BIODIVERSITY LOSS ACCELERATING, UN TARGET WILL BE MISSED

The world will not achieve its agreed target to stem biodiversity loss by 2010, the International Year of Biodiversity, say experts in Cape Town, South Africa, meeting for a science conference on the variety, abundance and conservation of plants and animals.

The target was agreed at a Conference of the Parties to the United Nations Convention on Biological Diversity in April 2003. Some 123 world ministers committed to "achieve, by 2010, a significant reduction of the current rate of biodiversity loss at the local, national and regional levels, as a contribution to poverty alleviation and to the benefit of all life on Earth".

"We will certainly miss the target for reducing the rate of biodiversity loss by 2010 and therefore also miss the 2015 environmental targets within the UN Millennium Development Goals to improve health and livelihoods for the world's poorest and most vulnerable people," says conference speaker Georgina Mace of Imperial College, London.

"Species extinction rates are at least 100 times those in pre-human times and are expected to continue to increase," says Mace, vice-chair of the international biodiversity science DIVERSITAS programme, opening its four-day Open Science Conference with 600 experts from around the world.

"It is hard to imagine a more important priority than protecting the ecosystem services underpinned by biodiversity," says Mace, who develops criteria for listing species on the IUCN Red List of Threatened Species and coordinating biodiversity inputs to the Millennium Ecosystem Assessment. "Biodiversity is fundamental to humans having food, fuel, clean water and a habitable climate. Yet changes to ecosystems and losses of biodiversity have continued to accelerate."

All primates, all cetacean whales and dolphins, all big cats such as leopards and tigers, all bears, all elephants, and all rhinoceroses are at risk, as evidenced by their listing by the Convention on International Trade in Endangered Species (CITES).

In Cape Town, scientists will preview the release next year of a report by the UN Convention on Biological Biodiversity

called the Global Biodiversity Outlook, to include a major focus on catastrophic biodiversity "tipping points", which complicate predictions. Such thresholds, if breached, will make global change impacts difficult to control, and slow and expensive to reverse.

"A great deal of awareness-raising is still much needed with respect to the planetary threat posed by the loss of so many species. The focus of biodiversity science today, though, is evolving from describing problems to policy relevant problem solving," says Stanford University Professor Hal Mooney, who chairs DIVERSITAS. (*Source*: Environment News Service, 13 October 2009.)

CAN NTFPS HELP CONSERVE THE AMAZON?

Industrial-scale logging and resource exploitation continue to plague the South American rain forests, contributing to their systematic destruction. Today, indigenous inhabitants and other local residents of the rain forests and their surrounding areas, faced with the enormous pressures of the global economy, often find themselves in a crucible. Many of their opportunities for supporting themselves and their families financially involve logging or other large-scale operations that deplete and ultimately decimate the forests. In order to make even a marginal living, local people often find themselves forced to participate in the destruction of the very ecosystems that they live in and depend on. In fact, a recent study in the prestigious journal *Science* has shown that, while deforestation (in the Brazilian Amazon) generates some short-term benefits, it fails in the longer term to improve the quality of life or increase affluence. Thus, deforestation is NOT a critical step towards development.

Instead, a two-pronged approach of compensation for allowing forests to stand, coupled with development of sustainable activities that maintain biodiversity and ecosystem services will be of greater benefit. As the world seeks to mitigate global warming and carbon emissions, this latter approach will become more and more desirable and feasible.

At Amazon Fund, we believe that it is possible for people of the rain forest to gain a viable living from their environment in a way that is sustainable and healthy for the ecosystem. Some of the hope for the future of the forests, plants, animals, people and the knowledge of the Amazon lies in NTFPs.

The following are some key points for understanding the role of NTFPs in the Amazon.

- NTFPs collected in a renewable and sustainable manner

AMERICAN FARMING TECHNIQUES TRANSFERRED TO THE AMAZON TO BOOST PROFITS

The "added-value" techniques that small-scale American farmers often employ to boost their profits could transfer quite well to the Amazon. For example, at an average American farmers' market, organic garlic might sell for US$5/pound (0.45 kg), but a decorative garlic braid, simple in design and easy to produce quickly, will easily sell for US$15 or 20, multiplying the income for the same quantity of garlic substantially beyond the increase in labour. Similarly, with creativity and a little effort, some by-products from forest industries or just from the forest itself could be easily, quickly and profitably transformed into new products. For example, if seeds are being gathered for sale for plant propagation, those that are unlikely to sprout and that otherwise would be discarded could be used for jewellery or other handicrafts.

THEY EARN MORE THAN FOUR TIMES AS MUCH AS IN A STANDARD "FAIRTRADE" OPERATION

The Kallari cooperative of Ecuador is an excellent example of a highly successful indigenous-operated collective based around forest agriculture and NTFPs. In its 12 years of operation, Kallari has expanded from 50 to 850 families, who earn more than four times as much as they would in a standard "fairtrade" operation. At the same time, they are preserving their rain forest and some of the traditional Kichwa ways by relearning to make handicrafts that can then be sold. One of the hallmarks of Kallari's success is its flexibility and appropriate response to changing markets, demands and situations. Kallari currently integrates cocoa farming with other NTFP-derived products, such as jewellery made from forest seeds and fibres. The cooperative seems amenable to making changes over time depending on the market, the forest and the people. Kallari serves as one potential model for viable incorporation of NTFPs in efforts to preserve the rain forests.

- Sustainable harvesting more economically sound than a one-time timber harvest
- Higher profit if the people have an active role in the retail
- American farming techniques transferred to the Amazon to boost profits
- Ecotourism could provide more opportunities
- Forest products are only one piece of the puzzle
- NTFPs earn more than four times as much as in a standard "fairtrade" operation.

As we work to decrease the deforestation of South American rain forests, we see that NTFPs could play a valuable role in the solution. Amazon Fund seeks to support sustainable use of NTFPs in its mission to preserve the forests. (*Source*: Amazon Fund, 20 July 2009.)

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COUNTRIES THAT INVEST IN CONSERVATION WILL SEE HIGHER FINANCIAL RETURNS, ARGUES REPORT

Policy-makers who factor the planet's multitrillion dollar ecosystem services into their national and international investment strategies are likely to see far higher rates of return and stronger economic growth in the twenty-first century, says a new report issued by The Economics of Ecosystems and Biodiversity (TEEB). Citing a study from south Thailand on the conversion of mangroves into shrimp farms, the report explains how commercial shrimp farms, while generating returns of around US$1 220 per hectare by clearing mangrove forests, are totalling over US$12 000 of losses per hectare linked with wood and NWFPs, fisheries and coastal protection services.

The economic invisibility of ecosystems and biodiversity is increased by our dominant economic model, which is consumption-led, production-driven and GDP (gross domestic product)-measured. The multiple crises we are experiencing – fuel, food, finance and the economy – serve as reminders of the need for change. (*Source*: mongabay.com, 13 November 2009.)

PAN-EUROPEAN BIODIVERSITY CONFERENCE FOCUSED ON ECOSYSTEM SERVICES, CLIMATE CHANGE IMPACTS

The Fifth Intergovernmental Conference on Biodiversity in Europe was held from 22 to 24 September 2009, in Liège, Belgium. The conference discussed the state of Europe's biodiversity and post-2010 biodiversity targets for the Pan-European region. It resulted in a "Message from Liège," in which European conservation leaders list a range of priorities and recommendations to conserve ecosystem services, address the biodiversity impacts of climate change and integrate biodiversity into other sectors.

A new target was suggested, to "halt any further loss of species and habitats and, by 2025, restoration of degraded areas with an emphasis on links between biodiversity, ecosystem services, climate change and human well-being". (*Source*: International Institute for Sustainable Development (IISD), September 2009.)

FOREST FUNDING AGREEMENT

Australia, France, Japan, Norway, the United Kingdom and the United States of America have today collectively agreed in the context of an ambitious and comprehensive outcome in Copenhagen to dedicate US$3.5 billion as initial public finance towards slowing, halting and eventually reversing deforestation in developing countries.

A joint statement follows: "Actions to reduce emissions from forests can help to stabilize our climate, support livelihoods, provide biodiversity conservation and promote economic development. As part of an ambitious and comprehensive deal, we recognize the significant role of international public finance in supporting developing countries' efforts to slow, halt and eventually reverse deforestation. With this in mind, we collectively dedicate US$3.5 billion of fast-start climate change financing for REDD+ over the 2010 to 2012 period. We regard this as an initial investment in developing countries that put forward ambitious REDD+ plans and that achieve forest emission reductions according to their respective capabilities. We collectively commit to scaling up our finance thereafter in line with opportunities and the delivery of results. We invite other donors to join us in this effort to make early action on REDD+ a reality."

United Kingdom Prime Minister Gordon Brown said: "Deforestation accounts for almost a fifth of global emissions, and the forests of the rain forest nations provide a global service in soaking up the pollution of the world. Unless action is taken, these forests could be lost forever, impacting not only on the global climate but on the livelihoods of 90 percent of the 1.2 billion people living in extreme poverty who rely on forest resources for their survival". (*Source*: United Kingdom Government Press Notice, 16 December 2009.)

THE WORLD'S THREE MAJOR TROPICAL FOREST REGIONS AGREE ON COLLABORATION

The intergovernmental regional organizations representing the world's three largest tropical forest regions (the Association of Southeast Asian Nations [ASEAN], the Amazon Cooperation Treaty Organization [ACTO] and the Central Africa Forests Commission [COMIFAC]) agreed to work more closely to enhance South-South cooperation in conserving and sustainably managing their tropical forests and biodiversity.

The three regions – primarily the Amazon, the Congo and Borneo – collectively contain more than 80 percent of the world's tropical forests, and an estimated two-thirds of all terrestrial species. (*Source*: IISD, 20 July 2009.)

UN EXPERTS ADVANCE PLANS FOR WEST AFRICAN BIODIVERSITY CORRIDOR

A plan to develop a biodiversity corridor across the border between Côte d'Ivoire and Liberia will be the focus of discussions to be held in Abidjan next week in cooperation with the United Nations and other organizations.

Hosted by the Ivorian Minister of Environment, Water Resources and Forests, the meeting from 5 to 6 October is part of a transnational initiative launched by the UN-led Great Apes Survival Partnership (GRASP) and the Wild Chimpanzee Foundation (WCF).

Among other objectives, the meeting aims to advance the idea of a biodiversity corridor between two large blocks of forest in the Upper Guinean forest region: the Sapo National Park in Liberia and the Taï National Park in Côte d'Ivoire.

The area is home to the largest block of a relatively intact tropical rain forest in West Africa, and to more than a quarter of Africa's mammals, including 12 species of primates and important chimpanzee populations, as well as endemic species such as pygmy hippopotamuses and forest elephants.

The meeting will bring together representatives of various stakeholder groups from both countries, including senior government officials, forestry and environment ministries, major international donors, development agencies, private sector and research institutions, indigenous populations and NGOs. They will discuss environmental conservation goals that simultaneously enhance stability, human security, sustainable development and long-term economic benefits in a conflict-prone region.

The initiative is financed and supported by the European Union, the French Fund for the World Environment, STEWARD (Sustainable and Thriving Environments for West African Regional Development) and WCF. (*Source*: UN News Centre, 1 October 2009.)

WILDERNESS CONGRESS CALLS FOR LINKING CLIMATE AND BIODIVERSITY CRISES

Held from 6 to 13 November 2009, in Mérida, Mexico, the 9th World Wilderness Congress adopted the "Message from Mérida", an international call for action to integrate wilderness and biodiversity conservation into a global climate change strategy.

During the meeting, an agreement on wilderness conservation was concluded and signed by the governments of Mexico, Canada and the United States of America. (*Source*: Linkages Update, 20 November 2009.)

WOODY PLANTS ADAPTED TO PAST CLIMATE CHANGE MORE SLOWLY THAN HERBS

Can we predict which species will be most vulnerable to climate change by studying how they responded in the past? A new study of flowering plants provides a clue. An analysis of more than 5 000 plant species reveals that woody plants – such as trees and shrubs – adapted to past

climate change much more slowly than herbaceous plants. If the past is any indicator of the future, woody plants may have a harder time than other plants in keeping pace with global warming, researchers say.

In a new study, biologists at the National Evolutionary Synthesis Center in Durham, North Carolina and Yale University (United States of America) teamed up to find out how flowering plants adapted to new climates over the course of their evolution. By integrating previously published genealogies for several plant groups with temperature and rainfall data for each species, they were able to measure how fast each lineage filled new climate niches over time.

When they compared woody and herbaceous groups, they found that woody plants adapted to new climates two to ten times more slowly than herbs. "Woody plants eventually evolved to occupy about the same range of climates that herbaceous plants did, but woody plants took a lot longer to get there," said lead author Stephen Smith, a postdoctoral researcher at the National Evolutionary Synthesis Center.

The researchers trace the disparity to differences in generation time between the two groups. Longer-living plants such as trees and shrubs typically take longer to reach reproductive age than fast-growing herbaceous plants, they explain. "Some woody plants take many years to produce their first flower, whereas for herbs it could take just a couple of months," said coauthor Jeremy Beaulieu, a graduate student at Yale University.

By understanding how plants responded to climate change in the past, scientists may be better able to predict which groups will be hardest hit by global warming in the future. "Woody groups are obviously at a disadvantage as the climate changes," Beaulieu explained.

Does this mean that ecosystems dominated by trees – such as rain forests – will be more likely to disappear? Possibly. "If we look to the past for our clues, chances are trees will continue to respond much more slowly than herbs – as much as ten times more slowly," Smith said. "But if the rate of climate change is 100 times faster, then they could all be in trouble. The kind of change we're experiencing now is so unprecedented," he added. While this study focused on long-term change over the last 100 million years, most climate models predict significant warming in the next century, the researchers explained. "That time frame may be too quick for any plant," Beaulieu said. (*Source*: ScienceDaily, 27 September 2009.)

WORLD'S LAST GREAT FOREST UNDER THREAT

The world's last remaining "pristine" forest – the boreal forest across large stretches of the Russian Federation, Canada and other northern countries – is under increasing threat, a team of international researchers has found.

The researchers from the University of Adelaide in Australia, Memorial University of Newfoundland in Canada and the National University of Singapore have called for the urgent preservation of existing boreal forests in order to secure biodiversity and prevent the loss of this major global carbon sink.

The boreal forest comprises about one-third of the world's forested area and one-third of the world's stored carbon, covering a large proportion of the Russian Federation, Canada, Alaska and Scandinavia. To date, it has remained largely intact because of the typically sparse human populations in boreal regions. That is now changing, say researchers and coauthors, Associate Professor Corey Bradshaw (Environment Institute, University of Adelaide), Associate Professor Ian Warkentin (Memorial University) and Professor Navjot Sodhi (National University of Singapore). "Much world attention has focused on the loss and degradation of tropical forests over the past three decades, but now the boreal forest is poised to become the next Amazon," says Associate Professor Bradshaw.

"Historically, fire and insects have driven the natural dynamics of boreal ecosystems," says Associate Professor Warkentin. "But with rising demand for resources, human disturbances caused by logging, mining and urban development have increased in these forests during recent years, with extensive forest loss for some regions and others facing heavy fragmentation and exploitation."

The findings have been published online in *Trends in Ecology & Evolution* in a paper called "Urgent preservation of boreal carbon stocks and biodiversity". (*Source*: Science Daily, 25 August 2009.) ♣

We do not inherit the land from our ancestors; we borrow it from our children.

Native American proverb