries made biological diversity and climate protection key items on the agenda. Within the framework of the Potsdam Initiative they highlighted the special importance of biological diversity for the global economy and the well-being of humans and agreed to improve funding through existing instruments. In addition, they agreed to review the need for and possibilities of additional innovative mechanisms for funding the conservation and sustainable use of bio-

logical diversity combined with the eradication of poverty.

9th Meeting of the Conference of the Parties 2008 in Bonn

In May 2008 Germany will host the 9th Meeting of the Conference of the Parties to the Convention on Biological Diversity in Bonn. The aim of the conference is to significantly advance the implementation of the Convention. The issue of funding will play a decisive role here. I hope very much that we will succeed—two years before 2010—to make important decisions in Bonn and to give the urgently needed impetus. I will do my best to help achieve this goal. ❖

Gerda Verburg, *Minister of Agriculture, Nature and Food Quality, The Netherlands*

Do Businesses need Biodiversity?

Around the globe biodiversity is on the decline. Ecosystems are being thrown out of balance and species driven into extinction. As the world economy continues to grow, and production and consumption expand, it is the environment that pays the price, which ultimately threatens the welfare of us all. Solving this complex problem will require a concerted effort by all parties involved.

Without substantial involvement on the part of businesses, it will prove impossible to prevent further loss of biodiversity. This is why the Dutch Government has made cooperation with the private sector a pillar of its biodiversity policy. The government promotes private-public partnerships, while the Dutch business community is launching exciting new initiatives of its own. Here are just a few examples:

- The Group for Sustainable Tourism Initiatives, a long-standing partnership in which tour operators, NGOs, and the government have joined forces in an effort to reduce the ecological footprint left by Dutch tourists abroad

- Financial support for the development of instruments to help businesses analyze, reduce, and report on their own impact on biodiversity
- Partnerships with a number of countries in Asia within the framework of the European Union Action Plan for Forest Law Enforcement, Governance, and Trade (FLEGT), to take concrete steps towards reducing non-sustainable logging practices and the trade in tropical timber
- Intensive cooperation with the agricultural sector in the Netherlands towards sustainable practices, through the innovative use of soil biota and agrobiodiversity.

In 2002, the Strategic Plan for the Convention on Biological Diversity was adopted during the Sixth Meeting of the Conference of the Parties in The Hague. The Strategic Plan explicitly recognizes that integrating biodiversity objectives into economic activities is the key to developing sustainable solutions for the challenges we face. In response to the plan's



recommendations, a variety of initiatives have been introduced by business, government, and NGOs. They vary from local to global initiatives and from those involving one company to those mobilizing entire sectors. The central issue often boils down to identifying the incentives for businesses.

In my view, ecosystem goods and services themselves form a clear and direct incentive for many companies. For these businesses, protecting biodiversity is not a question of being forward-thinking or environmentally responsible but is simply a matter of self-preservation. A reliable supply of natural resources is crucial for them. So it is not just about what the business community can do for biodiversity, but

what biodiversity means for businesses.

The EU's Business and Biodiversity Conference held last November in Lisbon provided a fresh impulse to policy development. The European Commission then announced further support initiatives.

The business world is showing a growing willingness to work towards sustainable solutions for protecting biodiversity. Here are my thoughts on how to make these ambitions attainable:

First of all, we must raise awareness and make information available. Creating a shared understanding of the threats to biodiversity, and the ways the business community can help combat these threats, are crucial if we are to tackle them. Challenges can best be met by breaking them down into concrete issues, affected areas, and relevant industries. (The approach to combating overfishing is a good example, where solutions target particular species in specific areas.) And we must realize that for some businesses, attitudes towards biodiversity are primarily colored by negative considerations, that is, by the fear that measures taken to protect biodiversity will have a detrimental effect on business prospects. Companies need to know

what they can expect and which rules apply to them. They require clear information and open communication.

We must allow room for new markets and innovations. Fortunately, plenty of companies view preserving biodiversity as a challenge, not a threat. Many sectors, such as food manufacturers, the timber industry, and mining companies, rely directly on the continued availability of natural resources. Maintaining a license to operate in the future is a major motivating factor. To create true markets for ecosystem goods and services, the fact must be recognized that sustainable use of biodiversity requires sustained investments in its protection. Only then can we speak of one integral policy for all 3 P's—People, Planet and Profit.

Awareness, insight, and innovation do not just magically happen. We must create processes to encourage dialogue and cooperation, so that policy can be turned into concrete, workable plans. Examples already abound, such as the WWF's Round Tables for responsible soy and sustainable palm oil, as well as many activities carried out by the World Council on Business and Development. I firm-

ly believe that such activities can best be implemented by the private sector in close cooperation with NGOs. But government must be ready to assist where needed, laying the groundwork by providing expertise, passing legislation, and promoting public awareness.

There are no easy answers, and making fundamental changes cannot be achieved without some disappointments along the way. But we cannot let the fear of failure deter us. We must not shy away from the challenges ahead and allow ourselves to be sidetracked by still more research and more debate before getting down to business. We must dive in and adopt the attitude of learning by doing. We must not be afraid to experiment, to set up trial runs and pilot projects. Even short-term successes might just pave the way for long-term applications that bring us closer to the solutions our world needs.

The year 2010 is quickly approaching and we must ensure that we truly change our approach to biodiversity. In the words of the Dutch Prime Minister during the Sustainability Summit in Johannesburg in 2002, "We've done the talking, now let's start walking!" ☛



Marthinus van Schalkwyk, *Minister of Environmental Affairs and Tourism, South Africa*

Ensuring the Conservation and Sustainable Use of Biodiversity

In recent years we have seen the rise of "biodiversity" to global prominence as the detrimental impacts of human activity on the environment are increasingly being felt. At the G8 plus 5 (Brazil, China, India, Mexico and South Africa) meeting held in Potsdam in early 2007, the Ministers of Environment recognized the magnitude of global biodiversity loss and particularly its adverse effects on the realization of the Millennium Development Goals. Ministers reached a common agreement that a robust strategy for the conservation of biodiversity is required.

Biodiversity involves complex ecosystems, and the long-term economic and social costs of biodiversity loss have not yet been quantified. But what is clear, is that the loss of biodiversity is most acutely felt among the poor in developing countries. Ensuring the conservation and sustainable use of biodiversity is thus a global priority.

South Africa's Rich Biodiversity Heritage

South Africa is considered one of the most biologically diverse countries in the



world. It occupies only two per cent of the world's surface area but is home to nearly 10 per cent of the world's plants, seven per cent of the world's reptiles, birds and mammals and to approximately 24,000 plant species.

The Economics of Biodiversity in South Africa

There are a number of industries that depend on biodiversity. The IUCN estimates that about 40 per cent of world trade is based on biological products or processes such as agriculture, forestry, fisheries and certain pharmaceuticals. In South Africa terrestrial, inland water and marine ecosystems and their associated biodiversity are widely used for commercial, semi-commercial and subsistence purposes. The marine fisheries industry for example, incorporating commercial, recreational, and subsistence fishing, is valued at R4.5 billion per year. The flower industry in the Western Cape, which generates an estimated turnover of R150 million a year, supports many families in some of our poorest communities.

The Challenge to Finance Biodiversity Protection and Conservation

Biodiversity conservation is not cost-free and often have unintended, negative impacts on the poor. Financial support for biodiversity protection could include government support, the private sector, international and local non-governmental organizations (NGOs), and international organizations. However, donor funds and other traditional sources of funding are limited and under intense global demand. Thus, if countries have any hope of implementing the objectives of the Convention on Biological Diversity, signatory countries will have to seek other non-traditional sources of funding, especially from the private sector, to finance biological conservation.

The private sector can and should be more effectively involved in investing in the conservation of biological diversity. One key driver to encourage private sector involvement is through public-private partnerships. This involves creating a market for ecosystem goods and services. Such public-private partnerships may include implementing eco-tourism

initiatives, marine and game parks, creating markets for "green products" and setting up trust funds. Economic incentives are vital in enticing the private sector to invest in sometimes untested biodiversity ventures.

In the South African context, because of the complex economic situation, the driving factor behind any market related conservation strategies must be the alleviation of poverty and the creation of employment. Countries which face a mammoth task of poverty alleviation and development often place a major focus on economic strategies that stimulate growth and create employment opportunities with less attention being paid to environment or biodiversity conservation. But economic progress and biodiversity conservation are not mutually exclusive. Preserving biodiversity is an important prerequisite to achieving sustainable economic development.

Integrating Economic Tools and Communities into the Biodiversity Planning and Management Processes

South Africa's National Biodiversity Strategic Action Plan (NBSAP) was a first step in the attempt to integrate economic tools into the biodiversity planning and management processes. The development of the NBSAP received funding from the Global Environment Facility (GEF). Through the NBSAP, South Africa aims to address the single biggest threat to its biodiversity loss by 'mainstreaming' biodiversity throughout the economy. This will include the establishment of a policy framework for biodiversity management, an institutional framework for biodiversity management, integrated management of terrestrial and aquatic ecosystems, sustainable use of biological resources and the conservation of vulnerable areas. A number of activities are foreseen by the NBSAP that will, inter alia, promote cooperation among the relevant government departments and stakeholders during policy making. Provision has also been made to ensure that the impacts of sectors that transform land or consume large volumes of water are integrated with the economic policies and spatial land-use planning in order to reduce the social and econom-

ic costs associated with the loss of biodiversity. Already, 21 National Parks have been established, most notably the Table Mountain National Park, Addo Elephant Park and the Kruger National Park.

The Cape Action for People and the Environment (C.A.P.E), a GEF-funded project, is truly one of South Africa's successes in biodiversity conservation. This project is a collaborative initiative between, the government, private sector and community for the conservation of the Cape Floral Kingdom. While maintaining a strong focus on conservation, this project aims to unlock the economic potential of the Cape Floristic Region.

The GEF Small Grants Programme in South Africa is also a valuable source of funding for local / community-based biodiversity initiatives, involving the participation of NGOs, local communities, and other civil society organizations. The GEF Small Grants Programme (SGP) provides grants directly to community-based organizations (CBOs) and NGOs. Twelve projects in the biodiversity focal area have to date been funded by the SGP.

It is important that biodiversity conservation measures for low-income and middle-income countries also include measures to compensate for those, among the poor, whose livelihoods may be directly or indirectly dependent on the resource. Costs associated with biodiversity conservation will need to be carefully calculated and incorporated in national budgeting systems. For biodiversity conservation to be attractive to other sectors of the economy, and if biodiversity conservation is to be sustainable in developing countries, it is critical that it contributes to poverty alleviation and job creation.

In developing countries, it is critical that a process is embarked upon to quantify, where possible, the economic benefits of biodiversity. This will contribute to building the argument for conservation. Clear indicators demonstrating the value of conservation for national and economic development, are an important component of 'selling' a National Biodiversity Strategic Action Plan to other sectors in the economy. In South Africa, we are committed to securing long-term sustainable sources of funding for biodiversity protection and management. ♡

Biodiversity, Agriculture, Fisheries and Forestry: The Conservation and Sustainable Use of Biodiversity for Global Food Security

The mutual benefits between biodiversity and production in the agriculture, fisheries and forestry sectors provide humanity with opportunities for increasing food availability and security whilst maintaining a healthy, natural resources capital on which future generations can live. Understanding these linkages—often forgotten or underestimated—between agricultural and food production sectors and biodiversity is essential for achieving the goals of a universal right to food, global food security and sustainable rural development.

The Food and Agriculture Organization of the United Nations (FAO) placed these important linkages at the very core of its operations since its establishment in 1945 as reflected in its Constitution—adopted 62 years ago—requesting that the organization “shall promote and, where appropriate, shall recommend national and international action with respect to: *inter alia* the conservation of natural resources and the adoption of improved methods of agricultural production.”

FAO’s priorities and activities on the conservation and sustainable use of biological diversity range across the genetic, species and ecosystem levels and include technical assistance, knowledge management and policy development and implementation. This covers a comprehensive range of actions and impacts building on the mutual benefits between the production sectors and biodiversity and on FAO’s vast expertise in converting these benefits into concrete results aimed at achieving global food and nutritional security.

The comparative advantage of FAO addressing biodiversity within the framework of the agriculture, forestry and fisheries sectors has been widely recognized within the Convention on Biological Diversity (CBD), and the FAO Commission on Genetic Resources for Food and Ag-



riculture (CGRFA), by national governments and NGO’s as well as in other biodiversity/environmental frameworks. As a knowledge organization fostering information sharing and providing technical assistance to its Members, FAO is an active partner of the CBD, addressing, through its various for a, many different issues related to agricultural biodiversity, forest biodiversity, sustainable use, marine/coastal and inland biodiversity, access and benefit sharing, the global strategy for plant conservation and the 2010 Target initiatives to name just a few.

Genetic, species and ecosystem diversities from the basis of agriculture: for instance, at the genetic level, diversity in plants and animals is important for adaptation to a range of farming conditions and environmental stresses, such as extremes of temperature and drought and

associated impacts of climate change; or, at the species level, the diversity of organisms in ecosystems contributes towards important ecosystem functions such as nutrient cycling and pollination. In this context, agriculture has the capacity to enhance biodiversity by providing incentives for the preservation of a range of plant and animal populations essential to agricultural production such as pollinators and beneficial predators. The crucial role of farmers as key conservationists and knowledge managers of genetic, species and ecosystems diversity has always been recognized in FAO’s priorities and activities. It has also been recently reaffirmed in FAO’s 2007 State of Food and Agriculture (SOFA) under the theme of “Paying Farmers for Environmental Services”. The celebrations for the 2008 International Day for Biological Diversity (IBD) on “Biodiversity and



Agriculture” and the International Year of the Potato (IYP) are golden opportunities to discuss and raise awareness on this crucial role of farmers and on the potential mutual benefits between agriculture and biodiversity. The online Knowledge Forum of FAO and its extensive network of regional and sub-regional offices and country representatives are good vehicles to spread FAO’s expertise in these issues in the field.

The forestry sector also relies on forest diversity at the genetic, species and ecosystem levels; there have been cases where selective exploitation of the best trees/specimen has resulted in the deterioration of genetic resources, which then adversely affected the population density and the overall production of valuable timber. Thus, the forestry sector also provides incentives towards the conservation of diversity at different levels through

plication of the ecosystem approach in both fisheries and aquaculture. In addition, following the recommendations of the FAO Committee on Fisheries (COFI) at its 26th Session (2005), FAO is examining the role of the marine protected areas (MPAs) as a tool for fisheries management. A web site on this issue was launched in October 2007 in order to promote a better understanding of the contribution of MPAs to fisheries management and the elaboration of technical guidelines on the design, implementation and testing of MPAs.

Aquaculture is now the fastest growing food production sector. Biodiversity and the sustainable use of fishery genetic resources are the basis for continued production from aquaculture to help fisheries meet an ever growing demand for seafood. The ecosystems approach to aquaculture focuses attention on maintaining

tries, urbanization, transboundary pests and animal diseases (e.g. avian influenza, African swine fever) climate change and bioenergy. FAO is making these new challenges top priorities within its mandate by building on its broad technical and multidisciplinary expertise, fostering new partnerships and providing neutral for a for discussing these issues and finding tangible solutions to help member countries to achieve the World Food Summit target and Millennium Development Goals. In this context, and to address all these urgent issues, FAO is hosting in 2008 two High-Level Conferences the first on World Food Security and Challenges of Climate Change and Bioenergy” (FAO headquarters, Rome, Italy 3-5 June 2008) and the second on “Feeding the World in 2050” to be held later in the year. The conferences will see the participation of Heads of State and

“FAO’s mandate and operations, especially through joint activities with the Convention on Biological Diversity enable the Organizations to tackle these new challenges, build on the mutual benefits between the production sectors and biological diversity and manage technical and traditional knowledge so as to concurrently combat world hunger and poverty and decrease the loss of biodiversity.”

sustainable forest management practices. In this framework, regular monitoring and assessments are crucial to ensure the conservation of diversity: FAO carries out global forest resources assessments at five to ten year intervals within the framework of its Global Forest Resources Assessment (FRA) programme. The next global assessment (FRA 2010) will in addition to the traditional collection of country information through questionnaires, include an ambitious global remote sensing survey and provide the forest-related information needed to assess progress made towards the 2010 Biodiversity Target of the Convention on Biological Diversity (CBD).

The conservation and sustainable use of marine, coastal and inland water biodiversity are important components of the fisheries sectors. FAO builds on this crucial linkage in fostering the ap-

ecosystem functions around and within aquaculture facilities in order to minimize adverse impacts on native species and environments, and to help improve economic growth. The wild relatives of all farmed aquatic species are still present and must be maintained as they provide a valuable resource for future aquaculture growth.

The conservation and sustainable use of biodiversity are the basis of effective agriculture, fisheries and forestry sectors, which are the *sine qua non* to achieve the universal right to food and to realize the global food security in all of its four dimensions, i.e. food availability, access, utilization and stability. However, the 21st century is imposing new threats on biodiversity and its linkages with the agricultural and food production sectors; among these new concerns are population growth in developing coun-

Government, Nobel Peace Prize laureates, international figures, distinguished researchers and academics and representatives from private sector and civil society.

FAO’s mandate and operations, especially through joint activities with the Convention on Biological Diversity enable the Organizations to tackle these new challenges, build on the mutual benefits between the production sectors and biological diversity and manage technical and traditional knowledge so as to concurrently combat world hunger and poverty and decrease the loss of biodiversity. In other words, FAO is geared up to reconcile socio-economic, developmental and environmental concerns in the achievement of the universal right to food, global food and nutritional security and sustainable rural development in a healthy diverse planet. ❖



The Role of Biodiversity in Development: A World Bank Perspective

Three of the greatest challenges over the coming decades will be biodiversity loss, climate change, and water stress. These issues are interlinked and will undermine both the pace and quality of future development, especially in the poorest economies. As such they need to be addressed as part of the development agenda.

Currently the world's attention is focusing on climate change. Rising temperatures and changes in the frequency and intensity of climatic events will have a significant impact on the poorest countries. Climate change will also exacerbate the rate of biodiversity loss in some of Earth's most species-rich systems. The introduction of new, fast-growing, and adaptable species for agriculture, biofuels, mariculture, aquaculture, and reforestation is likely to further exacerbate the spread of invasive alien species, which are the second greatest threat to biodiversity.

The Millennium Ecosystem Assessment showed that over the past 50 years human activities have changed ecosystems more rapidly and extensively than at any comparable period in history. These changes have contributed to net development gains but with growing environmental costs: biodiversity loss, land degradation, and reduced access to water and natural resources. This loss of habitats and species is important because biodiversity provides the raw materials for livelihoods, sustenance, trade, medicines,

tourism, and industry for the world's poorest people.

How can the World Bank help? The Bank already supports a vast array of biodiversity initiatives, funding more than 500 projects in over 100 countries during the last 15 years¹. Many projects already promote sound natural resource management that could contribute to mitigation and adaptation by maintaining and restoring native ecosystems across altitudinal gradients. Projects such as those in the Amazon rainforests and the South African megareserves in the Cape Floral Kingdom maintain biodiversity in large landscapes and along ecological corridors. Meanwhile, Bank support for marine conservation on the MesoAmerican Barrier Reef and coral reef management

management and watershed protection.

Agricultural programs will need to take account of climate change and changing rainfall patterns with increased attention being paid to conserving agrobiodiversity in crop gene banks and traditional agricultural practices to maintain diversity of varieties and crops for food security. As a response to climate change, many countries are likely to invest in more infrastructure to address energy needs, irrigation, and flood control. Yet improved habitat management and rehabilitation of upland watersheds and wetlands can also help to regulate water flow and minimize floods, reducing vulnerability and improving water quality for downstream communities.

Adaptation will increasingly become part of the development agenda, focusing

“The Bank supports a vast array of biodiversity initiatives, funding more than 500 projects in over 100 countries during the last 15 years.”

in Indonesia recognize the important links between sources and sinks, with marine reserves protecting vital fish nurseries on which local communities depends.

New initiatives under the climate change agenda provide both opportunities and challenges for biodiversity conservation, especially since land and forest conversion contribute up to 20 percent of greenhouse gas emissions annually. Calls from the UN Climate Change Conference in Bali for greater action on avoided deforestation provide opportunities for rewarding communities that improve forest protection and management. The Forest Carbon Partnership Fund (FCPF) will afford opportunities to protect forests for multiple benefits: carbon sequestration, conservation of biologically-rich habitats, and greater community benefits from native forest

on enhanced protection and management of natural ecosystems, and more sustainable management of natural resources and agricultural crops. Biodiversity conservation can play an important, cost-effective, and efficient role in reducing vulnerability to climate change. Protected areas, biological corridors, and the natural habitats that they maintain can provide multiple benefits: carbon storage, water production, coastal protection, flood control, genebanks for crop relatives, and breeding grounds for wildlife and fisheries. We understand that many of these issues will be on the COP 9 agenda. As always, the World Bank stands ready and willing to help. ✎

¹ World Bank 2006 Mountains to Coral Reefs. The World Bank and Biodiversity



Monique Barbut, *CEO, Global Environment Facility (GEF)*

Achieving Multiple Global Environmental Benefits through Tropical Forest Management

Never has the challenge or opportunity to preserve the world's most unique and threatened areas been greater.

Over the centuries nearly half of the Earth's original forest cover has disappeared, cleared mostly during the past century, according to the Convention on Biological Diversity.

Ironically, it is the climate change issue which is now helping decision makers refocus on preserving forests, which can act as a carbon sink and help slow environmental damage both locally and globally.

We now have a unique chance to demonstrate the importance and relevance of biological diversity to the long-term health of the planet by linking forest biodiversity conservation and climate mitigation.

As the financial mechanism for both the biodiversity and climate conventions, one of our key roles is to catalyze partnerships between governments, civil society and private sector groups. Only together can we achieve what this convention set out to do by 2010: that is to dramatically reduce biodiversity loss at the global, regional and local levels as a way to alleviate poverty "to the benefit of all life on Earth."

One way we think that goal can be met is through our Sustainable Forest Management (SFM) program. It draws on the knowledge, experiences and finances from the GEF focal areas of biodiversity, land degradation and climate change to conserve, protect, and more effectively manage the world's forests.

Through SFM, the GEF is directing its resources in a more structured and focused way by addressing the major challenges to forest ecosystems in partnership with our agencies and client countries. The rationale for the SFM strategy is sim-

ple: forest ecosystems face risks and opportunities for a host of reasons. These include agriculture expansion, shifts in global commodity markets, infrastructure development, and energy production. As a result, making SFM a reality will require a more holistic, wide-reaching approach that cuts across these diverse interests and sectors and multilateral environmental agreements.

Of particular importance to the global community and the GEF are the global benefits being provided by the last remaining tropical forest wilderness areas. In addition to conserving global biodiversity, sustaining rural livelihoods, and providing spiritual and cultural havens for local and remote populations, these forest areas are among the largest and most important providers of ecosystem services, fundamental to maintaining our planet's long-term health and stability.

The window of opportunity to act in tropical forests is closing fast. As resources dwindle and the agricultural frontier expands globally, pressure on tropical forests is increasing. They have already been affected by large-scale degradation and fragmentation; and only 43 per cent of the extent of original forest cover remains. Preventing tropical deforestation is foundational to poverty reduction strategies, as these forest ecosystems ensure the long-term provision of environmental goods and services.

Tropical deforestation is also responsible for over 20 per cent of global CO₂ emissions. New research suggests that slowing tropical deforestation may play a much larger role in mitigating climate change than previously believed. Carbon emissions from tropical deforestation are now expected to increase atmospheric CO₂ concentration by between 29 and 129 ppm within 100 years, far above

prior estimates by the Intergovernmental Panel on Climate Change (IPCC). The fate of tropical forests is also intimately tied to the future of biodiversity, as these forests harbor over one half of all global biodiversity. Habitat loss threatens 74 per cent of endangered mammals, 44 per cent of endangered birds, 57 per cent of endangered amphibians, and 67 per cent of endangered reptiles.

In order to more effectively address the management needs in tropical forests, the GEF has created a complementary program as part of the Sustainable Forest Management Program, called the Tropical Forest Account (TFA), which will accelerate investments in three regions of large, intact tropical forest that have been defined as the primary targets for the Tropical Forest Account (Amazonia, Congo Basin, and New Guinea and Borneo). The countries within the target region house 54 per cent of tropical forest cover and contain 68 per cent of tropical forest carbon.

Each of these regions has over eight million hectares of wet broadleaf forest and is over 70 per cent intact. By choosing target regions of large, mostly intact, healthy tropical forest, the TFA is able to invest in a relatively low cost, proactive manner to prevent deforestation in countries where forest cover is high, rather than the relatively expensive, reactive option of reforestation in countries where forest has been lost or degraded on a large scale.

Investing in tropical forest wilderness areas is one way to achieve shared objectives of the global community: biodiversity conservation, climate mitigation, and sustainable forest management. I call on governments, business leaders and those in civil society to help us move this important initiative forward. ❧



Yvo de Boer, *Executive Secretary, United Nations Framework Convention on Climate Change (UNFCCC)*

The Rio Conventions Joint Liaison Group: An Example of UN Inter-Agency Cooperation

Nineteen ninety-two was in a sense a “big bang” year for international cooperation on the environment.

At the Earth Summit in Rio de Janeiro that year, three international environmental agreements were conceived: the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD). All three agreements are based on sustainable development principles. Because of this, their goals and activities are interlinked. By identifying synergies between these agreements, activities to respond to desertification, biodiversity loss and climate change can be mutually supportive and co-benefits could be further enhanced.

Close cooperation between the UNFCCC, CBD and UNCCD is steadily growing at the policy-development and implementation levels. Cooperation is al-

so made tangible through the Joint Liaison Group (JLG), which was established with the aim of enhancing coordination between the three Rio conventions and for exchanging relevant information.

The group has stressed the importance of collaboration, including among national focal points and respective secretariats of the conventions. It has also considered collaboration in cross-cutting areas like capacity building, outreach, technology transfer, observation and reporting. For example, since 2005 the secretariats have jointly been publishing a “Rio Conventions Calendar.”

During 2007, the JLG took an action-oriented approach and identified a set of activities that could be implemented during the coming years with an aim to further enhancing cooperation between the three secretariats. It also identified “adaptation” and “forests” as two areas where information exchange has proven to be an effective way



for cooperating and published two information notes on these topics. As new scientific knowledge emerges, it is becoming increasingly important to communicate information on the links between biodiversity, desertification and climate change to policy makers and local communities alike.

In the area of outreach, the group is considering to increase cooperation through the development of, for example, educational material and joint web-based tools to facilitate information sharing. The Rio Conventions Joint Liaison Group is a good example of what is already being done in terms of inter-agency cooperation. Over the next years, it will become increasingly important to foster cooperation between all UN agencies concerned with the challenges of climate change, biodiversity loss and desertification and to identify possible common responses. ❖



Luc Gnacadja, *Executive Secretary, United Nations Convention to Combat Desertification*

Land Degradation/ Desertification and Biodiversity: How Can We Generate Global Benefits?

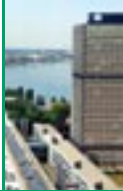
Biodiversity and land form the foundation upon which human civilization has been built. Biodiversity provides goods and services that underpin sustainable development in many important ways, thus contributing to poverty alleviation. Similarly, land has for centuries been the basis for the growth of civilizations and economic development, right from the early civilizations of the Ti-

gris and Mesopotamia, through those of the middle ages, to modern civilizations. Sustainable land management has therefore become paramount in addressing many of the challenges facing mankind today, including the protection of biological diversity.

Land and biodiversity are also intertwined in that, first, land constitutes the substrate upon which a large percentage

of the world’s biodiversity exists and without which it cannot subsist. Second, land and biodiversity compliment each other in supporting the ecosystem functions essential for life on Earth, such as the provision of fresh water and climate stability. Third, they are also intertwined in providing products such as food, medicines and raw materials.

The Ten-Year Strategic Plan and



framework to enhance the implementation of the United Nations Convention to Combat Desertification (UNCCD) (2008- 2018) adopted by Parties at the last ordinary session of the Conference of the Parties held in Madrid, Spain in September 2007, is in my opinion, the latest manifestation of the international community's resolve to address the challenge of land degradation and desertification as one of the major barriers in the fight against poverty in many parts of the globe.

The new UNCCD Strategy is geared towards providing a global framework to support the development and implementation of action programmes and policies to prevent, control and reverse desertification/land degradation and mitigate the effects of drought.

The main objectives of the Strategy include actions to improve both the living

heavily on the structural diversity of the vegetation cover and species richness including plants, animals and micro-organisms. The loss of biodiversity due to land degradation/desertification could therefore hinder efforts to improve the livelihoods of people.

Drylands cover about 40 per cent of the land surface of the globe and support over two billion people. While drylands species have developed a number of unique adaptations to dry conditions, CBD statistics show that more than 2,300 known species remain threatened or endangered. The excellent working collaboration between the CBD and the UNCCD should be pursued through various efforts to better manage the ecological functions of drylands and to the species and genes living in these ecosystems and thus to human welfare. Based on their respec-

ests, and the promotion of market-based and policy tools to capture the value of these services.

The need to collaborate closely in order to achieve the overall goal of realising the objectives of the CBD Strategic plan and progress towards the 2010 target and the UNCCD ten-year strategic plan should be supported by all partners. Both Conventions could significantly contribute to achieving the Millennium Development Goals, particularly for the eradication of poverty.

As acknowledged by Parties to the UNCCD and political leaders at the World Summit on Sustainable Development (WSSD), combating land degradation / desertification is both an environmental and a sustainable development issue. Developing countries are among the most affected and threats such as food insecurity have already forced people to aban-

“The excellent working collaboration between the CBD and the UNCCD should be pursued through various efforts to better manage the ecological functions of drylands and to the species and genes living in these ecosystems and thus to human welfare.”

conditions of affected populations and the conditions of affected ecosystems; to generate global benefits through effective implementation of the Convention, and to mobilize resources to support the implementation process through building effective partnerships between national and international actors.

A successful implementation of the UNCCD will no doubt contribute to the conservation and sustainable use of biodiversity. The new UNCCD Strategy also envisages that synergy between desertification/land degradation and, in particular, biodiversity conservation, should be effectively communicated among key constituencies and at all levels. This augurs well for the enhanced collaboration between the UNCCD and the Convention on Biological Diversity (CBD), particularly through the joint programme of work on the biodiversity of drylands.

In many developing countries efforts to increase primary productivity depend

tive goals and objectives, the two Conventions could jointly enhance support at the country level towards the development of the UNCCD National Action Programmes (NAPs) and the National Biodiversity Strategies and Action Plans. They could, in particular, coordinate their activities towards promoting sustainable agricultural production systems, including agricultural biodiversity; and the prevention and mitigation of threats to forest biological diversity in sub-humid lands.

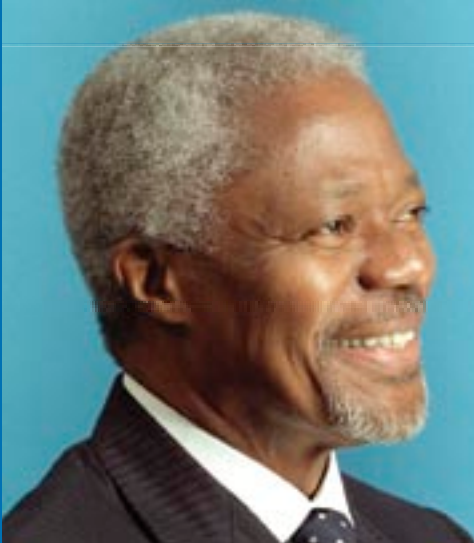
There is ample opportunity through synergies—which include reversing deforestation rates for indigenous forests, and the importance of employing new approaches in order to reverse these trends; managing forests as ecosystems through sustainable forest management, including by maintaining the environmental services (such as hydrological, soil stabilization, recreational, biodiversity, carbon sequestration services) provided by for-

don their lands. If urgent action is not taken now, hundreds of millions of people will soon be placed at risk of becoming environmental refugees.

Land degradation/desertification is changing the nature of development and continued stress on biophysical resources not only put at risk the possibility to provide for today's needs, it also jeopardises the capacity to hold in trust the world's ecosystem services for any future generations.

With the Strategy adopted, UNCCD is at a turning point and the international community as a whole should not miss out on this historical opportunity to resolutely create conditions conducive to the successful implementation of the Convention.

The challenges are therefore to build on the momentum created at the Madrid Conference of the Parties to the UNCCD. There is need to move swiftly, and to take strong and decisive actions. ❖



Kofi A. Annan, *Chair for a Green Revolution in Africa*

Biodiversity, Climate Change and a Green Revolution in Africa

African farmers and their partners are embarking on a historic effort to launch a new and uniquely African green revolution capable of alleviating the poverty and hunger that afflicts one-third of our continent. The Alliance for a Green Revolution in Africa (AGRA), whose Board I chair, is building partnerships that work to significantly boost farm productivity and incomes for poor small-scale farmers while safeguarding the environment. As we move forward, it is valuable to reflect upon the inherent strengths of African agriculture as well as on the challenges ahead.

We are fortunate today to be launching our green revolution with an endowment of cultivated and natural biodiversity that is unmatched anywhere in the world. African farmers have cultivated this diversity over countless generations, adapting hundreds of crop varieties to Africa's varied ecosystems. These varieties, or "land races," and their wild relatives serve as a critical foundation for bringing prosperity to small-scale farmers, for they contain the genetic traits farmers need to improve yield, fight crop diseases and pests, and cope with the intensifying impacts of climate change.

The biodiversity of Africa's crops and their wild crop relatives must be protected. This conservation is fundamental to a successful and sustainable African green revolution, just as sustainable agricultural development is critical to the well-being of African ecosystems and biodiversity. This is because the low performance of agriculture lies at the heart of Africa's low economic growth, which itself fuels

the destruction of ecosystems and the vital services they provide.

Although the majority of Africans farm, most small-scale farmers are unable to grow enough food to feed their families and communities. In the past five years alone, the number of underweight children in Africa has risen by about 12 percent. Furthermore, population growth rates continue to exceed the productive capacity of Africa's food systems. The population of sub-Saharan Africa is projected to grow from 600 million in 2000 to nearly a billion by 2020, with concomitant increases in hunger and malnutrition—unless farmers are able to substantially and sustainably increase farm yield.

Over the past several decades, what yield increases Africa's farmers have attained have come primarily through putting more land into production—rather than through producing greater yields on less land via improved seed and wise soil and water management. This has been disastrous for the environment and for African societies. Already, the rate of deforestation in Africa is 200 percent higher than the global average. Land denuded of trees is prone to erosion, further worsening the plight of poor farmers and accelerating the loss of biodiversity.

In what has become a vicious cycle, resource-poor farmers work a piece of land until the soil is mined of all nutrients, and then move on to clear another piece of forest or grassland for farming. When that land is no longer productive, it is again time to move on. This cycle is fueled by their basic need to put food on the table.

To end this cycle, Africa needs a green revolution that is both environmentally and economically sustainable. Farmers need access to improved, higher yielding varieties of their own indigenous crops. They need access to appropriate soil nutrients and to adequate water. They need the means to get their produce to market

and to earn a profit on their labor. Basic to all of this is the conservation of Africa's crop diversity, along with its soil and water resources—goals that are doubly important in an era of global environmental change.

Conserving Crop Genetic Diversity in an Era of Climate Change

Climate change—in the form of intensified and more frequent droughts—is already harming our agricultural production. The drought in the 1960s, 70s, and 80s led many people to starve in the Sahel and Horn of Africa. In the early 90s, drought in southern Africa was so severe that some areas experienced a loss of 80 percent of the normal rainfall, and grain production was 60 percent below normal. Swaziland in 2007 experienced its worst drought in 15 years, with maize production hitting historic lows, and other southern African nations have faced similar struggles due to lack of rainfall.

Scientists warn that climate change is likely to not only raise global temperature, but also to intensify weather extremes including deluge, drought, or storm and wind intensity. Altered temperature and rainfall patterns could create conditions conducive to the spread of plant diseases and pests.

African agriculture is predicted to be particularly vulnerable to climate change. A report last year by the United Nations Intergovernmental Panel on Climate Change (IPCC) predicts that climate change could cause crop yields in some African countries to fall by 50 percent by 2020—a disastrous scenario.

Given Africa's often poor soils and harsh climates, additional environmental stresses caused by climate change could easily compromise the productivity of farmers' land races, which are adapted to their local environments and often contain stress tolerance traits that need to be preserved. Conservation of this lo-



cal biodiversity is critical to surviving climate change in Africa.

Indeed, for all of these reasons, conservation of crop biodiversity has never been more important to African farmers, and to the hundreds of millions who depend upon their harvests. Every variety lost represents a loss of potential options for future agriculture.

Securing Africa's Crop Biodiversity

Earlier this year, while on a fact-finding mission to farms in Western Kenya, I met Crispus Oduori, who may be the only crop breeder in all of Africa working with finger millet. Finger millet is a wonderful cereal crop. It tastes good in a variety of foods, it grows in tough conditions, and it has nutritional qualities not found in other African staples. Although virtually unknown and unstudied outside of the continent, this uniquely African crop has enormous potential when it comes to improving the food security of all Africans—and it provides an excellent example of the need for conserving crop biodiversity.

At the same time, finger millet is one of Africa's "orphan" crops: indigenous to Africa and responsible for feeding millions of our people, yet largely overlooked by agricultural science.

Other such orphan crops include cassava, teff, and guinea sorghum. Their conservation is paramount.

Within the scope of a uniquely African green revolution, conservation can occur through a variety of means: in crop gene banks; through maintaining the natural habitats in which wild crop relatives continue to evolve; in farmers' fields; and through the very process of breeding new varieties.

A recent approach to crop breeding, known as the "farmer participatory" approach, focuses on first understanding what is already in the fields and using this knowledge to develop stronger, higher-yielding varieties. The challenge today is to preserve the sustainability of current farming systems and the genetic diversity of land races while developing varieties that boost yields and enable crops to adapt to rapidly changing environmental conditions.

Varieties that utilize land races have the potential to do this in a way that ex-

otic varieties cannot. This means that, of necessity, Africa's green revolution will be fundamentally different from Asia's. In Asia, the introduction of a few improved varieties of wheat and rice could spread across vast areas of irrigated land where farming conditions were fairly uniform. In Africa, small-scale farmers cultivate hill-sides, ridges, and valley bottoms that are largely un-terraced, non-irrigated, and non-mechanized. This calls for a much greater diversity of crops and crop varieties, as well as decentralized crop breeding programs where breeders and farmers work closely together to target the changes that will make a difference.

One example of farmer-participatory breeding is an AGRA project aimed at developing a high-yield version of guinea sorghum for farmers in West Africa. The project began with a survey of local farmers to understand the traits present in their varieties. Farmers are now testing more than 100 hybrids to assess yield and quality with the goal of boosting yield by as much as 30 percent.

By making use of natural biodiversity and conventional breeding techniques to develop improved, locally-adapted crop varieties, AGRA's crop breeding programs seek to preserve much of Africa's unique crop genomic diversity. However, to further guard against the loss of original land race varieties, concurrent with the development of new varieties, AGRA initiatives will support extensive seed collection and preservation initiatives, as well as fund local seed banks.

Ideally, local, national, regional, and international crop gene banks provide safe repositories for seeds, while also making that diversity available to farmers and breeders.

Crop varieties conserved in gene banks are in high demand. For example, plant breeders are probing gene banks in an intensive effort help East African farmers develop acceptable varieties of banana—a major source of nutrition and income—that are resistant to the Black Sigatoka fungus that has slashed production in some areas by 40 percent. In Kenya, scientists fighting a destructive maize beetle are developing beetle-resistant maize by crossing a local variety with a Caribbean variety stored in a gene

bank operated by the International Maize and Wheat Improvement Center.

However, the reality is that the quality of crop collections varies widely across Africa. A handful, including Ethiopia's Institute of Biodiversity Conservation, are in good condition. In fact, the Ethiopian institute, which maintains 65,000 samples of African crop, forest, and medicinal plants, was recently awarded UNESCO's Sultan Qaboos Prize for Environmental Preservation.

But many African countries lack the resources required to keep their seed collections viable and up-to-date. A simple power failure can shut down refrigeration and lead to the loss of irreplaceable seeds. At-risk collections need to be regenerated and expanded, and gene banks need the resources to ensure smooth functioning.

Fortunately, a growing international movement, led by groups like the Global Crop Diversity Trust, Bioversity International, the Consultative Group on International Agricultural Research, and the Food and Agriculture Organization of the United Nations, is addressing the impediments to establishing and maintaining gene banks in Africa and elsewhere in the developing world. AGRA looks forward to partnering on such efforts.

Sustainable Agriculture and Sustainable Growth

The long-standing problems afflicting African farmers and the potential for climate change to significantly worsen them have enormous implications for the fledgling international commitment—put forth at the 2002 World Summit on Sustainable Development—to "significantly reduce the loss of ecosystems, species, and habitats by 2010."

Simply put, an African green revolution that is environmentally and economically sustainable and that produces rapid and significant improvements for Africa's small-scale farmers is essential to the conservation of ecosystems, species, and habitats. ❖

Kofi A. Annan, former Secretary-General of the United Nations, is Chair of the Board of the Alliance for a Green Revolution in Africa. (www.agra-alliance.org)



Humans Leave Precious Little for Other Forms of Life

As a species, human beings have a major self-control problem. We humans are now so aggressively fishing, hunting, logging, and growing crops in all parts of the world that we are literally chasing other species off the planet. Our intense desire to take all that we can from nature leaves precious little for other forms of life.

In 1992, when the world's governments first promised to address man-made global warming, they also vowed to head off the human-induced extinction of other species. The Convention on Biological Diversity, agreed at the Rio Earth Summit, established that "biological diversity is a common concern of humanity." The signatories agreed to conserve biological diversity, by saving species and their habitats, and to use biological resources (for example forests) in a sustainable manner. In 2002, the treaty's signatories went further, committing to "a significant reduction in the current rate of biodiversity loss" by 2010.

Unfortunately, like so many other international agreements, the Convention on Biological Diversity remains essentially unknown, un-championed, and unfulfilled. That neglect is a human tragedy. For a very low cash outlay—and perhaps none at all on balance—we could conserve nature and thus protect the basis of our own lives and livelihoods. We kill other species not because we must, but because we are too negligent to do otherwise.

Consider a couple of notorious examples. Some rich countries, such as Spain, Portugal, Australia, and New Zealand, have fishing fleets that engage in so-called "bottom trawling." Bottom trawlers drag heavy nets over the ocean bottom, destroying magnificent, unexplored, and endangered marine species in the process. Complex and unique ecologies, most notably underground volcanoes known as seamounts, are ripped to shreds, because bottom trawling is the "low-cost" way to catch a few deep-sea

fish species. One of these species, orange roughy, has been caught commercially for only around a quarter-century, but already is being fished to the point of collapse.

Likewise, in many parts of the world, tropical rainforest is being cleared for pasture land and food crops. The result is massive loss of habitat and destruction of species, yielding a tiny economic benefit at a huge social cost. After cutting down a swath of rainforest, soils are often quickly leached of their nutrients so that they cannot sustain crops or nutritious grasses for livestock. As a result, the new pasture land or farmland is soon abandoned, with no prospect for regeneration of the original forest and its unique ecosystems.

Because these activities' costs are so high and their benefits so low, stopping them would be easy. Bottom trawling should simply be outlawed; it would be simple and inexpensive to compensate the fishing industry during a transition to other activities. Forest clearing, on the other hand, is probably best stopped by economic incentives, perhaps combined with regulatory limits. Simply restricting the practice of land clearing probably would not work, since farm families and communities would face a strong temptation to evade legal limits. On the other hand, financial incentives would probably succeed, because cutting down forest to create pastureland is not profitable enough to induce farmers to forego payments for protecting the land.

Many rainforest countries have united in recent years to suggest the establishment of a rainforest conservation fund by the rich countries, to pay impoverished small farmers a small amount of money to preserve the forest. A well-designed fund would slow or stop deforestation, preserve biodiversity, and reduce emissions of carbon dioxide the burning of cleared forests. At the same time, small farmers would receive a steady flow of

income, which they could use for micro-investments to improve their household's wealth, education, and health.

Aside from banning bottom trawling and establishing a global fund for avoided deforestation, we should designate a global network of protected marine areas, in which fishing, boating, polluting, dredging, drilling, and other damaging activities would be prohibited. Such areas not only permit the regeneration of species, but also provide ecological benefits that spill over to neighboring unprotected areas.

We also need a regular scientific process to present the world with the evidence on species abundance and extinction, just as we now have such a process for climate change. Politicians don't listen very well to individual scientists, but they are forced to listen when hundreds of scientists speak with a united voice.

Finally, the world should negotiate a new framework no later than 2010 to slow human-induced climate change. There can be little doubt that climate change poses one of the greatest risks to species' viability. As the planet warms, and rain and storm patterns change dramatically, many species will find themselves in climate zones that no longer support their survival. Some can migrate, but others (such as polar bears) are likely to be driven to extinction unless we take decisive action to head off climate change.

These measures are achievable by 2010. They are affordable, and in each case would ultimately deliver large net benefits. Most importantly, they would allow us to follow through on a global promise. It is too painful to believe that humanity would destroy millions of other species—and jeopardize our own future—in a fit of absent-mindedness. ❖

Jeffrey Sachs is a professor of economics and director of the Earth Institute at Columbia University. THE DAILY STAR publishes this commentary in collaboration with Project Syndicate (<http://www.project-syndicate.org/>)

A Global Genepool for Agricultural Biodiversity

The International Treaty on Plant Genetic Resources for Food and Agriculture and its Multilateral System for Access and Benefit-Sharing

The achievement of the 2010 Biodiversity Target is vital for the food security of present and future generations. Biodiversity for food and agriculture constitutes the basis of our livelihoods, providing food and shelter to people around the globe. For the production of our daily food—our breads, our curries, our tortillas, our couscous—we rely on the continued availability of plant genetic resources for food and agriculture.

But in the last century alone, more than three quarters of all known food crops slipped into extinction; irreversibly and irrecoverably lost. This means more than lost from landscapes and supermarket shelves. It means we have lost all of the unique attributes they had acquired over the millennia—their ability to survive hot summers or cold winters, to thrive in dry conditions or in areas prone to flood, to withstand pests or resist disease. It also means that in the future, farmers and food producers will have fewer options to deal with problems caused by a changing and unpredictable climate and still feed a growing population.

In response to this alarming situation and in recognition of the special nature of crop biodiversity, countries joined their forces in concluding the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty), which was adopted by the FAO Conference in 2001, entered into force in 2004 and has since been ratified by 116 countries. The Treaty's objectives are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use in harmony with the Convention for food security and sustainable agriculture.

When it comes to plant genetic resources for food and agriculture all countries in the world are interdependent.

Each relies largely on others for the genetic basis of its major food crops. Even foods that have been part of a culture for centuries often are indigenous to a region on the other side of the world. This global dispersal shows the generosity with which farmers and farming communities have always shared seeds and genetic materials with neighbours or through trade. As a result, we now live in a world in which not one country can be considered self sufficient in terms of being able to survive solely on crops indigenous within its borders.

The ground-breaking mechanism contained in the Treaty—the Multilateral System of Access and Benefit-Sharing - recognizes the sovereign rights of States over their own plant genetic resources for food and agriculture and at the same time establishes a System that is efficient, effective and transparent, both to facilitate access to genetic resources and to share, in a fair and equitable way, the benefits arising from the utilization of these resources.

The Multilateral System puts our most important crops—crops that together account for 80 per cent of the food we derive from plants—into an easily accessible global pool of genetic resources that is freely available to potential users so as to ensure global food security.

This truly innovative System has become operational at the beginning of 2007 and today comprises more than 600,000 unique varieties. Every week hundreds of transfers of plant genetic material take place within the Multilateral System, mounting up to more than 100,000 transfers just within the first year of operation.

A standardized contract adopted by the Treaty's Governing Body, the Standard Material Transfer Agreement (SMTA), facilitates the actual transfer of the materials under the Multilateral System.



The SMTA sets out the obligations of the provider and the recipient of the material, provides details of the benefit-sharing mechanism and administers the sharing of benefits. It thereby ensures legal certainty, low administrative costs, guaranteed benefit-sharing and practical consistency and reliability for users of the System.

Those who access genetic materials through the Multilateral System agree to share any benefits from their use through the established benefit-sharing mechanisms, including exchange of information, access to and transfer of technology, capacity building, and sharing of monetary and other benefits arising from commercialization.

The SMTA contains two fully operational options for the sharing of benefits arising from commercialization. The first option provides for the payment of 1.1 per cent of the sales of a commercialized product, which incorporates material accessed from the Multilateral System, whenever it is commercialized with restrictions for further research and breeding. In most cases, this benefit-sharing option is linked to the acquisition, use and exercise of certain intellectual property rights.

Under the second option, the user of the Multilateral System can opt for a crop-based payment system, whereby they pay at a lower rate, namely 0.5 per cent, on all their commercialized products of a particular crop, regardless of whether material from the Multilateral System is incorporated in those products, and regardless of whether or not they are free-

ly available to others for research and breeding through the exercise of intellectual property or other rights.

The funds thus acquired will form part of the Treaty's Funding Strategy and will flow primarily to farmers, especially in developing countries and countries with economies in transition, who conserve and sustainable use plant genetic re-

sources for food and agriculture.

The Treaty is now at a critical stage of implementation. It remains an indispensable instrument of public international law for regulating access to plant genetic resources for food and agriculture and benefit-sharing. The Treaty is the only binding international Access and Benefit-Sharing System already fully operational today. ❖



Guenter Mitlacher, *NGO Focal Point for CBD MOP 4/COP 9, NGO Forum for the Environment and Development/German League for Nature and Environment (DNR)*

100 Days to the UN Conference on Biological Diversity in Bonn

On 8 February there were 100 days to go before the 9th UN Conference of the Parties (COP) to the Convention on Biological Diversity (CBD), starting on 19 May 2008 in Bonn. Therefore, an international dialogue forum of Non-Governmental Organisations (NGOs) took place for the first time in history of the CBD.¹

The Berlin Museum of Natural History provided an attractive framework to this high-level dialogue forum. In the conference, 35 national and international experts and 180 participants from civil society, politics, administration, business, media, sciences and embassies came together to discuss important issues, major obstacles and progress that should be achieved at COP 9.

With this dialogue forum, NGOs wanted to stimulate the negotiation process of the upcoming conference in Bonn. To this end they made key demands on the Parties of the Convention:

1. Stop exploitation—protect and save the most important nature conservation areas now.

All remaining intact rainforest areas have to be put under protection now!

Protecting the last intact primary forests is an essential instrument for the conservation of biological diversity as well as climate protection.

The G8 + 5 states as main users of the forests' resources should enforce an immediate moratorium on the development and use of primeval forests!

The declaration of 40 per cent of marine surface on high sea as protected areas is a matter of utmost importance.

2. Richness obliged—secure funding of the future task “Conservation of Biodiversity“.

Protecting the future of our planet is not for free. Until 2015 the annual expenditures covering only protected areas have amounted to 30 billion EUROS worldwide. To this end, the developed world will have to take its responsibilities—they have the duty to provide the main load of funding. Less developed countries have to be supported: It is outrageous when users of biodiversity benefit of the world market while they do not engage in its protection.

3. Fair and equitable access for less developed countries—managing common goods of nature in a mutual and responsible way.

Since 1992, Access and Benefit-

Sharing forms a contractual issue. However, a regime it is not yet settled—companies and industrialised nations benefit from a situation which is not regulated by law. The blockade by certain parties has to be broken—a protocol on Access and Benefit-Sharing which also considers the rights of indigenous peoples has to be agreed on.

4. Stopping the agricultural industry—protecting and promoting agricultural diversity.

Genetic engineering in agriculture, genetic use restriction technology for plants and patented animals reduce the diversity of livestock and cultivated plants. Those technologies lacking self-control do not form part of a future-compliant agriculture conserving biodiversity.

Recalling the decision of the World Summit in Johannesburg in 2002 to significantly reduce the loss of biological diversity by 2010 and the EU Member States declaration to stop the loss by 2010 it is vital that CBD parties must be much more ambitious at COP 9! ❖

1. The Conference has been organized by the COP9 NGO Project of the German NGO Forum on Environment and Development and the German League for Nature and Environment (DNR). The event was funded by the Federal Agency for Nature Protection and the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU).

Gérald Tremblay, Maire de Montréal, Canada

Protection de la biodiversité : Les villes, au cœur du défi et de la solution

En tant que maire d'une ville qui a l'honneur d'être l'hôte du Secrétariat international de la Convention sur la Diversité Biologique, je suis heureux de partager avec vous quelques réflexions sur l'importance de l'action des villes dans la sauvegarde de la biodiversité.

À travers le monde, les populations vivent désormais majoritairement en milieu urbain. Or, l'appauvrissement de notre biodiversité est en grande partie lié à l'activité humaine. Un an après la Conférence internationale des villes sur la biodiversité à laquelle je prenais part, à Curitiba, il convient de réaffirmer le rôle essentiel qui revient aux villes dans le cadre de l'atteinte de l'Objectif 2010. La 9e Conféren-

ce des parties à la Convention sur la diversité biologique, qui s'amorce à Bonn, est pour moi l'occasion de rappeler que c'est par l'action des villes et à partir de la concertation entre elles et avec les autres acteurs que nous pourrions trouver des solutions à la perte de la diversité biologique particulièrement significative en milieu urbain. Nous devons nous donner les moyens d'atteindre les objectifs que nous nous sommes fixés. Pour cela, l'appui des gouvernements nationaux et des organisations internationales nous est indispensable.

Les échanges entre les villes sur les bonnes pratiques représentent un élément clé de la réussite. Au cours des dernières années, nous le savons, nos villes ont développé avec succès des moyens de défendre ou de promouvoir la biodiversité sur leur territoire. Par exemple, Montréal s'est doté d'une Politique de l'arbre, d'un Premier Plan stratégique de développement durable de la collectivité montréalaise, d'une Politique de protec-

tion et de mise en valeur des milieux naturels, sans oublier un apport particulier : la définition d'un écoterritoire au cœur du centre ville de Montréal.

Ces échanges doivent être établis et maintenus entre les associations de villes (UCLG, Métropolis, ICLEI/LAB, WMCCC, etc) avec la contribution et le support des organisations internationales et de leurs réseaux, (Secrétariat de la Convention sur la Diversité Biologique, UNESCO, UNEP et UNHabitat). C'est notre défi de travailler ensemble, en faisant appel à des moyens efficaces, pour atteindre le plus rapidement possible nos objectifs et d'éviter le dédoublement de nos efforts individuels. Une meilleure coordination entre les villes est nécessaire afin que nous puissions mettre en commun les expertises, les réseaux et les sources de financement. Elle représente l'une des conditions du succès. La réunion de Bonn nous donne l'occasion de renforcer les liens qui unissent nos villes pour nous permettre d'aller plus loin ensemble. ❖



Montreal Nagoya



Curitiba Bonn





Formulating a Biodiversity Strategy Together with Citizens

Mayor of Bonn, and we agreed to cooperate in sending a strong message on Cities and Biodiversity at the Mayors Conference, to be held prior to the High-Level Segment of the ninth meeting of the Conference of the Parties (COP 9) in Bonn in May 2008, and to work together to ensure the success of COP 9.

The year 2010 is an important year both for biodiversity and Nagoya. It is the target year for the 2010 Biodiversity Target adopted at COP 6 held in The Hague, and the International Year of Biodiversity, as declared by the UN General Assembly in December 2006. Furthermore, 2010 marks the 400th anniversary since the foundations of modern-day Nagoya were first established in 1610. Finally, the City of Nagoya is currently bidding to host COP 10 in Nagoya in this milestone year 2010.

It is said that people who live in urban

areas, which account for only two per cent of the Earth's total surface area, consume 75 per cent of all resources consumed by humankind. As community leaders, cities have a responsibility to raise public awareness of the importance of biodiversity. With this in mind, the City of Nagoya aims to formulate the "Nagoya Biodiversity Strategy" by 2010.

As part of this Biodiversity Strategy it will be important to demonstrate to Nagoya's 2.2 million citizens the importance of taking biodiversity issues and their individual lifestyles seriously, and of cherishing the blessings of life on Earth to hand over to future generations. By hosting COP 10 in Nagoya in 2010, I would like to create citizens movements to put these ideas into practice, and as a city, to make a contribution to the realization of the principles of the Convention on Biological Diversity. ♡

I attended the meeting on Cities and Biodiversity held in Curitiba, Brazil last March. At the meeting, together with the Mayor of Curitiba, Mr. Richa, the Mayor of Montreal, Mr. Tremblay, and other participants, I reconfirmed the vital importance of the involvement of local authorities in the protection and sustainable use of biodiversity.

Last July, I met with Ms. Dieckmann,



The Bonn Approach to Biodiversity: Local Action – Global Interaction

Germany's United Nations City is more than a host to COP 9. Beyond the city's traditional activities to protect biodiversity, Bonn has launched a campaign reaching out from the local to the global level—from awareness-raising and action to the international exchange of experience and political contribution. Children's and Youth Summits will render a substantial contribution of the young

generation. A Mayors Conference on Urban Biodiversity will lead to a "Bonn Call for Action" into the High Level Segment. The experience and potential of cities are bundled in Bonn, for example in the ICLEI-Local Action for Biodiversity Project, in an exhibition on "Cities and Biodiversity" or in the fruitful exchange within various stakeholder group meetings in Bonn on the occasion of COP 9 in May 2008. ♡

The Simple Tree Code

Sometimes I feel the world is steeped in a jungle of concepts that insist on not becoming ideas; of ideas that refuse to become actions; of action that do not know how to become works; and works that do not manage to move people or change their awareness.

The view from this dense jungle—that many confuse with what they call “forest view”—is, certainly, the number 1 enemy of any manager, public or private.

For people in this jungle, changes are urgent. Only those capable of reading the simple tree code are able move deeper into the forest seeking solutions for major environmental problems.

I dare say that, thanks to the ongoing practice in this type of Reading, Curitiba has been able to be the protagonist in many unprecedented and innovative environmental initiatives.

The forest view is that: *every city represents sudden breaks in biodiversity.* A true concept, certainly, but contradicted by real life at every moment, since the better part of the world population lives in cities and this is an irreversible fact.

Nonetheless, by reading the message on the trees, Curitiba endeavors to alleviate this break, by adopting good environmental practices.

It was thus that, among the green area splinters transformed in parks to provide leisure and meeting places for the population, the city ensured continuity for the life discourse of widely differing forms of life.

In tree lining for streets, squares, gardens, schools, Curitiba preserves the unequalled language and speech of its indigenous plants. The city created laws and tax incentives to ensure trees the right to dialog with people and many other types of life in the Private Reserve of Natural Municipal Heritage.

By hearing the speech of trees, Curitiba has opened its eyes to the need to preserve permeable soils in the urban landscape, to the concern in revitalizing its rivers, to the importance of the practice of selective collection and recycling

of garbage.

Talking to trees, the City Hall helped Curitibaanos to open their hearts and awareness to the environmental issue and to demand that, today, the idea of conservation of biodiversity permeates every intervention in the urban environment by public authorities.

The most important segments of organized society are united, working to make true the commitment to biodiversity that we, Mayors, signed in 2007 in the Curitiba Declaration.

And I have information that allow me to state: the re-introduction of indigenous flowers and ornamental plants into the Curitiba landscape has contributed to reconstituting biodiversity and to prevent several species from moving towards the threshold of extinction.

In the same way that birds, for instance, depend on trees to live—and to



ty's territory and its surroundings. And I also issue an alert: taking on this commitment is today an essential condition for all public administrators wishing to be recognized, in the future, as good administrators.

I am proud to say that, in the wake of a long tradition in good environmental practices, Curitiba is today a city that believes

“By hearing the speech of trees, Curitiba has opened its eyes to the need to preserve permeable soils in the urban landscape, environments indispensable for their existence.”

day Curitiba's trees are home to 364 different bird species!—good environmental practices depend on the awareness of citizens from every municipality of metropolitan regions in order to build an agenda that works to everyone's advantage.

Identify and reserve green areas in order to ensure their permanent conservation are propositions that should be at the top of management priority lists in every metropolis. In this way, today's citizens and those of tomorrow will have more beautiful landscapes to admire and different life forms will be able to count on environments indispensable for their existence.

Representing all Curitibaanos, I hereby reaffirm the commitment to support this type of initiative in the municipali-

in concepts that transform into ideas; ideas that are born to become actions; actions that become concrete works, touching people's hearts and changing their consciences.

This is the message that I wish to take to the COP 9, in Bonn. I know there is still much to be done in improving people's lives and ensure a balanced and sustainable environment for our descendents. The speech of trees is merely a language to decipher in achieving the forest solution for the Earth's environmental problems. But I invite you to understand it. You will have the opportunity to feel and to make feel the best of all certainties: the certainty that there still is hope and that improving living conditions on the planet depends exclusively on Man! ☘



“The international community has only two years left to reach the 2010 target of a significant reduction in the loss of biodiversity. The 9th Conference of the Parties to the Convention on Biological Diversity not only offers us an excellent opportunity but also places us under an obligation to do everything in our power to greatly advance protection of biodiversity throughout the world. This, no more and no less, is about safeguarding the natural resources we need for our own survival and ensuring that future generations, too, have an opportunity to develop.”

—*Angela Merkel, Chancellor, Germany*

“If we want to implement the goals of the Convention on Biodiversity and safeguard the natural basis of life for future generations, it is indispensable to involve all spheres of society, including, and in particular, businesses. Conserving biodiversity is not only an ethical commitment it is also an economically necessary and essential task.”

—*Gabriel Sigmar, Minister of Environment, Germany*

“Cities constitute an important factor for the successful achievement of the goals laid down by the Convention on Biological Diversity, and are in a position where they can lead people to become a driving force for change. As host of the UN Biodiversity Conference, the City of Bonn is honored to be a partner of the City and Biodiversity Initiative”

—*Bärbel Dieckmann, Mayor of Bonn, Germany*





Gincana 5

From COP 9 to 2010



Convention on
Biological Diversity



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