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United Nations Development Programme

**ENVIRONMENT AND ENERGY**

**THE FUTURE WE WANT**

BIODIVERSITY AND ECOSYSTEMS—  
DRIVING SUSTAINABLE DEVELOPMENT

BIODIVERSITY AND ECOSYSTEMS GLOBAL FRAMEWORK 2012-2020



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Cover photo: Indonesian students plant mangrove trees in Jakarta Bay. Rehabilitating mangroves provides multiple benefits—conserving valuable biodiversity, promoting the fishing livelihoods of coastal communities, and protecting against the rising seas and stronger tropical storms that climate scientists predict. UNDP's biodiversity and ecosystems programme helps countries develop their capacity to secure multiple benefits—managing biodiversity and ecosystems effectively as the foundation for sustainable development.

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## ACRONYMS AND ABBREVIATIONS

ABS	Access and Benefit Sharing
AF	Adaptation Fund (GEF)
AHTEG	Ad Hoc Technical Expert Group for Biodiversity and Climate Change
BCtA	Business Call to Action
CBD	United Nations Convention on Biological Diversity
CBO	Community-based organization
CCA	Community Conserved Areas
CCD	United Nations Convention to Combat Desertification
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
COMPACT	GEF Small Grants Community Management of Protected Areas Conservation Programme
COP	Conference of the Parties
DDC	Drylands Development Centre
EBA	Ecosystem-based adaptation
EBM	Ecosystem-based mitigation
ECIS	Europe and Commonwealth of Independent States
ECLAC	Economic Commission for Latin America and the Caribbean
EEG	UNDP's Environment and Energy Group
FAO	Food and Agriculture Organization
GCF	Green Commodities Facility
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEF SGP	GEF Small Grants Programme
GIM	Growing Inclusive Markets
GSB	Growing Sustainable Business
Ha	Hectare
HDR	Human Development Report
ICCA	Indigenous and Community Conserved Areas
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IUCN	International Union for the Conservation of Nature
LAC	Latin America and the Caribbean
LDCF	Least Developed Countries Fund (GEF)
LULUCF	Land use, land-use change and forestry
MDGs	Millennium Development Goals
MEA	Multilateral Environment Agreement
NAP	National Action Programme
NBSAPs	National Biodiversity Strategic Action Plans
NGO	Non-governmental organization
NPIF	Nagoya Protocol Implementation Fund



ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
PA	Protected Area
PEI	Poverty and Environment Initiative
PES	Payment for Ecosystem Services
PoWPA	CBD Programme of Work on Protected Areas
Ramsar	Convention on Wetlands of International Importance
RBA	Regional Bureau for Africa
RBAP	Regional Bureau for Asia and Pacific
RBAS	Regional Bureau for Arab States
RBEC	Regional Bureau for Europe and Commonwealth of Independent States
RBLAC	Regional Bureau for Latin American and the Caribbean
REDD	Reducing emissions from deforestation and forest degradation in developing countries
REDD+	Reducing emissions from deforestation and forest degradation in developing countries, and forest conservation, sustainable forest management and enhancement of forest carbon stocks
Rio+20	UN Conference on Sustainable Development June 2012
SEEA	System of Economic and Environmental Accounting
SCCF	Special Climate Change Fund (GEF)
SDGs	Sustainable Development Goals
SFM	Sustainable Forest Management
SP1	Signature Programme 1
SP2	Signature Programme 2
SP3	Signature Programme 3
TEEB	The Economics of Ecosystems and Biodiversity
TRAC	Target for Resource Assignment from the Core
UN	United Nations
UNCSD	United Nations Conference on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-WCMC	UNEP World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNSO	United Nations Office to Combat Desertification and Drought
VCS	Verified Carbon Standard
WAVES	Wealth Accounting and Valuation of Ecosystem Services partnership
WWF	World Wide Fund for Nature



**Rebeca Grynspan**

**Associate Administrator, United Nations Development Programme**

Reversing biodiversity loss and ecosystem degradation is one of the most important challenges of our times. UNDP is committed to play its part in responding to this challenge, as is reflected in this Biodiversity and Ecosystems Global Framework which will underpin our operations in this field over the coming years.

The Framework seeks to harness the positive opportunities provided by biodiversity and natural ecosystems, as a catalyst for sustainable development. It recognizes the real value of biodiversity and ecosystems to society—in relation to secure livelihoods, food, water and health, enhanced resilience, conservation of threatened species and their habitats, and increased carbon storage and sequestration—and calls for innovation, drawing on the potential of nature, to achieve multiple development dividends.

With forty years of experience in the biodiversity and ecosystems field, working at the national level, UNDP is well placed to work with developing countries and countries in transition to achieve the Aichi Targets by 2020.

The Framework seeks to leverage the organization's status as a trusted partner of governments and its unique ability to link work on biodiversity and ecosystems with that on poverty reduction, governance, and crisis prevention through integrated programming.

As reflected in the Framework, UNDP's biodiversity and ecosystems work is organized in three new Signature Programmes: mainstreaming biodiversity into development; unlocking the potential of protected areas; and managing the impacts of climate change. It includes many inspiring examples of the biodiversity and ecosystems work that UNDP is doing in the field with valued partners, in particular the Global Environment Facility.

We look forward to continuing to work closely with our partners to deliver solutions to biodiversity and ecosystem loss, thereby helping countries chart a path towards sustainable development.





**Braulio Dias**  
**Executive Secretary of the Convention on Biological Diversity**

In an historic moment in 2010, at the tenth Conference of the Parties to the Convention on Biological Diversity in Nagoya, the nations of the world recognized the crucial role of biodiversity in ensuring sustainable development.

Governments affirmed the importance of implementing the Strategic Plan for Biodiversity 2011-2020, and its 20 Aichi Targets. In addition, a new legal instrument on access and benefit sharing for genetic resources—the Nagoya Protocol—was adopted, and Parties to the Convention were invited to ratify or accede to the Protocol so as to ensure its entry into force at the earliest possible opportunity.

Governments also recognized the need for resources and welcomed the strategy for resource mobilization in support of the achievement of the three objectives of the Convention on Biological Diversity, including the commitment to substantially increase resources from all sources in support of biodiversity.

Two years on, and our focus is ‘implementation’. It is vital that the United Nations, governments and all development partners come together to work to achieve the Aichi Targets for 2020.

If biodiversity loss and ecosystem degradation is to be halted, we must promote the mainstreaming of biodiversity into the development agenda—promoting biodiversity not only as a problem to be solved, but rather as an opportunity to help achieve broader social and economic goals.

In this context, I welcome the important steps taken by UNDP to prepare a Biodiversity and Ecosystems Global Framework for the period 2012-2020 in response to the CBD Strategic Plan for Biodiversity and the Aichi Targets.

UNDP, as the United Nations’ development agency, is uniquely equipped to provide effective support to governments in translating global agreements on biodiversity and ecosystems into national development priorities and solutions.

The CBD looks forward to working closely with UNDP to meet the Aichi Targets, building on many years of valuable and productive cooperation.



### **Biodiversity Loss Threatens Sustainable Development**

Human survival and wellbeing depend upon biodiversity and healthy ecosystems, and the goods and services they provide. Yet, in recent decades, the world has experienced unprecedented biodiversity loss and ecosystem degradation, undermining the very foundations of life on Earth.

Rapid demographic changes, overconsumption, and the use of technologies that damage the environment, now combined with climate change, are pushing our planet to its limits. Severe shortages of food, water and energy are predicted as human pressures on the planet's climatic, geophysical, atmospheric and ecological processes approach a level at which abrupt global environmental change is likely to occur. Scientists believe we are beginning to transgress the planetary boundaries within which societies have been sustained for the past 10,000 years.<sup>a</sup>

The loss of ecosystems and biodiversity is a challenge for us all, but it is a particular challenge for the world's poor. Many of the 1.2 billion people living in severe poverty, on less than US\$ 1 a day, depend directly on nature for food, clean water, fuel, medicine, shelter, and reduced vulnerability to climate change and natural disasters. Dependent on ecosystem goods and services for their livelihoods and subsistence, the poor stand to suffer disproportionately from potentially catastrophic changes to fragile ecosystems in coming decades. Ultimately, however, all societies stand to lose.<sup>b</sup>

### **Shifting the Paradigm: Development Opportunities Through Biodiversity and Ecosystems**

Despite concerted efforts by the international community and by national governments, biodiversity loss and degradation of ecosystems continue. To reverse this trend, there is a need to intensify efforts and find new ways of financing biodiversity and ecosystem management. This UNDP Biodiversity and Ecosystems Global Framework is a response to the need to scale up action and make it more effective. In addition, the Framework represents a shift in focus towards the positive opportunities provided by biodiversity and natural ecosystems, in terms of harnessing their potential for sustainable development.

Important building blocks have been put in place for this new approach, including a new global emphasis on valuing biodiversity and ecosystem goods and services. This takes their value into account in decision-making and works to influence markets to reflect that value. A clear global agenda has been agreed regarding biodiversity conservation and sustainable ecosystem management, which includes the Aichi Targets for 2020 agreed at the Convention on Biological Diversity (CBD) Conference of the Parties in 2010, related agreements under the UN Framework Convention on Climate Change (UNFCCC), the 10-year Strategy of the UN Convention to Combat Desertification (CCD) and a number of other multilateral environmental agreements, including the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The United Nations Conference on Environment and Development (known as Rio+20) held in June 2012 reinvigorated global commitments to achieve the Millennium Development Goals and marked a transition towards action on establishing new Sustainable Development Goals (SDGs). Priorities for the SDGs are likely to include:

- Ensuring equitable and inclusive economic growth to reduce poverty and improve environmental sustainability;
- Intertwining the economic, social, and environmental strands of sustainable development and managing trade-offs;
- Recognizing the importance of the sustainable use of biodiversity and ecosystems for sustainable and equitable development.



- Promoting resilience by strengthening social protection systems, implementing disaster and crisis risk reduction measures, enhancing societies' capacity to adapt to climate change, and maintaining the functioning of natural ecosystems; and
- Emphasizing issues relating to food security, water management, access to modern energy services, management of oceans, sustainable urbanization, and disaster preparedness.

There are enormous development opportunities related to unlocking the full potential of natural ecosystems—conserving, maintaining and restoring them; promoting their sustainable use; and equitably sharing the benefits arising from them. Within this context, many opportunities exist for innovation—for example, through biomimicry, in which technological innovations imitate time-tested strategies observed in nature; through new financing mechanisms such as payments for watershed services; through seed banks to secure the genetic diversity of wild species of domesticated crops for resilience to a changing climate; or through use of genetic resources for high-tech industrial applications, while channelling benefits to developing countries and communities. In influencing development paths, governments often face the need to make trade-offs, and part of UNDP's role is to provide balanced policy advice on how to manage these trade-offs, drawing on biodiversity and natural ecosystems to achieve multiple development dividends.

### **Biodiversity and Ecosystems for Development: UNDP's Role**

UNDP's position in the UN system uniquely equips the organization to provide effective support to governments in translating global agreements on biodiversity and ecosystems into national priorities and solutions. Over the past four decades UNDP has helped countries to maintain and restore their natural capital and unlock its full potential to support human development. Integrated programming at the country level through UN Country Teams sets common goals, and links work on biodiversity and ecosystems with issues of poverty, governance and crisis prevention, thereby maximizing the effectiveness of this work. This cross-sectoral approach supports synergies across the four focus areas and the delivery of multiple benefits, and promotes resilience, sustainability and inclusive growth.

UNDP's coordination role in the UN system, its multifaceted mandate and its extensive presence at the national level are combined with a participatory approach that ensures national ownership of country programmes of work, and hands-on action to develop the capacity of government and civil society partners. UNDP's proven ability to generate cutting-edge ideas and new methods to advance sustainable human development make it a key player in shaping the global development agenda. At the national level, the organization's track record of strong performance through decades of successful delivery on biodiversity and ecosystems management makes it a trusted partner of governments and other stakeholders.

The portfolio of biodiversity and ecosystems projects managed by UNDP is the largest in the UN system. UNDP currently works in 146 countries on biodiversity, managing 512 projects on ecosystems and biodiversity with US\$ 1.5 billion in funding from the Global Environment Facility (GEF) and other sources, and co-financing of US\$ 3.5 billion. The ecosystems and biodiversity programme has been successful in: helping to establish over 2,000 protected areas in 85 countries, covering 272 million hectares; undertaking interventions in production sectors and development planning in 38 countries, covering 244 million hectares; and promoting ecosystem-based adaptation to or mitigation of climate change in 71 countries. In addition to this portfolio, UNDP also implements two programmes focused at the local level—the GEF Small Grants Programme and the Equator Initiative partnership—that are working with indigenous peoples and local communities on groundbreaking work in biodiversity conservation and sustainable development. UNDP's programme has generated a globally recognized body of knowledge on best practices in ecosystems and biodiversity management.



### Repositioning UNDP's Biodiversity and Ecosystems Work

This Framework reconceptualizes UNDP's ecosystems and biodiversity work, positioning the organization to respond to the challenges of the next decade. These challenges include advancing the post-2015 development agenda emerging after the Rio+20 Summit, with the aim of promoting inclusivity, resilience and sustainability, and also implementing the global Aichi Targets set out in the CBD Strategic Plan. UNDP's work on biodiversity and ecosystems is now organized into three Signature Programmes, each addressing a distinct area in which UNDP is providing technical and policy advice to governments, and support in accessing finance, to achieve measurable results—building on proven best practices and encouraging innovation for development.

The three Signature Programmes contribute to a newly defined overall strategic objective to **“Maintain and enhance the goods and services provided by biodiversity and ecosystems in order to secure livelihoods, food, water and health, enhance resilience, conserve threatened species and their habitats, and increase carbon storage and sequestration.”**

**Signature Programme 1** is “Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing.”

UNDP is committed to stepping up efforts to integrate biodiversity and ecosystem objectives into multiple sectors across land- and seascapes including key productive sectors, such as fisheries, agriculture and forestry; promote more sustainable production practices that maintain land and water ecosystem services; and conserve remaining biodiversity. UNDP will support countries in stimulating job creation by helping ‘biodiversity-friendly’ producers to access new markets, and by promoting nature-based tourism initiatives that generate income for local communities. Sustainable harvesting livelihoods will be supported, as well as access and benefit sharing agreements on genetic resources. Work will be undertaken to integrate biodiversity objectives into production sectors such as fisheries, agriculture and forestry—promoting sustainable land management approaches to protect the ecosystem services needed for food and water security. Participation in development planning and poverty reduction strategies will aim to ensure that the real value of biodiversity and ecosystems is taken into account.

**Signature Programme 2** is “Unlocking the potential of protected areas, including indigenous and community conserved areas, to conserve biodiversity while contributing towards sustainable development.”

Recognizing the potential of protected areas to support human development, UNDP works to unlock the potential of terrestrial and marine protected area systems so they are effectively managed and sustainably financed, and contribute to sustainable development. Countries are assisted to establish governance frameworks that strategically expand and strengthen the management and financing of protected areas at the systems level, promoting co-management with local communities to maximize effectiveness and economic benefits. This work will strengthen the rights of these communities to sustainable use of resources, while developing their capacity to fulfill their responsibilities. UNDP will also support indigenous and community conserved areas, promoting secure land tenure and effective management. Expansion of protected area systems will increase tourism revenues, business development and job opportunities. Sustainable financing will be promoted so that protected areas can continue to generate inclusive growth, while protecting threatened species and eco-regions, acting as a buffer against climate change-related disasters, and maintaining a supply of clean water. New marine and coastal protected areas will help maintain and rebuild the fish stocks on which the livelihoods of coastal communities depend.



**Signature Programme 3** is “Managing and rehabilitating ecosystems for adaptation to and mitigation of climate change.”

UNDP will support countries in incorporating nature-based solutions into their strategies for adapting to and mitigating the negative impacts of climate change. Ecosystem-based adaptation will help vulnerable communities increase their resilience, and the resilience of the ecosystems on which they depend. Large-scale rehabilitation projects will create work opportunities. In addition, expanding and connecting protected areas to conserve intact forests, wetlands, mangroves and coral reefs will provide a natural buffer for vulnerable communities against disasters intensified by climate change. Conservation and rehabilitation of natural ecosystems will also contribute to reducing greenhouse gas emissions. Countries will be supported in developing capacity and accessing new sources of finance to maintain and restore forests, peatlands, wetlands, tidal marshes, mangroves and seagrass beds that function as effective carbon sinks. Communities will be supported in securing land tenure and accessing new sources of finance to manage ecosystems effectively, using both traditional knowledge and innovative techniques.

### **Removing Barriers to Effective Management of Biodiversity and Ecosystems**

UNDP’s work in providing technical and policy advice to countries and helping them access financing is designed to address barriers to effective country action in managing biodiversity and ecosystem services. These barriers relate to two key factors that influence how effective societies are in managing their biodiversity and ecosystems to foster sustainable development.

The first barrier is the absence of an effective governance system for making and implementing decisions on matters affecting biodiversity and ecosystems. Decisions on the use of land and natural resources are often taken by owners and users of resources based on their own short-term interests, without taking into account the loss of biodiversity and ecosystem functioning that will result, and the impacts on society as a whole. Weak governance often means that there is no effective system in place for planning and guiding such land and resource use. Other aspects of weak governance can include limited accountability, corruption, highly centralized decision-making, unequal application of rules, and encroachments on communal lands. Finally, the



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absence of effective governance can also allow space for the illegal extraction of natural resources, for example through illegal logging, or poaching of endangered species for commercial gain.

The second barrier is the failure of markets to reflect the real value of ecosystem goods and services, or the real costs of losing them. Because of this, while a forested piece of land may provide enormous value to society, the owner of the land may not be able to realize significant economic profits without cutting down the trees and possibly converting the land, for example, to agriculture. Natural resources that appear to be free and owned by no one may be so overutilized that nobody can benefit from them anymore, as happens when fish stocks are overexploited to the point of collapse. Methods of accounting for national wealth usually fail to reflect the value of biodiversity and ecosystem services to the economy, and the potential cost of replacing these if they are lost or damaged, for example if a water purification plant needs to be built to replace the services provided by a destroyed wetland.

This Framework outlines how UNDP's efforts will be stepped up to work with countries to incorporate the economic, social and cultural values of biodiversity and ecosystem goods and services into economic policies, national and sectoral development plans and the activities of productive sectors, and to ensure that the costs of their protection, management and restoration are fully embedded in financial frameworks. The Framework outlines how UNDP will address existing barriers through two key approaches that underpin each Signature Programme:

- Developing capacity at the individual, institutional and systemic levels to identify and implement new options for effective democratic governance for biodiversity and ecosystem management; and
- Assisting countries to identify, access, combine and sequence environmental finance for biodiversity and ecosystem management, mobilize pro-poor markets for ecosystem goods and services, and generate sustainable livelihoods.

As the lead agency within the United Nations system helping countries to develop capacity for biodiversity and ecosystem management, UNDP's success depends on effective strategic partnerships across a wide range of organizations, sectors and disciplines. Key partnerships are needed with: programme countries; international, national and local action groups; local communities; the biodiversity-related Conventions, in particular the CBD and CCD; the UNFCCC; the GEF and other donor partners; development organizations including other UN organizations and development banks; research and science organizations; and the private sector. Partnership with the GEF—the designated financing mechanism for the Rio Conventions and other multilateral agreements, and the single largest source of finance for biodiversity and ecosystem management globally—is central. UNDP has played and will continue to play a key role within the GEF partnership—now expanded to encompass 10 GEF agencies—in spearheading biodiversity and ecosystem management around the world.

This Framework positions UNDP to help countries respond to the exciting opportunities of the 21st century. Whereas the last century brought an awakening to the dangers of environmental degradation along with the beginnings of a response, the new century has brought an understanding of the real value to society provided by the diversity of life forms and the ecosystems in which they thrive. The Framework outlines this value—in relation to secure livelihoods, food, water and health, enhanced resilience, preservation of threatened species and their habitats, and increased carbon storage and sequestration. UNDP will continue to support innovation in techniques that countries can use to harness the potential of their natural capital, protecting the environment while also improving living standards. This Framework places UNDP at the heart of international efforts to support the effective integration of biodiversity and ecosystems management with development, climate change risk management and poverty reduction.



## A. UNDP's Work on Biodiversity and Ecosystems

### *UNDP's Comparative Advantage*

As critical biodiversity and natural ecosystems are rapidly being lost or degraded, the world faces a major challenge to conserve biodiversity and manage ecosystems effectively so that they can serve as the basis for future sustainable development. The United Nations Development Programme (UNDP) has a unique position within the United Nations system that equips it to provide support to governments in responding to this challenge, translating global agreements into national frameworks and actions.

Established in 1966, UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. Working on the ground in 177 countries and territories, UNDP supports countries in building and sharing solutions to challenges in four focus areas: poverty reduction and achievement of the Millennium Development Goals (MDGs); democratic governance; crisis prevention and recovery; and environment and sustainable development. UNDP's proven ability to generate cutting-edge ideas and new approaches to advance sustainable human development make it a key player in shaping the global development agenda.

UNDP plays an important dual role. On the one hand, it supports the coordination, efficiency and effectiveness of the UN system as a whole at the country level. On the other, UNDP provides policy and technical support by addressing multi-sectoral development challenges and assisting countries in developing national and local capacities that will help them achieve sustainable human development and the MDGs. In UNDP country offices, the UNDP Resident Representative also often serves as the Resident Coordinator of development activities for the United Nations system as a whole. Through such coordination, UNDP seeks to ensure the most effective use of UN and international aid resources.

Over the past 40 years, UNDP has helped countries maintain and restore their natural capital and unlock its full potential to support human development. Given UNDP's coordination role and its multifaceted mandate, the organization is able to add value to its biodiversity and ecosystems work by integrating it with other focus areas such as poverty and governance. UNDP uses a participatory approach that ensures both national ownership of country programmes of work and 'hands-on' capacity development for government and civil society partners. The organization's track record of strong performance through decades of successful delivery on biodiversity and ecosystems management makes it a trusted partner of governments and other stakeholders.

UNDP's overarching organizational assets are well documented and can be summarized as follows:

- A strong, universal presence at the country level combined with a proven ability to respond to the development priorities of individual countries;
- A relationship of trust built up with governments;
- The important role of coordination in the UN development system;
- The ability to generate cutting-edge ideas and new approaches to advance sustainable human development;
- Legitimacy, enabling the organization to convene and facilitate dialogue on challenging, cross-cutting issues and complex trade-offs at the global, regional and national levels;



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- A participatory approach, facilitating meaningful involvement in programming and policy-influencing by a broad range of stakeholders;
- A broad-based development mandate combined with a unique governance component; and
- A strong commitment to developing capacity within countries for sustaining development—through stronger institutions, delivery capability and domestic financing.

UNDP helps its partners reach their sustainable development goals by offering policy and programme options that promote inclusivity, resilience and sustainability. Inclusivity enables all people to have equitable access, rights and opportunities to shape and benefit from development, whether social, economic or political. Resilience helps individuals and societies withstand shocks and protect their development gains even in times of crisis. Sustainability ensures that the synergies between economic growth, social development and environmental protection are maximized to support lasting change. Together, these three elements—inclusivity, resilience and sustainability—constitute the cornerstones of human development.

### *Cross-sectoral Approach to Sustainable Development*

UNDP works to empower people, while helping nations to become more resilient, from Least Developed Countries to Middle Income Countries. UNDP's policy and programming work covers environment and sustainable development, poverty reduction, democratic governance, and crisis prevention and recovery—focus areas that are inextricably linked. Within the focus area of environment and sustainable development, UNDP supports countries in achieving conservation and sustainable use of biodiversity and effective management of ecosystems—both of which are essential to UNDP's mission of helping to reduce poverty and promote inclusive growth that is sustainable and resilient.

There are links across the focus areas at the global level, for example, through the joint UNDP and UN Environment Programme Poverty and Environment Initiative. Integrated programming is carried out at the country level, through UN Country Teams working with partners to set common goals across the focus areas. Biodiversity and ecosystems work is considered together with and linked to issues of poverty, governance and crisis prevention, maximizing the effectiveness of this work at the national and sub-national levels. This cross-sectoral approach enables synergy and the delivery of multiple benefits, adding value to UNDP's work on biodiversity and ecosystems and ensuring that it remains people centred.

An example of integration between biodiversity work and poverty issues at the country level can be seen in Botswana, where UNDP supports government and civil society partners in mapping poverty levels across the country, a process which revealed that 30 percent of deep poverty was found in wildland areas. A study undertaken through a project on 'Building Local Capacity for Sustainable Use of Biodiversity in the Okavango Delta', was able to add important information about the real incomes of communities in these areas, and found that through access to natural resources, the Okavango Delta households were able to supplement their incomes in kind to an extent equivalent to about US\$ 1,500 per year (in 2005 terms). The ecosystem goods and services available to these 60,000 people included access to fish, fresh water, reeds and grass for thatching and basket-making, fertile grazing for cattle in the floodplain, and nutrients for river-bed farming. Some also worked for cash in the nature tourism industry. Communities in this region demonstrated the





important contribution of natural ecosystems to social resilience in 1996 in Ngamiland, following the mass culling of 320,000 cattle infected by lung disease. Affected communities were able to turn to fishing and other uses of natural resources to sustain their livelihoods. The 2005 UNDP study concluded that diversity of natural resources provides a cushion against disasters, and that a loss of this diversity represents a huge risk factor for poor people. The project worked to avoid over-exploitation of groundwater resources, warning that if natural resources in the area were not managed for the long term, but exploited or polluted for short-term gain, they would not be able to support economic development on the scale needed to relieve poverty.



### Reducing Carbon Emissions from Peatlands and Generating Livelihoods

Destruction and degradation of peatlands can lead to the release of greenhouse gases, with a global warming potential that is equivalent to 13-30 percent of the global emissions from fossil fuel combustion. UNDP supported GEF financed projects in South-East Asia and Europe have been working to reduce carbon emissions from peatlands and increase the resilience of economies and communities. In Malaysia, for example, a UNDP-managed project has worked to improve forest condition and restore peat swamps in Sarawak State, Sabah, and South East Pahang. In Europe and CIS, UNDP has invested in peatland restoration projects in Belarus, Lithuania, Ukraine, Slovakia, and Bosnia and Herzegovina. In Belarus, UNDP has assisted the Ministry of Forestry in 'greening' the peat mining industry, by restoring 28,207 hectares of degraded peatlands, raising water levels at 15 sites and changing government policies. UNDP-managed work on peatland restoration in Belarus delivered multiple dividends with regard to climate change mitigation (by preventing annual emissions of about 270,000 tonnes of carbon dioxide), sustainable livelihoods (by enabling better conditions for picking cranberries and fishing, and saving local authorities up to US\$ 1 million in fire-fighting operations); and biodiversity conservation.



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Haiti provides an example of integration between UNDP's work on crisis prevention and recovery on the one hand, and biodiversity and ecosystems management on the other. Institutional and social resilience are being rebuilt following the disastrous earthquakes of 2010, with UNDP supporting capacity building for political and judicial institutions, as well as disaster preparedness. A total of 300,000 jobs have been created through 'cash-for-work' schemes involving communities in clearing debris and rebuilding houses. The work being undertaken through a set of UNDP supported biodiversity and ecosystems projects designed to rebuild ecosystem resilience is critical to reducing the vulnerability of communities to future earthquakes, hurricanes and landslides—for example, managing the few remaining watersheds where forests are still intact, reforesting large areas, and creating 'green jobs' implementing water and soil conservation measures.

An example of integrating biodiversity, governance and poverty reduction issues can be seen in Southern Sudan, where UNDP provided support for the January 2011 referendum on self-determination that brought to an end two decades of civil war in Sudan and resulted in the overwhelming vote for South Sudan's independence. The newly established government has shown a commitment to protecting wildlife areas and expanding tourism as a source of revenue and foreign exchange. A UNDP supported Global Environment Facility (GEF) financed project is working with the Ministry of Wildlife Conservation and Tourism to expand Boma Park from 20,000 km<sup>2</sup> to 68,000 km<sup>2</sup>, bringing the whole area under effective management and securing long-term financing. The park project will provide much-needed infrastructure and capacity development, and also create ranger jobs for demobilized soldiers.

As the UN's lead agency for sustainable development, UNDP is well placed to support countries in integrating biodiversity and ecosystems management into development processes. With its on-the-ground presence, local knowledge, and ability to promote the important interface between local, national, and global communities and scientific research, UNDP assists developing countries in removing barriers to effective biodiversity and ecosystems management based on their national priorities and strategies, and improving system capacity through integrated policy development, institutional strengthening, and non-governmental and community participation.

In its biodiversity and ecosystems portfolio, UNDP draws on its extensive technical expertise and experience in successfully supporting inter-country and country-level programming for biodiversity management. Over many years, UNDP has built up an important and unique body of knowledge and experience that is being used to guide future interventions in the biodiversity and ecosystems field, and which has closely informed the development of this Biodiversity and Ecosystems Global Framework.

### *UNDP's Biodiversity and Ecosystems Portfolio—A Short History*

UNDP's mandate and involvement in environmental issues has its origins in the early years of the organization's existence (from 1966 onwards), reflecting the central importance of the environment and biodiversity for human development and poverty reduction. Within its broad focus on environment and energy, UNDP has a long and significant history of investment in the field of biodiversity and ecosystem services.

Early environmental conservation and natural resource management initiatives concentrated on improving water and land management, for example, by restoring soil and water quality. Through isolated but pioneering country projects, UNDP helped national governments build their institutional capacity to conserve biodiversity and manage resources sustainably. For example, in 1973, UNDP created the Office



to Combat Desertification and Drought (UNSO)—later known as the UNDP Drylands Development Centre (DDC)—in response to the drought in the Sahel region. DDC promotes sound dryland management and development as well as drought preparedness and mitigation.

By the 1980s, UNDP's country-level environmental focus had evolved to integrate biodiversity conservation into mainstream development processes, with an emphasis on production sector projects, national and sub-national policy and planning, institutional development, and disaster risk reduction. Importantly, core UNDP funds (also referred to as regular resources or Target for Resource Assignment from the Core (TRAC) funds) were allocated to projects that mainstreamed biodiversity conservation into economic sectors and supported the development of National Environment Plans.

The Earth Summit held in Rio de Janeiro in 1992 (formally, the UN Conference on Environment and Development) significantly strengthened UNDP's role in global environmental governance. The agency's work to prepare for the summit<sup>1</sup> helped ensure that Agenda 21 and the Rio Conventions included a strong development focus, and Agenda 21 specifically emphasized the crucial role of UNDP in the implementation of international policy on sustainable development. UNDP was designated as the lead agency for organizing UN system efforts to build capacity for implementing the Rio agreements through local, national and regional actions.

Following the Earth Summit, UNDP began a transition process to integrate environmental work into its approach to development and operational activities. What is now called the Environment and Energy Group (EEG) was set up in 1993 to support UNDP's growing environment portfolio and provide technical support to country offices and key partners.

UNDP was one of the original partners in the launch of the Global Environment Facility (GEF) in 1991, together with the World Bank Group and the United Nations Environment Programme. The GEF—now expanded to include 10 agencies—is the designated financing mechanism for the Convention on Biological Diversity (CBD) and the Convention to Combat Desertification (CCD)—and is the single largest source of finance for biodiversity and ecosystem management globally. UNDP continues to play a key role within the GEF partnership in spearheading biodiversity and ecosystem management. In addition to assisting countries in developing capacity within public institutions to manage biodiversity and ecosystems, UNDP has also played a critical role within the GEF family in supporting the biodiversity and ecosystems work of local non-government and civil society organizations, managing the GEF Small Grants Programme on behalf of the GEF for this purpose.

Today, UNDP's new Mid-Term Strategy strongly emphasizes sustainable management of natural resources and climate change responses:

*Mid-Term Priority: Green Low Emissions Climate Resilient Development Strategies are prepared or under development and related institutional frameworks functional, to push forward on low carbon growth paths, enable mitigation of, and adaptation to, climate change and secure sustainable management of natural resources.*

**In the mid 1960s, UNDP provided support to set up the College of African Wildlife Management in Tanzania, which has become a leading institution in Africa for technical and professional training in wildlife and tourism management. The college has trained over 5,000 wildlife managers from 52 countries worldwide and is set to open a second centre in Cameroon. UNDP also worked with the Government of India and the Food and Agriculture Organization (FAO) in 1982 to set up the Wildlife Institute of India, now a global leader in biodiversity management.**



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Major Expected Action: *Ecosystems-based approaches to climate change and sustainable development.*

UNDP's Biodiversity and Ecosystems Global Framework responds directly to these new institutional priorities and positions UNDP at the forefront of international efforts to halt biodiversity loss.

### *Global Results Snapshot—Results and Achievements of UNDP's Biodiversity and Ecosystems Portfolio*

The UNDP Biodiversity and Ecosystems Team works through UNDP's network of Country Offices, supporting 146 countries to conserve and sustainably use biodiversity, and to secure the ecosystem services that are vital to climate change adaptation and mitigation, as well as to sustainable development and poverty alleviation efforts. Over a period of 40 years, UNDP has assisted nations in a wide range of biodiversity conservation and management projects that have been carried out over a total surface area that, if combined, would be greater than the total area of India plus Indonesia.

Over the last two decades, UNDP has become the largest single operational and financial UN player in the field of environmental sustainability—and more specifically in the area of biodiversity management. The size of the biodiversity and ecosystems portfolio currently managed by UNDP is US\$ 1.5 billion, with US\$ 3.5 billion in co-financing leveraged from a wide range of partners, bringing the current total to US\$ 5 billion. A number of other UNDP environment programmes also contribute to biodiversity management, including the joint Poverty and Environment Initiative with UNEP, the UN-REDD Programme, and initiatives of the Nairobi-based Drylands Development Centre.

Key achievements:

- Production practices in a range of sectors, including agriculture, fisheries, forestry, tourism and extractive industries, are being modified to conserve biodiversity while driving economic growth and generating jobs. This work has been carried out over an area of over 300 million hectares, resulting in improved production practices across this area.
- A cumulative area of 272 million hectares of protected areas—which includes marine protected areas, terrestrial protected areas and indigenous and community conservation areas—has benefited from UNDP-managed investment. UNDP has worked to strengthen the governance of protected areas, and the effectiveness of authorities in managing them, as part of local sustainable development efforts.
- UNDP's support for sustainable forest management (SFM) has yielded important results. SFM measures supported by UNDP are now under way in forest landscapes across the world, affecting a total area of 1.1 million hectares. In addition, UNDP's US\$ 700 million Adaptation portfolio helps national governments secure adaptation finance and develop and implement adaptation strategies, including elements that are ecosystem based. This involves projects funded through the Adaptation Fund and through the GEF's Special Priority on Adaptation, the Least Developed Countries Fund, and the Special Climate Change Fund.
- The GEF Small Grants Programme, implemented by UNDP, has been working with communities around the world for almost two decades to combat the most critical environmental problems. The programme has successfully demonstrated that supporting communities in their efforts to achieve more sustainable livelihoods is not only possible, but extremely important for achieving global environmental benefits. In addition, the Equator Initiative, which was launched in 2002, seeks to recognize the success of local and



indigenous initiatives; create opportunities and platforms for sharing knowledge and good practices; inform policies to foster an enabling environment for local and indigenous community action; and develop the capacity of local and indigenous initiatives to scale up their impact.



### **Building Local Capacity for Conservation and Sustainable Use of Biodiversity in Botswana: Achievements in the Tourism Sector**

The Okavango Delta is a globally important wetland ecosystem in northern Botswana, and the largest Ramsar site in the world. Tourism constitutes the largest economic activity, with annual revenues in excess of US\$ 200 million. While the ecological integrity of this wetland remains largely intact, gradually rising anthropogenic pressures—including impacts of the tourism sector—are slowly eroding that integrity. In response, the UNDP supported GEF financed project ‘Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta’ has worked with the government to create governance systems, institutions, economic incentives and techniques to ensure that production practices within the Okavango Delta in three sectors—including tourism—are compatible with sound biodiversity management objectives. In partnership with the Botswana Tourism Board, the project developed a Botswana Ecotourism Certification Programme, which established ecotourism standards and a voluntary certification system now being implemented by the tourism board. These certification standards are among the most rigorous in the world and could eventually become compulsory. The project also developed an investment tracking tool allowing the private sector to measure their contributions to environmental conservation. In addition, the project initiated interventions to bring parties together to resolve conflicts over access to resources and opportunities in the Okavango Delta. Specifically, the project helped to establish Joint Management Committees to support implementation of sustainable fisheries and ‘veld’ product use, thereby reducing the likelihood of future conflicts.



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## B. Biodiversity and Ecosystems: Driving Sustainable Development

Human survival and wellbeing depend upon biodiversity and healthy ecosystems, and the goods and services they provide. Yet, in recent decades, the world has experienced unprecedented biodiversity loss and ecosystem degradation, undermining the very foundations of life on Earth.

Rapid demographic changes, overconsumption, and the use of technologies that damage the environment, now combined with climate change, are pushing our planet to its limits. Severe shortages of food, water and energy are predicted as human pressure on the planet's climatic, geophysical, atmospheric and ecological processes approach a level at which abrupt global environmental change is likely to occur. Scientists believe we are beginning to transgress the planetary boundaries within which societies have been sustained for the past 10,000 years.<sup>ii</sup>

**The Living Planet Index reflects changes in the health of the Earth's ecosystems. It is based on monitoring almost 8,000 populations of over 2,500 vertebrate species. Except for the temperate biome, which is somewhat stable (after hundreds of years of biodiversity losses), all other indices show various degrees of decline. Biodiversity in the tropics has declined dramatically (by 30 percent since 1992), indicating severe ecosystem degradation. This is primarily due to high deforestation rates related to conversion of forests into agricultural land and pastures.**

The loss of biodiversity and ecosystems is a challenge for us all, but it is a particular challenge for the world's poor. Many of the 1.2 billion people living in severe poverty, on less than US\$ 1 a day, depend directly on nature for food, clean water, fuel, medicine, shelter, and reduced vulnerability to climate change and natural disasters. Dependent on ecosystem goods and services for their livelihoods and subsistence, the poor stand to suffer disproportionately from potentially catastrophic changes to fragile ecosystems in coming decades. Ultimately, however, all societies stand to lose.<sup>iii</sup>

The international community faces some stark choices—the current global development model is unsustainable.<sup>iv</sup> The links between biodiversity and ecosystems and the goods and services they provide, and the roles these play in our economies, are not fully understood or valued. As a result, biodiversity and ecosystems are not managed to protect their present and future values, and the costs of their loss and degradation are escalating.<sup>v</sup> UNDP's 2012 Human Development Report for Africa 'Towards a Food Secure

Future' confirms that the loss of biodiversity and ecosystems has negative effects on many aspects of human wellbeing, such as food and energy security, access to clean water and raw materials, and vulnerability to natural disasters.<sup>vi</sup>

The need for global action to eradicate poverty and make growth and consumption sustainable, while combating climate change and respecting planetary boundaries, is urgent and clear. Major changes are required in order to incorporate inclusive, resilient and sustainable development in global and national development policies, and in institutions, attitudes, and decision-making processes.<sup>vii</sup>

A post-2015 development framework is emerging, building on the recent Rio+20 Summit, which reaffirms an international commitment to the overarching goals of sustainable development and poverty reduction in the context of challenges that are interconnected and planetary in scope.



A clear global agenda has been agreed regarding biodiversity and ecosystems management, which includes the Strategic Plan and Aichi Targets agreed at the Tenth Conference of the Parties to the United Nations Convention on Biological Diversity (CBD) held in Nagoya in 2010, as well as the biodiversity- and ecosystem-related resolutions and commitments resulting from Rio+20, the ten-year Strategy of the CCD, agreements under UN Framework Convention on Climate Change (UNFCCC), and the biodiversity-related Conventions, and national and international efforts to accelerate progress to achieve the MDGs. This new agenda, driven by national governments, balances more effectively the global imperatives of economic development, poverty reduction, environmental sustainability and intergenerational equity. Priority is placed on food, water and energy security, and enhanced resilience to disasters and crises.

While reinvigorating commitments to achieve the Millennium Development Goals, Rio+20 also marked a transition towards action on establishing new Sustainable Development Goals (SDGs). Priorities for the SDGs are likely to include:

- Ensuring equitable and inclusive economic growth to reduce poverty and improve environmental sustainability;
- Intertwining the economic, social, and environmental strands of sustainable development and managing trade-offs;
- Recognizing the importance of the sustainable use of biodiversity and ecosystems for sustainable and equitable development;
- Promoting resilience by strengthening social protection systems, implementing disaster and crisis risk reduction measures, enhancing societies' capacity to adapt to climate change, and maintaining the functioning of natural ecosystems<sup>viii</sup>; and
- Emphasizing issues relating to food security, water management, access to modern energy services, management of oceans, sustainable urbanization, and disaster preparedness.

Central to this agenda is on-the-ground implementation of development policies and programmes that protect and regenerate the planet's shared natural resources, and help countries to develop the capacity to manage for resilience. The Rio+20 Outcome Document 'The Future We Want', formally adopted at the Conference, underlines UNDP's mandate to protect and maintain biodiversity, ecosystems and the provision of ecosystem services as a core component of the organization's overall mission to alleviate poverty and promote sustainable development. The important relationships between biodiversity, ecosystems and development are outlined further in Annex 1.

## C. The Global Response to Biodiversity Loss and Ecosystem Degradation

### *The Convention on Biological Diversity and the Strategic Plan for Biodiversity 2011-2020*

The tenth meeting of the Conference of the Parties (COP10) to the Convention on Biological Diversity marked an important moment for countries committed to reversing biodiversity loss. Placing poverty reduction at the heart of a new global biodiversity vision, the Parties agreed "to take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human wellbeing, and poverty eradication."



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COP10 adopted a ‘package’ of agreements on the Access and Benefits Sharing (ABS) Protocol and a revised Strategic Plan to halt biodiversity loss by 2020. It also reinvigorated governmental commitments to the resource mobilization strategy adopted at COP9 in Bonn in 2008, which was aimed particularly at increasing and diversifying sources of finance for biodiversity management.

- *The Strategic Plan for Biodiversity* (which includes the ‘Aichi Targets’) emphasizes assigning values to ecosystem services and biodiversity, and integrating those values into national accounting. Its global mission is to “take effective measures to halt biodiversity loss to ensure that by 2020 ecosystems are resilient”. The plan provides a flexible framework for setting targets, placing responsibility on parties to set their own targets, with voluntary monitoring and enforcement of progress. The Plan includes 20 headline targets, organized under five strategic goals that address the underlying causes of biodiversity loss, reduce the pressures on biodiversity, safeguard biodiversity at all levels, enhance the benefits provided by biodiversity, and provide for capacity building. Some of the key targets of the ten-year plan for this framework are to:
  - ▮ At least halve, and where feasible bring close to zero, the rate of loss of natural habitats, including forests.
  - ▮ Establish a target of 17 percent of terrestrial and inland water areas and 10 percent of marine and coastal areas under protection.
  - ▮ Through conservation and restoration, restore at least 15 percent of degraded areas.
  - ▮ Make special efforts to reduce pressures faced by coral reefs.

Parties agreed to translate this overarching international framework into national biodiversity strategies and action plans (NBSAPs) within two years.

- *The ABS Protocol* (known as the ‘Nagoya Protocol’) creates a framework that provides for access to genetic resources based on prior informed consent from providers of resources and mutually agreed terms, and for fair and equitable sharing of benefits, taking into account the important role of traditional knowledge. The Protocol also proposes the creation of a global multilateral mechanism that will operate in trans-boundary areas or situations where prior informed consent cannot be obtained. Such cases could include the use of genetic resources coming from unknown countries, ex-situ collections, or areas beyond national jurisdiction. The Protocol does not address issues related to scope, derivatives and compliance; however, these issues may be clarified by national ABS laws or policies. In fact, the Protocol must be implemented through these national ABS frameworks.
- *The Strategy for Resource Mobilization*, which was intended to increase and diversify biodiversity finance, was strengthened by an agreement designed to reinvigorate the strategy; COP10 decision X/3A defined certain concrete activities and initiatives related to resource mobilization, including measurable targets and/or indicators, and requested that by 2015 Parties should have reported funding needs, gaps and priorities, assessed and/or evaluated the values of biological diversity, and prepared national financial plans for biodiversity, in order to prepare for the adoption of specific biodiversity financing targets, using both traditional and innovative financing sources.<sup>ix</sup>

COP10 also adopted more than 40 other decisions, including: a de facto moratorium on geo-engineering; support for applying the precautionary approach to the field release of synthetic life into the environment; and affirmation of the CBD’s role in REDD programmes (reducing emissions from deforestation and forest





degradation in developing countries) and REDD+ (forest conservation, sustainable forest management and enhancement of forest carbon stocks). By 2020 at the latest, it is expected that biodiversity values will have been integrated into national and local development and poverty reduction strategies and planning processes, and incorporated into national accounting and reporting systems.



### **Eighteen Years of Support to Protect the Biodiversity of Argentina's Patagonian Coast**

The 1,500 miles of the southwestern coastal zone of Argentina, which extends from Rio Negro to the Beagle Channel, lie along one of the world's richest and most productive marine ecosystems. Recognizing the importance of this region to Argentina's economy, and to global biodiversity conservation, two UNDP supported GEF financed projects worked to secure the biodiversity of the area between 1991 and 2009. The first project led to the development of a Patagonian Coastal Zone Management Plan for sustainable use of the region's natural resources, paying particular attention to the needs and interests of local communities. The plan covers the establishment of coastal protected areas, sustainable fisheries, responsible tourism and pollution prevention. The second project concerned consolidation and implementation of the Patagonian Coastal Zone Management Programme. It aimed to improve the quality of life of the communities depending on coastal resources for their livelihoods while also maintaining biodiversity and the productivity of Patagonia's ecosystems. In 2008, the project marked a significant achievement when the National Congress approved the creation of the Marine Park in Golfo San Jorge, which expanded the formal protection of colonies of marine birds from 50 percent to 75 percent, and provided protection for 100 percent of all fur seal breeding colonies on the coast of Patagonia in Argentina. Additionally, with project support, the Federal Fisheries Council of Argentina approved the establishment of an 180,000 hectare no-fishing zone over the Burdwood Bank off the tip of Tierra del Fuego, to protect benthic communities in this unique ecosystem.



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### *The Multilateral Environmental Agreements*

The Convention on Biological Diversity states that biodiversity conservation is “a common concern for all humanity” and an integral part of the development process. While this Convention is directly dedicated to the protection of biodiversity, it is clear that biodiversity management is critical to achieving the objectives of the other two Rio Conventions, which originated at the 1992 Earth Summit—the UNFCCC and the CCD—as well as Agenda 21, which was also adopted there.



### **Promoting Sustainable Biodiversity-Based Livelihoods in India**

The Gulf of Mannar, located at the southeastern tip of Tamil Nadu state and covering an area of over 10,500 square kilometres, is endowed with more than 3,600 species of plants and animals, including the globally endangered dugong. Approximately 224,000 people inhabit 252 villages in the area making a living from fishing, seaweed collecting, or other marine-based activities. The UNDP supported GEF financed project ‘Conservation and Sustainable Use of the Gulf of Mannar Biosphere Reserve’s Coastal Biodiversity’ works to empower local communities to manage the coastal ecosystem and resources and pursue sustainable livelihoods that will reduce pressures on the fragile coastal and marine ecosystems. In addition, the project ‘Biodiversity Conservation through Community-Based Natural Resource Management’, funded with UNDP ‘TRAC’ resources, has established Biodiversity Management Committees and Joint Forest Management Committees, implemented conservation measures, and documented traditional knowledge about the value and uses of biological resources. Sustainable livelihoods have been promoted, such as agro-forestry, livestock husbandry, community-based ecotourism initiatives and herbal health care centres. An independent statutory Biosphere Reserve Trust and almost 250 Village Marine Conservation and Ecodevelopment Committees have been set up in the Gulf of Mannar, and there has been an increase in live coral cover from 37 percent to 43 percent since the project began. More than 1,700 youth from economically underprivileged families now pursue different professions as a result of the vocational training provided. In addition, the development of an Integrated Management Plan for the Gulf of Mannar Marine National Park and Biosphere Reserve (2007-2016) is under way.



The interlinkages between biodiversity, climate change and sustainable development are well recognized within these Conventions. For example, Article 2 of the UNFCCC recognizes the importance of limiting climate change to a level that would allow ecosystems to adapt naturally. The CBD's Ad Hoc Technical Expert Group (AHTEG) on Biodiversity and Climate Change has highlighted the possible negative impacts of climate change-related activities on biodiversity, and identified the role of biodiversity in climate change mitigation and adaptation. This expert group has helped establish clear steps for increasing cooperation among the Rio Conventions, an area which has received inadequate attention in the past.

Biodiversity management also serves as a foundation for activities supported by the CCD, which focuses on combating desertification and mitigating the effects of drought through National Action Programmes (NAPs). The objectives of the CCD are closely related to helping societies adapt to climate change, reduce land degradation, and maintain biodiversity in healthy natural ecosystems for the continued provision of ecosystem services such as water provisioning and soil fertility. The interface between the two Conventions is managed through a Joint Work Programme on the biological diversity of dry and sub-humid lands.

In addition to the three Rio Conventions, five multilateral environmental agreements (MEAs) are closely related to biodiversity—the Convention on Wetlands of International Importance (known as the Ramsar Convention), the Convention on Conservation of Migratory Species, the Convention Concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the International Treaty on Plant Genetic Resources for Food and Agriculture.

### *The Post-Rio Framework*

The international community recognizes that sustainable development remains a distant goal and that there are major barriers and systemic gaps in the implementation of internationally agreed commitments. Failure to reduce grave environmental risks and deepening social inequalities threatens to slow decades of sustained progress by the world's poor majority—and even to reverse progress in human development.<sup>x</sup>

While the vast majority of countries have committed to achievement of the MDGs by 2015 and to the CBD's goal of significantly reducing biodiversity loss by 2020, these ambitions are being compromised by unsustainable consumption and production. Most governments now agree that they must redouble their efforts to reduce poverty, advance social equity, ensure environmental protection and promote sustainable production and consumption in order to build a sustainable future on an ever more crowded planet.<sup>xi</sup>

A post-2015 development framework, responding to the outcomes of Rio+20 and reaffirming the overarching goals of sustainable development and poverty reduction, is expected to emerge. Building on the CBD Strategic Plan and Aichi Targets, the outcomes of Rio+20, and efforts to accelerate implementation of the MDGs, actions will focus on the new, post-2015 Sustainable Development Goals (SDGs), such as:

- Intertwining the economic, social, and environmental strands of sustainable development and managing trade-offs;
- Equitable and inclusive economic growth to reduce poverty and improve environmental sustainability;
- Recognizing planetary boundaries and the importance of the sustainable use of biodiversity and ecosystems for sustainable and equitable development (notably food, water and energy security);



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- Promoting resilience by strengthening social protection systems, implementing disaster and crisis risk reduction measures, enhancing societies' capacity to adapt to climate change, and maintaining the functioning of natural ecosystems<sup>xii</sup>; and
- Emphasizing issues relating to food security, water management, access to modern energy services, management of oceans, sustainable urbanization, and disaster preparedness.

Central to this agenda is an approach to biodiversity and ecosystem management that is closely linked with action to achieve climate stability and sustainable development. The foundation for this is the protection and maintenance of biodiversity, ecosystems and the provision of ecosystem services.

**Governments and conservation agencies are increasingly recognizing the value of pursuing biodiversity and ecosystem management plans in conjunction with protection of communities' customary use of natural resources. Laws that aim to protect biodiversity can be implemented in ways that also support the rights of communities that use natural resources to sustain their ways of life. A rights-based approach to conservation recognizes that communities are not merely 'stakeholders' whose interests should be taken into account, but may have legal rights and entitlements that others are obliged to respect. Public participation, access to information, and access to justice are important for lifting barriers to effective environmental governance. The development and implementation of the new generation of National Biodiversity Strategic Action Plans with support from UNDP are expected to be based on widely inclusive and participative processes.**

### *The Future Role of UNDP*

Conservation and sustainable use of biodiversity and ecosystems are essential components of UNDP's mission to help alleviate poverty and promote sustainable development.

UNDP helps countries reach their sustainable development goals by offering policy and programme options that promote inclusivity, resilience and sustainability.<sup>xiii</sup> Going forward, UNDP has an important role to play in supporting the on-the-ground development of policies and programmes that can regenerate the planet's shared natural resources, and enable countries to increase their capacity to manage for resilience. UNDP works with developing and emerging countries that are especially endowed with biodiversity and ecosystem assets on ways to conserve these assets and establish the conditions for using them to support sustainable development. Capacity development at the individual, institutional and systemic levels will provide the basis for UNDP's biodiversity and ecosystems work up until 2020.

Through the work of the global UNDP Biodiversity and Ecosystems Team—a network of regional specialists and national-level staff supported by a global management team—UNDP will continue to provide state-of-the-art technical knowledge that can be used to formulate and implement country-driven projects and initiatives, mobilize required co-financing, share experiences of best practices, and monitor and evaluate results. The team will work closely with country partners to support policies and programmes that integrate

actions to address poverty, governance, climate, gender and biodiversity conservation commitments, through existing local, national and international systems and structures. Emphasis will be placed on partnering with major groups, including civil society and the private sector, in line with UNDP's new policy on social and environmental safeguards. The team will play a catalytic role in mobilizing biodiversity financing for reversing biodiversity loss and ecosystem degradation.



Interventions in crisis and post-crisis countries (where countries are suffering from the adverse impacts of natural or man-made disasters and conflict) will be designed to strengthen biodiversity and ecosystems management as a cornerstone for recovery, recognizing UNDP's leading role in bridging humanitarian and development efforts.



### **Coffee Production and Biodiversity Conservation: Achieving the Triple Win of the Green Economy**

A UNDP supported GEF financed project on Biodiversity Conservation in Coffee, linked to the Rainforest Alliance, works to: promote certified production of coffee using biologically rich methods; increase international market demand by raising awareness of the benefits of these methods; and facilitate partnerships to improve socio-economic conditions in coffee-growing communities in Latin America. The Rainforest Alliance has the ambitious goal of certifying 10 percent of the world's coffee supply. A concerted marketing effort is already paying off, and work on the ground is providing farmers with the information and tools they need to farm sustainably.

### **D. Future Challenges and Opportunities**

As nations begin to chart a course towards a low-emission and climate-resilient future, they will need to find efficient and innovative solutions to meet their growth and development goals, including approaches for effective biodiversity and ecosystem management.

In several important areas, national and international action to support biodiversity conservation is moving in a positive direction. More land and sea areas are being protected, more countries are fighting serious threats to biodiversity such as invasive alien species and climate change, and more efforts are being made



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to promote biodiversity-based livelihoods and sustainable use. The GEF and others are ensuring that more money is being set aside for implementing the CBD, the MDGs and other international agreements. These efforts, however, are too often undermined by conflicting policies and processes.

Recognizing the value of differentiated strategies for sustainable development, we must ask ourselves: How can we best build our common future in a sustainable and lasting way?

Key action areas for UNDP-managed projects undertaken by countries include:

### 1. Integrating management of biodiversity and ecosystems into development and investment policies

In order to move towards sustainable development, policies on natural resources, poverty and the economy need to be explicitly linked. There is evidence that integrating biodiversity and ecosystem management objectives into production sectors such as agriculture, forestry, fisheries, mining and tourism supports sustainable development objectives. However, there is a need for better understanding about how to mainstream sustainability into the decision-making of governments and businesses around the world, as well as a need for stronger commitments, with effective enforcement and management of trade-offs.

For a 'green economy', it is crucial to ensure that production processes maintain the natural goods and services that sustain human wellbeing. This requires integration of biodiversity and ecosystem management into development planning and sector production activities, sustainable use of resources from ecosystems, and careful land use planning. Internalizing the costs and values of natural assets into national accounting systems and structures further contributes to recognition of the critical economic role of biodiversity and ecosystems.

Engagement of the private sector is essential for a transition to a green economy. A UNDP report 'From Transition to Transformation—Sustainable and Inclusive Development in Europe and Central Asia'<sup>xiv</sup> shows that through new products and innovations, and new investments and markets, businesses can play a major role in generating long-term, sustainable growth while contributing to efficient use of resources, reduction of carbon emissions, and poverty eradication. However, businesses (and communities) will need to be persuaded that there is a link between economic opportunities and preservation of the value of ecosystem goods and services, and at the same time incentivized and rewarded for environmental and social responsibility and new sustainable ways of doing business. On the regulatory side, governments will need to enforce compliance with conservation policies, legislation and procedures, including those that regulate the international trade in threatened species, in order to safeguard these resources for the future.





The concept of 'green jobs' is gaining acceptance as a way to align poverty reduction and wealth creation with biodiversity conservation and sustainable use objectives. Well-designed interventions can contribute directly to the poverty-environment-climate nexus by channelling income generated through biodiversity-friendly activities—including work in agriculture, manufacturing, research and development, and administrative and service activities—into reducing damaging exploitation of the environment for income generation.

## 2. Maintaining goods and services through protected areas

Creating, expanding and effectively managing protected areas is an effective strategy for simultaneously alleviating poverty, adapting to and mitigating climate change, and maintaining key ecosystem services. Because habitat destruction is a major driver of biodiversity loss, establishing protected areas provides safe havens for biodiversity. Protected areas include tracts of forests, mountains, wetlands, grasslands, deserts, lakes, rivers, coral reefs, and oceans that are managed by governments, communities and indigenous peoples to maintain biodiversity and ecosystem services.

Most protected areas are managed for multiple compatible uses, including biodiversity conservation, outdoor recreation, hunting and fishing, tourism, watershed protection, sustainable forestry, scientific research, and environmental education. Their protection serves as an insurance policy for the world's poorest communities, supporting livelihoods and strengthening economies. There are almost 200,000 protected areas in the world. These areas need to be effectively managed and sustainably financed, and many more need to be established, or existing ones expanded.

Intact ecosystems such as islands, reefs and mangroves can act as buffers against the devastating effects of storm surges and coastal erosion, which are likely to increase with climate change. Droughts and wildfires can also be avoided or reduced by expanding and managing ecosystems appropriately, and the destruction caused by landslides can be reduced through soil stabilization provided by plant coverage. Access to clean drinking water, recently declared a basic human right by the United Nations and rendered increasingly precarious by watershed degradation, is also facilitated through protected areas.<sup>xv</sup> About one third of the world's largest cities obtain a significant proportion of their drinking water directly from forested protected areas.<sup>xvi</sup>

Indigenous and local communities are often custodians of biodiversity, and their participation in establishing, expanding, connecting and managing protected area networks is important. Protected areas can help build their resilience to climate change, promoting sustainable livelihoods and providing buffers against ecological, economic and social shocks. By integrating protected areas into wider landscapes and seascapes, and managing the activities of economic sectors directly related to natural resource use and management—such as agriculture, forestry, fisheries, wildlife, mining and tourism—it is easier to avoid negative impacts on high value biodiversity areas that could result in the loss of vital ecosystem services, including carbon storage and sequestration.<sup>xvii</sup>

As of March 2012, the total number of nationally and internationally designated protected areas in the World Database on Protected Areas was almost 200,000—covering 12.7 percent of the global land area (excluding Antarctica), 1.6 percent of the ocean area, 4.0 percent of marine areas under national jurisdiction (0-200 nautical miles), 3.5 percent of Exclusive Economic Zones (12-200 nautical miles) and 7.2 percent of coastal waters (0-12 nautical miles). Indigenous and Community Conserved Areas are more difficult to quantify, but by mid-2011 the database included 700 sites known to be governed by indigenous people and/or local communities, covering over 1.1 million square kilometres.



# PART 1: BIODIVERSITY AND ECOSYSTEMS, POVERTY AND CLIMATE CHANGE—THE TRIPLE CHALLENGE

Tropical forests contribute to the livelihoods of more than 1.2 billion people, most of whom do not have viable economic alternatives to their dependence on forests. Tropical deforestation has been relentless, with about 13 million hectares of forest lost per year between 2000 and 2010 as land was converted to other uses. The Economics of Ecosystems and Biodiversity initiative concluded that deforestation is a threat to the limited livelihood resources of the poor and a significant cause of current greenhouse gas emissions. However, in Brazil, for example, efforts to reverse regionally rising deforestation rates are beginning to yield fruit. After four consecutive years of reductions, Brazil gained worldwide recognition in 2011 for achieving a new deforestation low—roughly 11.7 percent over 12 months.

### 3. Mitigating and adapting to the effects of climate change

Climate change represents a serious risk to poverty reduction and could undo decades of development progress. While climate change is global, its negative impacts are more likely to severely affect developing countries and poor people, who are most vulnerable because of their high dependence on natural, and limited, resources to cope with climate variability and extremes. Restoring and maintaining key ecosystems can help communities in their adaptation efforts and support livelihoods that depend on ecosystem services. This can be achieved as part of development strategies aiming to move towards low-carbon societies that reduce greenhouse gas emissions, improve human health and wellbeing and create green jobs.<sup>xviii</sup>

#### *Ecosystem-Based Mitigation*

Recent analysis shows that the timing and scale of emissions reductions needed to avert dangerous climate change are beyond the reach of current national pledges and anticipated international agreements. Current commitments are widely believed to have the world on a warming path that is well in excess of the desired limit of 2°C discussed at the 2010 Cancún Conference of the Parties to the UNFCCC. Studies by

UNEP and the Stockholm Environment Institute suggest that the present trajectory is likely to lead to an average increase in global temperature of around 4°C or more—an increase that would almost certainly have catastrophic consequences for human health and safety and for natural ecosystems in most regions of the world. In this context, it is vital for countries to redouble their efforts to make sound policy, technology and investment choices that will lead to reduced greenhouse gas emissions, including nature-based mitigation solutions.

Key action areas for UNDP-managed projects undertaken by countries in this context include:

- Putting in place sound policy measures and removing policy distortions that lead to ecosystem loss—and attendant greenhouse gas emissions;
- Formalizing property rights and responsibilities where open access to natural resources is causing ecosystem degradation and greenhouse gas emissions;
- Strengthening institutions responsible for planning and executing ecosystem management;
- Enforcing laws aimed at securing the public interest with regard to the avoidance of greenhouse gas emissions from ecosystem degradation; and
- Developing capacity and raising financing to maintain and restore forests, peatlands, wetlands, tidal marshes, mangroves, seagrasses and other natural ecosystems that function as effective carbon sinks.

Accessing carbon markets provides new opportunities for countries to finance biodiversity and ecosystem management. Available options include the Clean Development Mechanism as it applies to Land Use, Land Use Change and Forestry, successor markets for afforestation and reforestation, voluntary markets for emissions reduction in wetlands, and the emerging REDD mechanism (Reducing Emissions from Deforestation and Forest Degradation).





REDD aims to create a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ goes beyond that to include a focus on conservation, sustainable management of forests and enhancement of forest carbon stocks, and has emerged as an important initiative for effective and large-scale mitigation. REDD+ also addresses the property rights of forest stakeholders, especially those at the bottom of the economic pyramid.



### **Safeguarding and Restoring Lebanon's Woodland Resources**

The forests of Lebanon serve as 'water-towers' that are crucial to the welfare of local communities. Safeguarding these forests is important for the preservation of aquifers and surface freshwater, used mostly for irrigation and drinking water. In 2001, the Lebanese Ministry of Environment initiated a National Reforestation Plan to restore the country's forest cover to at least 20 percent of the territory (from an historic low of 13 percent). During the period 2002 to 2006, more than 580 hectares of forests were restored. In 2009, the Lebanese Ministry of Environment launched another phase of reforestation activities through the UNDP supported GEF financed project on 'Safeguarding and Restoring Lebanon's Woodland Resources'. The long-term goal of this project is to complement on-the-ground investments undertaken under the National Reforestation Plan by strengthening the enabling environment and building capacity for sustainable land management as a contribution to greater ecosystem stability, enhanced food security and improved rural livelihoods. To date, the project has assisted the Ministry of Environment in the issuance of direct contracts to 48 municipalities to reforest degraded lands, and provided them with technical and financial assistance resulting in the reforestation of 191 hectares across the country.



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### *Ecosystem-Based Adaptation*

Ecosystem-based adaptation (EBA) can be defined as the use of biodiversity and ecosystem services as part of an overall strategy to help people adapt to the adverse impacts of climate change. This involves tackling problems with solutions based on nature—for example, keeping a wetland system in place as a natural ‘sponge’ to absorb flash floods coming down from the mountains in order to protect farmers’ fields, or restoring mangrove swamps to provide a natural buffer for coastal communities against storm surges.

EBA approaches can help vulnerable communities increase their capacity to adapt to the impacts of climate change, and build the resilience of the ecosystems on which their livelihoods and welfare depend. Ecosystem-based approaches can also generate significant social, cultural and economic benefits. An EBA approach typically forms part of an overall national or regional adaptation strategy, and involves the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt.<sup>xix</sup>

Many recent climate change adaptation initiatives have focused on engineered solutions that involve the use of technologies and climate-resilient built infrastructure. However, there is growing recognition of the role healthy ecosystems can play in adaptation. Managing and restoring ecosystems can also provide valuable work opportunities, especially in rural areas with high poverty levels. Readily integrated into a community-based approach to adaptation, EBA addresses many of the concerns and priorities identified by the most vulnerable countries and communities, enhancing their resilience to economic shocks and natural disasters. It also involves promoting the resilience of the natural ecosystems on which communities depend, keeping forests, wetlands, mangroves, and coral reefs intact, healthy and functioning.<sup>xx</sup>

As the science of EBA is relatively new, important questions remain in relation to effective implementation, including: how to facilitate lasting ecosystem restoration; how to evaluate the comparative costs and benefits of ecosystem-based options versus other adaptation options; and how to measure changes over time in communities’ capacity to adapt and in ecosystem functioning. Work is also needed regarding how EBA approaches can be used in connection with mainstreaming (adapting production practices employed by economic sectors to reduce climate change threats to ecosystems), and how protected areas can best be managed and designed to enable adaptation.

Application of the precautionary principle would call for reducing the existing (non-climate related) stressors on ecosystems that provide critical services and can help buffer the impacts of climate change. In this context, it is important for countries to develop climate change adaptation strategies, as part of their broad development frameworks, which integrate cost-effective, locally appropriate ecosystem-based adaptation options based on the best available science.

#### **4. Expanding financing for biodiversity and ecosystem management**

It is not clear exactly how much funding is needed globally to address biodiversity loss and ecosystem degradation. Available estimates are incomplete at best, or suffer from methodological flaws in their derivation. Moreover, a comprehensive assessment of the funding baseline has not been undertaken to



determine how much is already being spent on biodiversity and ecosystem management globally, by donors, governments, the private sector and non-governmental organizations (NGOs). Important questions remain with regard to the role of environmental policy and governance in this context and the effectiveness of past funding in addressing biodiversity loss and ecosystem degradation.

Most developing countries and countries with economies in transition have a huge unmet need for environmental finance. Finance is required to improve environmental governance and develop capacity at the systemic, institutional and individual levels, and to address the fact that the value of environmental goods and services is largely not reflected in markets. It is also necessary for the construction and purchase of physical infrastructure and equipment needed to perform existing biodiversity management functions, and funding salaries and operational costs, as well as undertaking new work such as large-scale ecosystem rehabilitation. As the impacts of climate change increase, along with the pace of biodiversity loss (and accompanying destabilization of ecosystem functions and the services derived from them), the demand for environmental finance is increasing rapidly. Many countries need support in accessing and applying environmental financing effectively in order to meet their biodiversity and ecosystem management needs.

Key challenges for UNDP-managed projects undertaken by countries include addressing cost management and expenditure forecasting, as well as finding ways to meet environmental finance needs. This may require: investing in making the economic case for biodiversity management and ecosystem rehabilitation; developing capacity to make strategic financing decisions (such as reallocating spending to match management priorities and identifying appropriate efficiency improvements and cost reductions); building institutional capacities to develop and administer financial mechanisms; and brokering finance.

There are a large number of potential financing sources available for biodiversity and ecosystem management, including national budgetary appropriations, official development assistance (ODA), market-based mechanisms, endowment funds, debt-for-nature swaps, biodiversity offsets, auctioning of tourism concessions, green taxes, payments for ecosystem services (PES), carbon finance and REDD/REDD+ funding.

**The Little Biodiversity Finance Book, released in 2012 by the Global Canopy Programme alliance of scientific institutions, identified sources of finance that can be harnessed to raise up to US\$ 159 billion by 2020 to help halt global biodiversity loss, which they estimated is currently costing at least US\$ 740 billion annually in lost ecosystem services. The authors reported that funding for biodiversity and ecosystem services was US\$ 51.8 billion in 2010. They argued that even greater levels of finance will be needed to meet the more ambitious and wide-reaching Aichi Targets by 2020, including both traditional and non-traditional finance generation mechanisms. About 78 percent of current funding for biodiversity protection is generated in developed countries, but as much as 59 percent is also delivered in those same countries, while only 41 percent is delivered in developing countries—where the majority of the world’s biodiversity exists and the impacts of biodiversity loss are most strongly felt.**



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The strategies that need to be employed to tap into each of these sources of funds vary considerably depending on the nature of the fund, and the context and priorities of the country.

Natural ecosystems play an important role in maintaining agricultural productivity, for example through ecosystem services related to soil and water resources and pollination. Food security is a precondition for sustained human development, and neither of these can be met through economic growth alone. In Africa, for example, for growth to be effective, agricultural productivity and nutrition policies need to improve. The UNDP Africa Human Development Report 2011 notes that food security for human development requires that individuals be the subjects and agents of their own wellbeing. Policies must support actions that build resilience and empower people, especially women.

### 5. Strengthening opportunities for local action

Biodiversity and ecosystems are often valued and understood best at the local level, and local knowledge is essential for effective solutions. The UN Secretary-General's second-term five-year Action Agenda<sup>xxi</sup> underlines the importance of taking action to build the resilience of communities experiencing food crises, economic recession, natural disasters, and climate change-related stresses and extreme weather events, through better management of biodiversity and ecosystems.

Resilience-based sustainable development will require significant changes in development policies to ensure conservation and sustainable use of fragile natural resources, including greater emphasis on local actors and community-based capacity building and empowerment. It is often not just faulty policies that result in over-exploitation and degradation of the environment, but also problems of enforcement. In this regard, communities need to be active supporters of the transition to sustainable development, asserting their rights and also fulfilling their responsibilities in terms of sustainable management of resources.

Local action can be strengthened by ensuring local resource and land tenure rights, improving access to finance, supporting local nature-based business enterprises, promoting participatory decisions and activities, and facilitating peer-to-peer dialogue and knowledge sharing to make local action more effective, sustainable and replicable.<sup>xxii</sup>





### **Empowering Local Communities to Protect the Belize Barrier Reef Reserve System— World Heritage Site**

The mission of the Community Management of Protected Areas Conservation Programme (COMPACT) in Belize is to conserve the integrity and character of the Belize Barrier Reef System by developing and supporting a range of conservation and sustainable livelihood activities through transparent and democratic partnerships with coastal communities and other stakeholders. COMPACT is an initiative of the GEF Small Grants Programme (implemented by UNDP), the United Nations Foundation and other partners. COMPACT has approved a total of 35 grants in Belize since 2001, adding up to almost US\$ 1.9 million. The grants have supported a range of conservation and livelihood activities led by community-based organizations and NGOs working with coastal and fishing communities in the following areas: sustainable livelihoods (including skills and product development); protection, conservation and sustainable management of resources; and strengthening of management capacities for stakeholders that impact the Belize Barrier Reef Reserve System—World Heritage Site. For example, the Community Stewards project, led by the Toledo Institute for Development and Environment (TIDE), has reached 25 resource users in a two-year programme of training on marine and terrestrial laws, and technical skills such as GPS and computer use, including an exchange visit to Cerro San Gil in Guatemala to learn how communities there are involved in resource management, protected areas management, and communications. As a result of the project, these stewards are now taking up leadership roles within their communities and playing key roles on advisory and technical committees established for the management of the Port Honduras Marine Reserve and the Payne’s Creek National Park. In addition, COMPACT Belize supports local NGO efforts to harvest invasive lionfish by providing incentives and disseminating information on how to prepare the fish for human consumption, thereby reducing pressures on the natural ecosystem of the Belize Barrier Reef.



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Local governments, communities, indigenous peoples, community-based organizations, and NGOs involved in local biodiversity and ecosystems management need better access to the results of scientific research. The work of scientific researchers, in turn, needs to be informed by local-level experience, and by diverse knowledge sources, including traditional knowledge. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an important mechanism for strengthening communication between those involved in science, policy and implementation in this context.

### 6. Strengthening biodiversity and ecosystem leadership and public awareness

A key lesson from the failure to meet the 2010 CBD Biodiversity Targets is that important government decision-makers, such as Ministries of Development, Planning and Finance, have not been sufficiently engaged. The CBD has very nearly universal participation from the world's governments, yet those involved in its implementation rarely have the influence to promote action and enforcement at the level required to effect real change.<sup>xxiii</sup>

Stronger national and international leadership is needed to ensure effective implementation of the new biodiversity and ecosystem management vision embodied by the CBD Strategic Plan and Aichi Targets, the CCD ten-year strategy and Rio+20 outcomes. This includes engaging leaders in government, business, science, education and the media, and influencing public opinion concerning the importance of conserving biodiversity, using its components sustainably and ensuring that the benefits from the use of the genetic resources of our planet are shared equitably.





## The 'Latin America and the Caribbean: A Biodiversity Superpower' Initiative

The 'Latin America and the Caribbean: A Biodiversity Superpower' initiative is implemented by UNDP in partnership with UNEP, the Economic Commission for Latin America and the Caribbean (ECLAC), the Secretariat of the Convention on Biological Diversity and the UN Conference on Trade and Development (UNCTAD), with funding from the Government of Spain. It has prepared a report that presents 'business-as-usual' scenarios in key productive sectors that benefit from biodiversity and ecosystems—especially agriculture, fisheries, forests, tourism, hydrological services and protected areas—and describes the long-term negative economic effects of current practices. At the same time, it provides guidelines on how to make the transition to a "Sustainable Ecosystem Management" framework. Four categories of policy action are recommended, including: an economic and legal

environment which facilitates the sustainable management of biodiversity resources; economic valuation of the contributions of biodiversity resources and ecosystem services to development and equality in the region; education and promotion concerning the value of biodiversity and ecosystems; and innovation in the sustainable management of biodiversity and ecosystems services.

The Latin American and Caribbean (LAC) region has one of the greatest endowments of natural capital in the world, which offers an important source for economic growth. From 2002 to 2008, Gross Domestic Product rose in the region—yet fragile biodiversity and ecosystems were severely degraded as a result and 25 percent of the region's population still lives on less than US\$ 2 a day. In order to sustain high levels of economic growth while reducing poverty, policy-makers and businesses in LAC will need to address the relationship between ecosystem services, economic growth and equity, and the hidden costs and missed market opportunities where current approaches to economic growth ignore the value of ecosystem services. By incorporating a more accurate cost-benefit analysis into their planning frameworks, policy-makers will be better equipped to sustain competitiveness and boost growth through the conservation and management of these fragile resources.



## PART 2: UNDP BIODIVERSITY AND ECOSYSTEMS GLOBAL FRAMEWORK IN RESPONSE TO THE CBD STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

### A. UNDP and the CBD Strategic Plan

In October 2010, at the Tenth Conference of the Parties to the Convention on Biological Diversity (COP10), UNDP confirmed a partnership with the CBD Secretariat with regard to work in the following areas: the Convention's programme on biodiversity for development; implementation of the Strategic Plan of the Convention (2011-2020); the Programme of Work on Protected Areas; future work on climate change and biodiversity; the Satoyama Initiative of Japan; outreach to cities; and the proposed UN decade on Biodiversity 2011-2020.

Following COP10, UNDP participated in a series of discussions with the Secretariat to clarify UNDP's roles in assisting countries in implementing the new Strategic Plan, consistent with its mandate as the development arm of the UN system. Following these discussions, it was agreed that UNDP would work with governments to:

- Integrate the new Strategic Plan and 2020 Aichi Biodiversity Targets into revised National Biodiversity Strategies and Action Plans (NBSAPs) to meet the goals of the CBD and other biodiversity-related Conventions.
- Mainstream biodiversity strategies into economic sectors to meet national development goals, finding synergies with climate change and sustainable land management goals, in support of revitalized action towards the achievement of the interlinked objectives of the three Rio Conventions and Agenda 21.
- Support implementation of the CBD Programme of Work on Protected Areas.
- Support implementation of the CCD, UNFCCC and actions emerging from Rio+20.
- Undertake economic assessments of biodiversity and ecosystem benefits and costs relevant to development and development finance.
- Assist countries in aligning socio-economic activities with effective natural resource management in association with the International Partnership for the Satoyama Initiative.
- Support capacity building in all aspects of the biodiversity/ecosystems-development interface.
- Use UNDP's extensive network of global, regional and national offices to better integrate these activities into overall national development planning and implementation.

The UNDP Biodiversity and Ecosystems Global Framework is based on this programme of work. It will also contribute to implementation of the MDGs, and the biodiversity-related resolutions and commitments from the Rio+20 Summit. UNDP is also committed to supporting implementation of the ten-year Strategy of CCD, other biodiversity-related Conventions, including the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the UNFCCC.

In addition, UNDP will support the establishment of a cutting-edge web portal which aims to provide an interactive capacity building tool for scientists, policy-makers and local scale implementers in support of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES).





**B. UNDP’s Biodiversity and Ecosystems Global Framework**

The overall strategic objective of the UNDP Biodiversity and Ecosystems Global Framework is to:

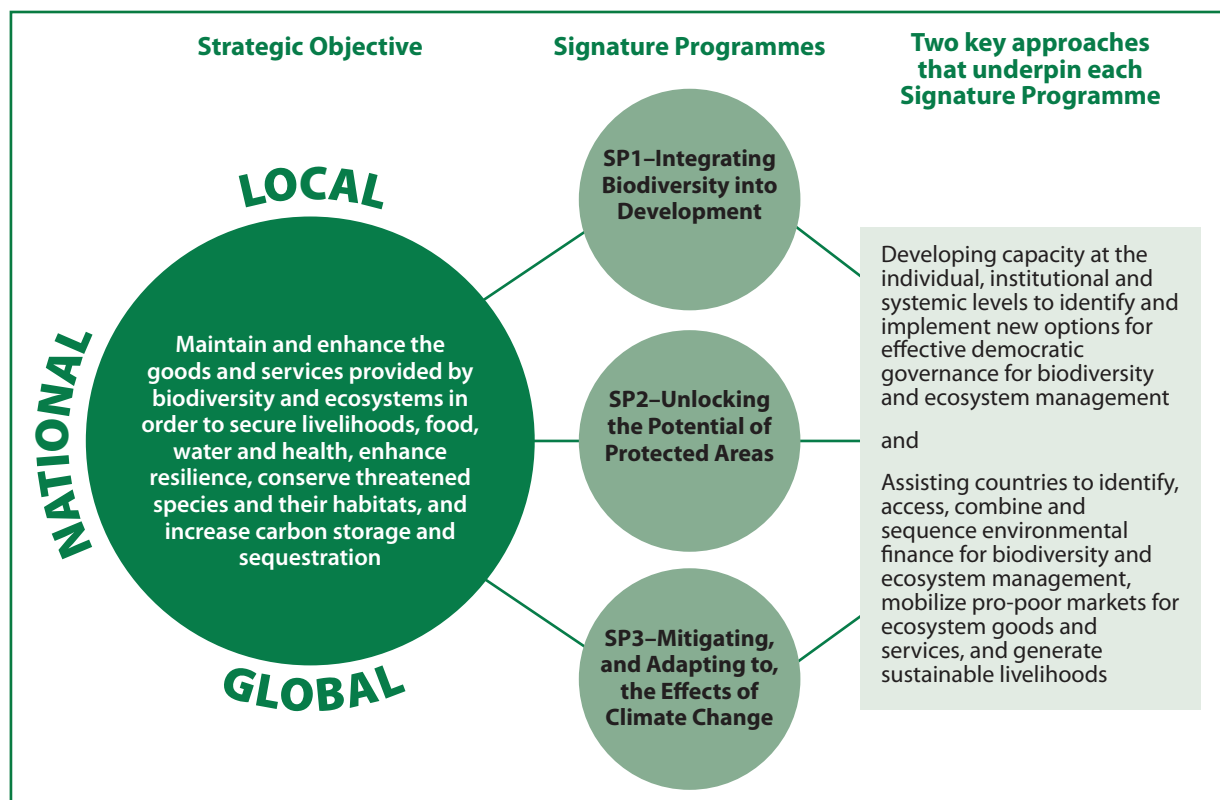
**Maintain and enhance the goods and services provided by biodiversity and ecosystems in order to secure livelihoods, food, water and health, enhance resilience, conserve threatened species and their habitats, and increase carbon storage and sequestration.**

The UNDP Biodiversity and Ecosystems team will work with developing countries through three interconnected Signature Programmes designed to achieve the strategic objective:

**Signature Programme 1:** Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing.

**Signature Programme 2:** Unlocking the potential of protected areas, including indigenous and community conserved areas, to conserve biodiversity while contributing to sustainable development.

**Signature Programme 3:** Managing and rehabilitating ecosystems for adaptation to and mitigation of climate change.





## PART 2: UNDP BIODIVERSITY AND ECOSYSTEMS GLOBAL FRAMEWORK IN RESPONSE TO THE CBD STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

The Signature Programmes are designed to address barriers to effective country action in managing biodiversity and ecosystem services. These barriers relate to two key factors that influence how effective societies are in managing their biodiversity and ecosystems to foster sustainable development.

The first barrier is the absence of an effective governance system for taking decisions on matters affecting biodiversity and ecosystems. Decisions on the use of land and natural resources may be taken by owners and users of land based on their own short-term interests, without taking into account the loss of biodiversity and ecosystem functioning that will result, and the impacts on society as a whole. Weak governance often means that there is no effective system in place for planning and guiding such land and resource use. Other aspects of weak governance can include limited accountability, corruption, highly centralized decision-making, unequal application of rules, and encroachments on communal lands. Finally, absence of effective governance can also allow space for the illegal extraction of natural resources, for example through illegal logging, or poaching of endangered species for commercial gain.

The second barrier is the failure of markets to reflect the real value of ecosystem goods and services, or the real costs of losing them. Because of this, while a forested piece of land may provide enormous value to society, the owner of the land may not be able to realize significant economic profits without cutting down the trees and possibly converting the land, for example, to agriculture. Natural resources that appear to be free and owned by no one may be so overutilized that nobody can benefit from them anymore, as happens when fish stocks are over exploited to the point of collapse. Methods of accounting for national wealth usually fail to reflect the value of biodiversity and ecosystem services to the economy, and the potential cost of replacing them if they are lost or damaged, for example if a water purification plant needs to be built to replace the services provided by a destroyed wetland.

Use of ecosystems for economic activity can provide community livelihoods as well as private sector profits, and a range of societal benefits, including jobs, tax revenues, foreign exchange earnings, and foreign direct investment. But the societal benefits of increased trade and economic activity may actually be outweighed by the costs of accelerated degradation of ecosystem services and lost opportunities for future uses of biodiversity. And if a country's policies, regulatory framework, and management systems do not promote sustainability, there are few incentives for businesses to be concerned about conserving biodiversity and ecosystems.

Strong governance systems for managing ecosystems sustainably will need to include effective policies, regulations, institutions, decision-making systems and property rights. However, countries also need to have the capacity and political will to pursue equitable and sustainable development policies, and forgo excessive consumption of natural resources to avoid larger long-term costs associated with ecosystem loss and degradation. Efforts will need to be stepped up to incorporate the economic, social and cultural values of ecosystem goods and services into economic policies, national and sectoral development plans and the activities of the productive sectors, and to ensure that the costs of their protection, management and restoration are fully embedded in financial frameworks.

Through country-specific interventions, UNDP will work with developing countries to integrate biodiversity and ecosystem management into wealth creation, development planning and production sector activities (SP1), expand and strengthen the management of protected area systems, including indigenous and community conserved areas (SP2), and reduce the impacts of climate change on ecosystems and societies (SP3). In this work, UNDP will apply two key approaches:

- Developing capacity at the individual, institutional and systemic levels to remove barriers to, and identify new options for, effective democratic governance for biodiversity and ecosystem management.



- Assisting countries to identify, access, combine and sequence environmental finance to address the biodiversity and ecosystem financing gap, mobilize pro-poor markets for ecosystem goods and services, and generate sustainable livelihoods.

UNDP's biodiversity and ecosystems work will remain grounded in community-based environment and development initiatives. UNDP will serve as a bridge for upstream policy work (such as national and international enabling conditions) and downstream delivery work (community involvement in local resource management and project delivery). Local work is seen as an essential counterpoint and complement to UNDP's work at the national level<sup>xxiv</sup>, and is fully integrated into all aspects of work under each Signature Programme.

In addition, the private sector—including both small and large businesses—is considered integral to UNDP's Biodiversity and Ecosystems Global Framework. Measures to secure private sector engagement in support of biodiversity and ecosystems will be considered in each Signature Programme. Promoting innovation will be a hallmark of UNDP's future work, in line with UNDP's new policy on social and environmental safeguards.<sup>xxv</sup>

A detailed examination of each Signature Programme is set out below, indicating the way that work in these programmes will be focused from 2012 to 2020, building on existing activities.

**Signature Programme 1:** Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing.

UNDP is committed to stepping up efforts to integrate biodiversity and ecosystem objectives into multiple sectors across land- and seascapes including key productive sectors, such as fisheries, agriculture and forestry; promote more sustainable production practices that maintain land and water ecosystem services; and conserve remaining biodiversity. UNDP will support countries in stimulating job creation by helping 'biodiversity-friendly' producers access new markets, and by promoting nature-based tourism initiatives that generate income for local communities. Sustainable harvesting livelihoods will be supported, as well as access and benefit sharing agreements on genetic resources. Work will be undertaken to integrate biodiversity objectives into production sectors such as fisheries, agriculture and forestry—promoting sustainable land management approaches to protect the ecosystem services needed for food and water security. Incorporation of biodiversity and ecosystem issues in governments' development planning and poverty reduction strategies will aim to ensure that the real value of biodiversity and ecosystems is taken into account.

Through SP1, UNDP will support countries to mainstream biodiversity and ecosystem management into government policies and plans (including overall development and land use plans as well as major sectoral plans) and into market systems, through partnerships with the private sector and communities. The first area of work will involve helping governments and societies analyze and balance trade-offs; the second will seek to establish rewards for positive behaviour and incentives for change.

Activities under Signature Programme 1 (SP1) will aim to reduce pressures on ecosystems that affect ecosystem integrity and functioning by encouraging and assisting governments and businesses in integrating ecosystem management into development planning and production sector activities. Positioning biodiversity management as a positive balance sheet item can change the course of development and reduce the likelihood that ecosystems will be transformed and their biodiversity lost.



## PART 2: UNDP BIODIVERSITY AND ECOSYSTEMS GLOBAL FRAMEWORK IN RESPONSE TO THE CBD STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

SP1 involves activities to influence the policy frameworks that govern production sectors such as agriculture, plantation forestry and fisheries, and to enhance institutional capacity for biodiversity management in these sectors. UNDP-managed projects will complement work by the Food and Agriculture Organization (FAO) on increasing production, and be linked to efforts to reduce forest degradation via REDD. This will include interventions to involve multiple stakeholders and sectors in strategic planning to reduce pressures on biodiversity, improve ecosystem management, facilitate sustainable use, and manage trade-offs. It will also include efforts to ensure that no species of wild fauna or flora is unsustainably exploited through international or national trade.

UNDP will also work with a range of producers—from small-scale farmers or fishers to representatives of large-scale commercial operations—to increase their capacity to determine sustainable off-take rates for resources, practice sustainable production, and establish and adapt ecosystem management strategies and mechanisms. The focus here will be on working with champions in each sector who have shown willingness to be engaged in conservation issues, and who could serve as role models for the production sector and stimulate replication of successful interventions.

Special emphasis will be placed on reducing land degradation and supporting sustainable land management. Human activities can degrade land and have a negative impact on water, soil and biological resources, affecting the lives and livelihoods of vulnerable communities, and restricting options to develop productive areas sustainably. Evidence of degradation can be seen when land resource potential is lost through

desertification and deforestation. Using sustainable land management approaches, UNDP will work with governments and producers to reduce pressures on ecosystem integrity and functioning from competing land uses across production landscapes.

UNDP is also working—in line with UNDP's Extractive Industries Strategy—to change policies and guidelines in extractive industries, such as metal, oil and gas mining, in order to minimize negative impacts on biodiversity in production landscapes and seascapes, using the avoid-reduce-offset hierarchy of measures for managing threats to biodiversity.

UNDP fully supports sustainable development of the tourism sector, including small to medium-sized nature-based tourism initiatives that generate economic alternatives for local communities.

UNDP also promotes sustainable harvesting of non-timber forest products and other species, generating sustainable livelihoods and enhancing resilience. This includes artisanal production based on goods such as natural fibres and medicinal herbs. UNDP is working to promote benefit sharing with countries and communities that are providers of genetic resources and traditional knowledge, and has undertaken related work on diversity of indigenous crops.

**The UNDP 'Arab Development Challenges Background Paper 2011 — Sustainable Development & Green Economy in the Arab Region' shows that some countries in the region have succeeded in achieving rapid rates of improvement in terms of human development indicators. However, oil-export revenues and oil reserves are expected to gradually decline over the coming decades, and the sustainability of this progress is under review. Countries across the region are now intensifying efforts to diversify their economies beyond oil exports. More equitable and sustainable use of resources will come into greater focus, with transformational changes now taking shape across the region. Communities are demanding more transparent, accountable and participatory use of the region's rich resources and an end to the squandering of its natural wealth.**



**Forgotten Crop Varieties and Landraces Make a Comeback in Georgia**

The UNDP supported GEF financed project ‘Recovery, Conservation and Sustainable Use of Georgia’s Agrobiodiversity’, is promoting the reintroduction and sustainable use of the country’s unique genetic heritage by improving access to traditional seed stocks and planting material, providing extension services to farmers, and facilitating experience-sharing among farmers, research stations, and other stakeholders. Implemented by UNDP and executed by Local Biological Farming Association Elkana, the project has now established a seed multiplication system to encourage local farmers to join the agrobiodiversity programme. Between 2004 and 2009, 28 landraces and varieties (52 percent of all known for Georgia) were being used for subsistence production, and 7 landraces (13 percent of all) were in commercial use again. Since the start of the project, participating farmers and cooperatives have confirmed higher incomes from trading their harvests and seeds. The six revived native legume crops are now sold to retailers on the local market at a 10 percent premium over the common beans widely spread and imported into Georgia. For the last three years, the volume of sales has been growing at almost 100 percent every year and new markets are opening up in neighbouring Azerbaijan.



## PART 2: UNDP BIODIVERSITY AND ECOSYSTEMS GLOBAL FRAMEWORK IN RESPONSE TO THE CBD STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

Going forward, UNDP is committed to biodiversity and ecosystem mainstreaming work that:

- Promotes the holistic valuation of biodiversity and ecosystem services to strengthen the business case for investments by governments and the private sector.
- Internalizes the value of biodiversity and ecosystem services within national and sub-national plans, policies and accounting frameworks.
- Promotes engagement with sectors in production landscapes and seascapes to mainstream biodiversity and ecosystem management objectives.
- Works with countries to access traditional and innovative biodiversity financing and markets.
- Promotes sustainable use of biodiversity and facilitates agreements on Access and Benefit-Sharing (ABS) for genetic resources and traditional knowledge.
- Builds capacities in all aspects of the biodiversity-development interface.

Potential areas of activity under Signature Programme 1 are listed in Annex 2.

**Signature Programme 2:** Unlocking the potential of protected areas, including indigenous and community conserved areas, to conserve biodiversity while contributing to sustainable development.

UNDP-managed projects in the Cape Floral Kingdom of South Africa have employed a broad landscape approach to biodiversity conservation. The UNDP publication 'Biodiversity for Development' notes this involves working both within and beyond the boundaries of protected areas, to manage a mosaic of land uses, including protection, restoration, production and subsistence uses, in order to deliver ecological, economic and social benefits. Partnerships between the South African government and civil society through 'landscape initiatives' have been very effective in generating new biodiversity-based livelihoods and ensuring that biodiversity is taken into consideration in land-use planning. Mapping has been undertaken of critical biodiversity areas and pieces of land that need protection in order to promote connectivity between protected areas. Conservation stewardship work with private and communal landowners has led to many agreements with conservation agencies to protect biodiversity on their land.

Recognizing the potential of protected areas to support human development, UNDP works to unlock the potential of terrestrial and marine protected area systems so they are effectively managed and sustainably financed, and contribute to sustainable development. Countries are assisted to establish governance frameworks that strategically expand and strengthen the management and financing of protected areas at the systems level, promoting co-management with local communities to maximize effectiveness and economic benefits. This work will strengthen the rights of these communities to sustainable use of resources, while developing their capacity to fulfill their responsibilities. It will also support indigenous and community conserved areas, promoting secure land tenure and effective management. Expansion of protected area systems will increase tourism revenues, business development and job opportunities. Sustainable financing will be promoted so that protected areas can continue to generate inclusive growth, while protecting threatened species and eco-regions, acting as a buffer against climate change-related disasters, and maintaining a supply of clean water. New marine and coastal protected areas will help maintain and rebuild fish stocks on which the livelihoods of coastal communities depend.

Protected areas (PAs) are important tools for conservation of biological diversity and sustainable development. They are major sources of material and non-material wealth, with important natural, cultural and social capital. They provide vital biodiversity benefits and ecosystem services, as well as investment and employment opportunities for many people, including local and indigenous



populations. They may also help humans and wildlife adapt to the impacts of climate change, by securing ecosystem services and by mitigating climate change through the storage and sequestration of carbon.<sup>xxvi</sup>

Under SP2, UNDP will assist countries in establishing governance frameworks that strategically expand and strengthen the management and financing of protected areas, in order to unlock their economic potential and support sustainable development.

SP2 responds to many of the trends that led to the ratification of the CBD's Programme of Work on Protected Areas (PoWPA) in 2004—including inadequacies in protection of key ecosystem types, policy environments, financial mechanisms and management practices. UNDP will continue to support Element 2 of PoWPA, which focuses on governance, participation, equity, and benefit sharing, by linking protected area management more closely to the development agenda. It will also continue to pioneer a rights-based management paradigm based on co-management among communities living in or near protected areas, governments and, in some instances, the private sector. Community Conservation Areas (CCAs) and Indigenous Community Conserved Areas (ICCAs) will be expanded and strengthened.

Protected areas can provide benefits based on the development of sustainable tourism, sustainable utilization of natural resources (such as fish and medicinal plants), and markets for ecosystem services (such as carbon sequestration or the provision of fresh water). A strong governance focus is needed to ensure that benefits are equitably shared, human rights are preserved and the interests of indigenous groups and communities are protected.<sup>xxvii</sup>

UNDP will place significant emphasis on supporting the development and management of marine and coastal protected areas, which face major threats such as overfishing, lack of control over trawling and anchoring sites, inappropriate tourism development, and ineffective waste management. Expansion of marine and coastal protected areas will help countries prevent further degradation of these ecosystems, replenish fish stocks, manage climate risk, and meet conservation targets.





### The Early Action Grant Project for Protected Areas

Since 2004, when Parties to the Convention on Biological Diversity ratified the Programme of Work on Protected Areas (POWPA), UNDP has supported nearly 150 protected area projects in more than 100 countries, with a budget of nearly US\$ 400 million.

In direct response to the creation of POWPA, UNDP established a fast-disbursing mechanism to assist eligible countries. The US\$ 9.4 million project, which began in 2008, included 47 countries, the majority of which were Least Developed Countries and Small Island Developing States. The aim of the project was to enable countries to take early actions that were critical to implementing the Programme of Work on Protected Areas, such as developing time-bound and measurable targets and indicators for protected areas; assessing the status of governance types and categories within the protected area network; completing an ecological gap assessment; and integrating protected areas into the wider landscape, seascape, and production sectors. The project provided streamlined access to funding and has had impressive outcomes for a relatively modest cost (less than US\$ 60,000 per activity)—22 countries have completed a gap assessment; countries have assessed and improved the diversity of governance types; 16 countries have assessed and improved the legal framework for protected areas; 20 countries have initiated capacity strengthening programmes; and 8 countries have developed sustainable finance mechanisms. .

Going forward, UNDP is committed to supporting governments in designing protected area policies and programmes that:

- Strengthen the ability of protected areas to maintain and enhance ecosystem services;
- Promote access to traditional and innovative financial mechanisms for protected areas; and
- Enable protected areas to secure local and sustainable livelihoods.

Note: Efforts to climate-proof protected areas through ecosystem-based adaptation and mitigation approaches are addressed under SP3.





### Strengthening the Protected Areas System in Namibia

In Namibia, UNDP supported GEF financed work is assisting the government to identify, combine and sequence funding from different sources to finance protected area management. One of the major financial barriers affecting PAs in many countries is under-valuation of their economic benefits, resulting in under-investment by the governments. The results of the economic analysis carried out by UNDP indicated that the PA system contributed up to 6 percent of Namibia's GDP, counting park-based tourism only without including other ecosystem services values, and the economic rate of return on the government investment over 20 years was as much as 23 percent. The study showed that further investment in PAs could lead PAs to contribute up to 15 percent of GDP in the medium term. These study results were used by Namibia's Ministry of Environment and Tourism to negotiate an increase in the state budget for park management and development by 310 percent in the last four years and in addition, to earmark 25 percent of park entrance revenues for reinvestment in the PA system through a trust fund, providing up to US\$ 2 million additional financing per year. UNDP is implementing similar initiatives across the world, including in Chile, Venezuela, Haiti, Zambia, Egypt, the Ukraine and Malaysia.

Potential areas of activity under Signature Programme 2 are listed in Annex 3.

**Signature Programme 3:** Managing and rehabilitating ecosystems for adaptation to and mitigation of climate change.

UNDP will support countries in incorporating nature-based solutions into their strategies for adapting to and mitigating the negative impacts of climate change. Ecosystem-based adaptation will help vulnerable



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communities to increase their resilience, and the resilience of the ecosystems on which they depend. Large-scale rehabilitation projects will create work opportunities. In addition, expanding and connecting protected areas to conserve intact forests, wetlands, mangroves and coral reefs will provide a natural buffer for vulnerable communities against disasters intensified by climate change. Conservation and rehabilitation of natural ecosystems will also contribute to reducing greenhouse gas emissions. Countries will be supported in developing capacity and accessing new sources of finance to maintain and restore forests, peatlands, wetlands, tidal marshes, mangroves and seagrass beds that function as effective carbon sinks. Communities will be supported in achieving secure land tenure and accessing new sources of finance to manage these ecosystems effectively, using both traditional knowledge and innovative techniques.

**The term 'resilience' is applied in many different contexts, but usually refers to the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning—including shocks, such as price hikes or earthquakes, and stresses, such as temperature increases. The extent to which a community or society is vulnerable to such external disturbances, or on the other hand is resilient to them, depends on many factors, including, social, cultural, economic and institutional factors. Also important is the relationship between a community and the natural resource base on which it depends—how it is managed and what condition it is in. If the natural ecosystems on which a community depends are themselves resilient, this means they can withstand external disturbances and continue to supply goods and services to the community. If the ecosystems are not resilient, they are vulnerable to being damaged—by human-induced pressures, by natural disasters and particularly by climate change.**

The challenges of biodiversity loss and climate change are linked (as are the objectives of the UNFCCC, CCD, and CBD), and development strategies and plans are needed that coordinate ecosystem-based adaptation and mitigation efforts with climate change responses, through a mix of policy and financial instruments.<sup>xxviii</sup> UNDP promotes pro-poor ecosystem-based adaptation and mitigation approaches that foster inclusive, economic development and socio-ecological resilience to climate change. This means supporting countries in integrating climate-related risks and opportunities into national development and poverty reduction strategies and plans—drawing on traditional knowledge as well as modern technologies—to protect the natural resource base and address the needs and livelihoods of the most vulnerable groups, including women and indigenous peoples.

UNDP's biodiversity and ecosystems work will help communities and societies reduce their vulnerability to climate change, and build their overall resilience to shocks and stresses. This includes working with them to increase their adaptive capacity—responding with flexibility and innovation to changing conditions. The UNDP Asia Pacific Human Development Report 2012—'One Planet to Share: Sustaining Human Progress in a Changing Climate' shows how some communities can build on traditional strategies for managing risk, while becoming more attuned to the environmental, social and market changes taking place in their localities over time.



### Strengthening the Adaptive Capacity of Coastal Communities in Haiti

The UNDP supported GEF financed project 'Building adaptive capacity to address climate change threats for sustainable development strategies in coastal communities of Haiti' aims to reduce vulnerability to climate change by building sustainable human and environmental adaptation capacity. Funded through the Least Developed Country Fund (LDCF) and building on Haiti's National Adaptation Plan of Action (NAPA), it demonstrates that ecosystem management and biodiversity conservation can play an important role in reducing human and natural vulnerability to the multiple threats of climate change. Key activities of the project include: capacity building to maintain economic and ecological safety nets as coping mechanisms during climate change events; adaptation measures implemented in the agriculture and water management sector in coastal areas to reduce vulnerability and maintain ecosystem services; and knowledge sharing across different development sectors. Key project results include: regular institutional capacity-building support to the Ministries of Environment, Agriculture and Finance on integrating climate change adaptation measures into national policies and local development plans; country-wide vulnerability and adaptation assessments for the water and agriculture sectors; and field studies to determine the best adaptation measures to increase ecosystem resilience for water and food sectors in southern Haiti, the most vulnerable region in the country.

Under SP3, UNDP is committed to working with countries to:

- Promote ecosystem resilience to climate change;
- Foster ecosystem-based adaptation to climate change;
- Implement ecosystem-based climate change mitigation solutions; and
- Strengthen the ability of protected areas to support climate change adaptation and mitigation.

Potential areas of activity under Signature Programme 3 are listed in Annex 4.



### **‘Great Steppes’ Forward in Mongolia through Ecosystem-Based Adaptation**

Although 60 percent of Mongolia’s population now lives in towns, nearly 40 percent of the people are reliant on subsistence livestock herding. The livelihoods of these nomadic communities are completely dependent on the ability of the ecosystem to provide surface water and pasture. In recent years, herders have noticed a marked change in rainfall patterns and an increase in temperatures. The hydrological system has also changed, altering the volume and timing of river flows and floods. Soil infiltration rates and water storage capacity have declined, resulting in deteriorating pasture quality and quantity. In addition, the occurrence of summer droughts and extremely severe winter weather events called ‘dzuds’ has increased. The 2010 dzud killed over 25 percent of the livestock in the whole country, affecting 700,000 people. Changes in climatic patterns are already having noticeable impacts on the herders, exacerbating already serious land degradation problems.

Launched in 2012, the ‘Ecosystem-Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia’, co-funded by the Adaptation Fund, the Government of Mongolia and UNDP, is working with communities, local and national governments, and NGOs in the Altai and Eastern Steppe landscapes. The project combines traditional knowledge and technological innovation to maintain water provisioning services supplied by mountain and steppe ecosystems, and to incorporate climate change risk responses and ecosystem resilience principles into land use and water resource planning and management at the landscape level. The project applies the principles of Ecosystem-Based Adaptation—working to protect ecosystems and maintain essential ecosystem services in order to reduce the vulnerability of people to climate change impacts.



### C. Knowledge for Biodiversity and Ecosystems

UNDP's Strategic Plan (2008-2013) aims to position the agency as a world class knowledge-based development organization by: sharpening and clearly articulating UNDP's knowledge niche; further developing the knowledge platform and systems needed to capture and apply country-level development experiences and individual know-how; translating knowledge into actionable strategies at the country level; and putting in place incentives for knowledge capture and transfer at all levels. This is critical to support UNDP's Biodiversity and Ecosystems portfolio. Two strategic priority areas for knowledge management for the period 2012 to 2020 are outlined below: South-South cooperation and knowledge exchange, and knowledge management within the UNDP Biodiversity and Ecosystems team.

#### *South-South Cooperation and Knowledge Exchange*

South-South cooperation is a core element of UNDP's global development approach. UNDP's Biodiversity and Ecosystems Global Programme, which includes the Equator Initiative and the UNDP-implemented GEF Small Grants Programme, has done extensive work in facilitating learning and knowledge sharing, especially among civil society actors, within and between many countries, bridging the local-global divide. Many UNDP supported GEF financed projects in the Biodiversity and Ecosystems portfolio have actively incorporated South-South cooperation and mutual learning, and the portfolio has documented many local-level best practices that can be scaled up.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), established in April 2012, is expected to become a core tool for providing assistance to countries in meeting their commitments to the three Rio Conventions and other multilateral environmental agreements, by improving the interface between science, policy and implementation. In response to repeated calls from developing countries for a commitment of resources to ensure that the new IPBES has a strong focus on capacity building, UNDP is currently engaged with UNEP and the UNEP-World Conservation Monitoring Centre, UNESCO, the CBD Secretariat, the Government of Norway, and other partners to explore the potential for establishing a capacity building facility for IPBES.





### **UNDP PES/REDD Capacity Building for Local Communities: Workshop Series**

Over the last two years, the Forest Trends Communities and Markets Programme has co-organized a series of workshops with local NGOs in Brazil, Peru, Central America, and Uganda, reaching hundreds of community leaders and other stakeholders. These workshops have generated awareness of payments for ecosystem services and other compensation schemes and the potential use of emerging environmental markets as instruments for improved territorial governance, community benefit sharing and conservation. In addition, the workshops have provided training on specific skills and information relating to REDD and PES, facilitating innovative opportunities for South-South cooperation between UNDP GEF projects. Two of these workshops brought together leaders of community-based organizations from Brazil, Peru and Bolivia to share their experiences and to develop common strategies to address conservation challenges in the Amazon (encompassing the regions of Madre de Dios in Peru, Acre in Brazil and Pando in Bolivia). Another workshop, held near Lima, Peru, brought together over 40 indigenous leaders from throughout Latin America to discuss REDD readiness, local experiences with piloting REDD projects, and how to influence the evolving REDD policies in their respective countries. To facilitate these interactions, the Forest Trends Communities and Markets Programme launched the Community PES/REDD Peer Network initiative. It is designed to foster a network for leaders of rural and indigenous communities to exchange experiences, knowledge and strategies aimed at securing their participation and benefit sharing in environmental markets.

A proposed 'BES-Net' facility for knowledge exchange and capacity building could involve both a web-based portal and face-to-face activities directly supporting the work streams and priorities of IPBES in a focused manner, including assessment, knowledge generation, policy-support tools and methodologies, and access to data, information and knowledge. The web-based platform could enable online learning, knowledge sharing, dialogues, answers to queries, matching of needs and expertise, and professional development. Face-to-face



activities could be delivered through a network of existing centres of excellence around the world, whose recognition could facilitate geographic, thematic and functional contributions by potential partners.

Capacity building for IPBES is expected to facilitate communication and learning among scientists, policy-makers, and local communities and indigenous peoples, and could generate new resources for South-South cooperation. It could build on the UNDP Ecosystems and Biodiversity team's network and experience to facilitate peer-to-peer knowledge exchanges on policy best practices and lessons learned, and analysis on emerging South-South impacts and natural resource flows related to biodiversity and ecosystems.



### **Exchange Visits to Share Experience and Best Practices in Marine Protected Area Management**

Representatives from Chile, Argentina and Cuba undertook exchange visits to share experiences and best practices in marine protected area management. Participants in the project 'Conserving Globally Significant Biodiversity along the Chilean Coast' project visited the Cuban 'Priority Actions to Consolidate Biodiversity Protection in the Sabana-Camaguey Ecosystem' project areas and held working meetings with the project team to discuss experiences from the various UNDP supported GEF financed projects in the archipelago. This was of great importance as the Chile project was setting up the first marine and coastal protected area in the country and learned from the experience of long-term work in Sabana-Camaguey. In the case of Argentina and Chile, the project teams held meetings to discuss the challenges of MPA management, building community awareness, and fostering participation of sub-national government in MPA management. Exchanges were also held on best practices for artisan fisheries with the Argentina 'Consolidation and implementation of the Patagonian Coastal Zone Management Programme and biodiversity conservation' project describing best practices.



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### *Knowledge Management Within the UNDP Biodiversity and Ecosystems Team*

The UNDP Biodiversity and Ecosystems team as a whole has developed a large body of work—particularly through UNDP supported GEF financed projects—that is widely respected and considered to be representative of global best practices, including many innovative and cutting-edge approaches. In the years ahead, it is anticipated that this will be captured more systematically, linking lessons and good practices to UNDP’s upstream policy work and sharing them with external partners. This work will promote the replication of successful models, and enable learning and improvement based on what has been less successful, linking to UNDP’s results-based management systems and involving critical self-analysis.

Achievements will also be effectively showcased through communications products, in order to improve the visibility of the work of countries, UNDP and funding partners such as the GEF. Communication and learning media will include brochures, publications, journal articles, documentaries, video clips, online material, social media updates and media releases. These efforts will build on several important publications over the past few years showcasing the team’s work, and in the future will provide more comprehensive coverage of key topics, regions, areas of work and signature programmes. This will include the group’s work on land degradation and sustainable land management.

In addition, the Biodiversity and Ecosystems team will address new knowledge needs as these arise in relation to emerging areas of work. In 2012, for example, these areas include: Access and Benefit Sharing work; ecosystem-based adaptation to climate change; mitigation through conserving the ‘blue carbon’ of mangroves, seagrasses and salt marshes; securitization of tenure in indigenous and community conserved areas; new sources of finance for biodiversity management including from emerging economies, and creation of biodiversity-related jobs.

An internal learning mechanism will be established to strengthen team capacity regarding these areas of work, promote peer-to-peer training on cutting-edge projects, and accelerate knowledge exchange. This mechanism will also serve as an important networking interface with other units, practices and clusters within UNDP, including teams focusing on UNDP’s poverty, gender, civil society and private sector work.







### D. Partnerships for Biodiversity and Ecosystems

UNDP puts partnership at the centre of all aspects of the agency's work. As the lead agency within the UN system helping countries to develop capacity for biodiversity management, its success depends on mobilization of effective strategic partnerships with governments and the private sector, NGOs and community-based organizations. Partnership synergies are found at all stages of UNDP biodiversity work, including project and programme management, capacity development, resource mobilization and co-financing, advocacy and communications.

Key partnerships are outlined below.

#### *Programme Countries*

As a trusted multilateral partner serving 177 countries and territories around the world, UNDP is uniquely positioned to help advocate for change, connect countries to the knowledge and resources they need and coordinate the efforts of the UN at the country level. UNDP will work closely with a range of ministries—including Ministries of Environment, Development, Planning and Finance—to manage biodiversity and ecosystems in line with national goals. UNDP helps governments to measure and understand the implications of biodiversity loss and ecosystem degradation for national development; strengthens their capacity to formulate, plan, budget and implement biodiversity and ecosystem policies that respond to unique national challenges; emphasizes the importance of public investments in biodiversity and ecosystem management; supports coordinated inter-institutional action; and advocates for actions for meeting the CBD Aichi Targets that are in line with the MDGs. Government commitment to these priorities is paramount to ensure tangible outcomes and results at the scale required, and is a key criteria for UNDP's support to countries.

In parallel, UNDP works with regional and local authorities to increase the role and influence of local government in national dialogues and decision-making, and to strengthen the capacity of local governance systems to address biodiversity and ecosystem management and environmental sustainability, climate change, local economic development and disaster risk reduction.

Going forward, UNDP will continue to work with national and sub-national levels of government to meet existing commitments to national and international goals and to address new commitments emerging from Rio+20 and future CBD and CCD COPs.

#### *International, National and Local Action Groups*

In recent years, civil society actors at the national and international level—in a wide range of formal and informal organizations outside the state and market—have developed substantive capacity and influence in varied development issues. Partnering with international, national and local action groups can help contribute to the effectiveness of biodiversity and development interventions, especially with respect to marginalized and vulnerable populations.

Going forward, UNDP will continue to facilitate the participation of poor and vulnerable populations in the design and implementation of biodiversity and ecosystem management policies and programmes. UNDP will work with NGOs, CBOs and indigenous groups as core project partners to create the bottom-up demand



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and broad-based social mobilization that fosters responsive biodiversity and ecosystem governance. Local organizations will play a critical watchdog role in monitoring the progress of projects and policies towards biodiversity and ecosystem management objectives.

### *Local Communities*

UNDP is committed to realizing the potential of local communities to use their environmental resources to generate sustainable sources of income and empowerment. National governments and international organizations will be encouraged to acknowledge the potential of local action to achieve development goals—and to provide the resources, rights, training and opportunities for local actors to realize this potential.

In addition, UNDP will work to strengthen and amplify community voices in policy-making by bridging upstream policy work (national and international enabling conditions) and downstream delivery work (local resource management and project delivery). Work will ensure peer-to-peer learning, knowledge sharing, and documentation of best practices to make local action more effective, sustainable and replicable.

### *Development Partners*

UNDP works closely with a range of development partners, including other UN agencies, multilateral financial institutions (such as the World Bank and Regional Development Banks), research and science organizations, donors, and foundations committed to the conservation and sustainable use of biodiversity and ecosystem services. Important current partners in UNDP's biodiversity and ecosystems programme include the Governments of Germany, Japan, Norway and the European Commission, and a number of other government partners have expressed interest in further engagement.

### **Global Environment Facility**

For more than two decades, UNDP and the Global Environment Facility have been leaders in addressing development, climate and ecosystem sustainability in an integrated manner. As the UN system's development programme and a GEF implementing agency since 1991, UNDP has built an extensive and pioneering biodiversity and ecosystems portfolio to support countries in expanding and managing protected area systems to promote sustainable development, and to integrate biodiversity and ecosystem management into economic sector activities. Partnership with the GEF is a cornerstone of UNDP's biodiversity and ecosystems work.





### **Integrating Biodiversity into Economic Sectors and Controlling Invasive Alien Species Pathways in the Seychelles**

Since 2007, the Seychelles has been working with the UNDP supported GEF financed Mainstreaming Programme on two innovative projects addressing major threats to its biodiversity. The 'Mainstreaming Biodiversity Project' seeks to strengthen systemic and institutional capacities for mainstreaming biodiversity management. The project is developing methods for integrating biodiversity into artisanal fisheries management. In many respects, the project is helping to make biodiversity conservation a routine part of business operations in the tourism sector. The 'Mainstreaming Biosecurity Project' addresses the threats posed to the Seychelles' biodiversity by the introduction of invasive alien species through the movement of people and merchandise into and within the country. Following the principle that 'prevention is better than cure', the project is addressing three sets of barriers affecting responses to this threat: capacity deficits inherent in the policy and regulatory framework, capacity weaknesses within institutions, and inadequate technical capabilities.

#### *UN Partners*

As the UN's development network, UNDP advocates for change and connects countries to knowledge, experience and resources to make a difference in peoples' lives. UNDP works with 177 countries and territories on their own solutions to global and national development challenges. Through its responsibility for the Resident Coordinator system, which encompasses all organizations of the UN system dealing with operational activities for development at the country level, UNDP works closely with a number of other



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UN agencies and organizations at the national level in the biodiversity and ecosystems management field, including UNESCO, FAO and the International Fund for Agricultural Development (IFAD), among many others. UNDP also works in partnership with the UN Regional Commissions.

At the global level, UNDP works closely with UNEP across a range of initiatives including the UNDP-UNEP Poverty and Environment Initiative (PEI), the UN-REDD programme (in collaboration with UNEP and FAO), providing support to the development of IPBES (with UNEP, FAO and UNESCO), and in joint partnership with UNEP and IUCN on Ecosystem-Based Adaptation work. Going forward, UNDP will also work closely with UNEP to support implementation of the Green Economy initiative.

In addition, UNDP has established useful links with the UNEP-World Conservation Monitoring Centre (UNEP-WCMC); together UNDP and WCMC are working to develop ideas for capacity building for IPBES (also with the Government of Norway's Directorate for Nature Management), and support the development of the new generation of NBSAPs.

### *World Bank and Regional Development Banks*

UNDP recognizes the groundbreaking efforts of the World Bank and the Regional Development Banks in supporting the integration of environment objectives into poverty reduction and development strategies. Future collaboration will take place through the Wealth Accounting and Valuation of Ecosystem Services (WAVES) partnership, which seeks to promote sustainable development by ensuring that the national accounts used to measure and plan for economic growth include the value of natural resources.

### *Private Sector*

UNDP acknowledges the potential of the private sector in development as a crucial partner for creating jobs, providing affordable goods and services, and generating innovative technologies and solutions for sustainable development. In recent years, UNDP has partnered with the public and private sectors to advocate for the notion of inclusive markets and inclusive business, through pioneering initiatives such as Growing Sustainable Business (GSB), Growing Inclusive Markets (GIM), Business Call to Action (BCtA), and more recently through the establishment of the first International Centre for Private Sector in Development (ICPSD) and the new Green Commodities Facility (GCF).

UNDP collaborates with companies that are committed to inclusive business and corporate responsibility, along with business groups, traditional donors and other development partners, to promote collective action for sustainable development. UNDP's strategic focus is to strengthen inclusive market systems that are pro-poor—whether on the supply side by integrating poor and excluded groups as producers, entrepreneurs or employees, or on the demand side, by supporting the delivery of key goods and services to low-income consumers. UNDP serves as a broker and coordinator in bringing concerned stakeholders together and in engaging with relevant external technical partners. Over the last 10 years, UNDP has worked in over 200 partnerships with the private sector as well as foundations, mainly through cost-sharing or in-kind contributions. Between 2008 and 2010, 44 UNDP country offices and regional bureaus around the world reported programming involving the private sector that amounted to approximately US\$ 295 million.



Going forward, UNDP will work with governments to regulate the conduct of industry in production landscapes and seascapes so as to reduce the adverse impact of industry on biodiversity. There is an urgent need to advocate for universal adoption of the ‘avoid-reduce-offset’ paradigm to provide guidance when the executive decisions of companies affect the balance of ecosystems within countries. Promoting this paradigm through national policy change and site-level demonstration is the essence of UNDP’s work in this field.



### **Green Commodities Facility—Investing in Livelihoods and Markets for Sustainable Development**

UNDP’s Green Commodities Facility helps countries finance and market climate-resilient cash crops, linking producers of green commodities with markets, and promoting public-private partnerships to transform supply chains. Its mission is to connect national governments and farmers with global markets in order to scale up sustainable agricultural production. UNDP’s work on green commodities targets three challenges: the encroachment of farmland into natural habitats, the harmful effects of intensive agricultural production on biodiversity and ecosystems, and the high level of greenhouse gas emissions associated with commodity production. The Facility contributes to transformational change with innovative National Commodity Platforms that bring together stakeholders involved in a particular commodity value chain. The platforms forge public-private partnerships and provide a mechanism for supply chain stakeholders to promote sustainability. In Ghana, the Green Commodities Facility formed a strategic partnership with the private sector to support institutional efforts for sustainable cocoa production. The Cadbury Cocoa Partnership brings together Kraft Foods, the Government of Ghana, and several non-governmental organizations to promote the economic, social and environmental sustainability of the cocoa sector. The Partnership focuses on boosting incomes by helping farmers increase the quality and quantity of production; introducing new sources of rural income through microfinance and business support; and building government capacity for policy reform. The Green Commodities Facility acts as a special advisor to the National Cocoa Board in Ghana and helped develop Ghana’s first environmental strategy for the cocoa sector.



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### *Parallel Initiatives under Development or Implementation*

The UNDP Biodiversity and Ecosystems Global Framework has been, and will be, informed by other initiatives under development or implementation, including the Intergovernmental Panel on Biodiversity and Ecosystems (IPBES), The Economics of Ecosystems and Biodiversity initiative (TEEB), the UN-REDD and REDD+ partnerships, the World Bank-led initiative Wealth Accounting and Valuation of Ecosystem Services (known as WAVES), the System of Environmental and Economic Accounting (SEEA), and Natural Capital, as well as the innovative work in the bio-carbon sector being undertaken in the voluntary carbon market (notably the Verified Carbon Standard (VCS). Collaboration with these initiatives will intensify during implementation of the Framework.





Biodiversity and ecosystems<sup>xxxix</sup> provide a vast range of goods that human societies depend on for their survival and wellbeing, including food, water, fodder, fuel wood, timber and pharmaceutical products. In addition, they provide ecosystem services that support life by: purifying air and water, maintaining biodiversity, generating and preserving soils and renewing their fertility, pollinating crops and natural vegetation, dispersing seeds, detoxifying and decomposing wastes, cycling and moving nutrients, controlling the majority of agricultural pests, protecting coastal shores from erosion by waves, mitigating droughts and floods, partially stabilizing the climate, and moderating weather extremes and their impacts. The rich diversity of life found in natural ecosystems also plays an essential role in many aesthetic, cultural, religious, mystical and spiritual traditions.

Biodiversity loss and ecosystem degradation lead to a reduction in these valuable goods and services.<sup>xxx</sup> This has negative effects on many aspects of human wellbeing, such as access to food, energy, clean water and raw materials, and vulnerability to natural disasters. Human health and social and political relations are also affected.<sup>xxxi</sup>

Healthy ecosystems provide resources for people to earn incomes and secure sustainable livelihoods. While the connection to agriculture is most widely recognized, biodiversity and ecosystems contribute to a range of other economic sectors, including tourism, pharmaceuticals and fisheries. Losses can impose substantial costs, and reduce the ability of poor communities to adapt to economic, ecological and conflict-related disturbances. In many developing countries, the wellbeing and welfare of women, youth and vulnerable groups are particularly highly correlated with ecosystem health and availability of natural resources.

Recent assessments of global biodiversity and ecosystems have found that species are continuing to decline, the risk of extinctions is growing, and natural habitats are becoming increasingly damaged, lost or fragmented.

- UNDP's 2011 Human Development Report, 'Sustainability and Equity—A Better Future for All'<sup>xxxii</sup>, underlines that a failure to reduce grave environmental risks and deepening social inequalities threatens to slow decades of sustained progress by the world's poor majority—and even to reverse global progress on human development.
- The United Nations Environment Programme (UNEP) report, 'Keeping Track of Our Changing Environment: From Rio to Rio+20', published in 2011, examined changes in the global environment since 1992 and reported that all components of the environment—land, water, biodiversity, oceans and atmosphere—have been degraded.<sup>xxxiii</sup>
- The 'Third Global Biodiversity Outlook'<sup>xxxiv</sup> published in 2010, identified the five principal direct drivers of biodiversity loss as habitat disturbance, pollution (especially nutrient loading), over-exploitation, invasive alien species and, increasingly, climate change. The report listed multiple indications of continuing declines in biodiversity in terms of genes, species and ecosystems. It particularly highlighted

**At the Stockholm Resilience Centre, researchers have identified nine safe 'planetary boundaries' outside of which the Earth system cannot function in a stable state to support humanity. The nine boundaries identified relate to: climate change, stratospheric ozone levels, land use change, freshwater use, loss of biological diversity, ocean acidification, nitrogen and phosphorus inputs to the biosphere and oceans, concentrations of aerosols in the atmosphere, and chemical pollution. Three of these boundaries (those relating to climate change, biological diversity and nitrogen input to the biosphere) may already have been crossed. It is also clear that the boundaries are strongly connected—crossing one boundary may seriously threaten the possibilities for staying within safe levels with regard to the others.**



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serious declines in freshwater wetlands, sea ice habitats, salt marshes, coral reefs, seagrass beds and shellfish reefs, and described extensive fragmentation and degradation of forests, rivers and other ecosystems, which have led to the loss of biodiversity and ecosystem services.

- The international initiative on The Economics of Ecosystems and Biodiversity (TEEB) estimates that global biodiversity loss and ecosystem degradation may represent a global financial loss of up to US\$ 4.5 trillion annually. TEEB also projects that coral reefs could die out in the next 20 years, with a reduction in natural hazard management services worth up to US\$ 189,000 per hectare per year (including protection of shorelines from waves and storm surges).
- ‘Environmental Outlook to 2030’, a report published by the Organization for Economic Cooperation and Development (OECD) in 2008, indicated that many of the world’s aquifers are becoming depleted or polluted, and estimated that by 2030 almost half of the world’s population will be living under severe water stress.
- The UN World Water Assessment Programme estimates that the cost of environmental degradation related to water loss in the Middle East and North Africa is approximately US\$ 9 billion a year, or 2.1 to 7.4 percent of GDP.

There are increasingly powerful drivers of change threatening biodiversity and ecosystems—including current unsustainable production and consumption patterns, resource scarcity, changes in demographic trends, climate variability, economic inequities, political dynamics, and urbanization. The solutions to halting biodiversity loss and ecosystem degradation lie in sustainable development: development that does not compromise natural systems and services.

### *Biodiversity Loss, Poverty and Development*

**Persistent poverty is linked to the loss of biodiversity and ecosystem functioning. Several Millennium Development Goals—including the eradication of extreme poverty and hunger, the improvement of maternal health and women’s status in society, the reduction of child mortality, and economic development—are at risk from the neglect and deterioration of biodiversity and ecosystem functioning.**

Many of the 1.2 billion people living in severe poverty, especially those in rural areas in developing countries, depend directly on biodiversity and natural systems for their basic necessities, including food, fuel, shelter, and medicines, as well as provision of clean water, grazing for livestock, availability of crop varieties, maintenance of traditional cultures, and disaster mitigation. As a result, they are significantly affected by degradation of natural resources and increasing climate variability. Longer droughts, more severe storms and flooding, species depletion, soil degradation, desertification, deforestation, and other negative alterations to the natural environment impact them first, and most severely. Women and girls in rural areas are especially vulnerable to biodiversity loss and ecosystem degradation, given their traditional responsibilities as food growers, water and fuel gatherers, and caregivers.<sup>xxxv</sup>

A common finding from the various sub-global Millennium Ecosystem Assessments, completed in 2005, was that many people living in rural areas value the availability of a variety of biodiversity and natural resources as elements of a ‘risk management strategy’ and are sceptical about solutions that reduce their options.



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Ecosystems with numerous species, food sources, landscapes and seascapes serve as ‘savings banks’ that rural communities can use to cope with changes and ensure sustainable livelihoods.<sup>xxxvi</sup> A study from India, reported by TEEB in 2008, showed that ecosystem services contributed up to 57 percent of the GDP of the poor.

Urban populations, including the urban poor, also rely on biodiversity and natural ecosystems, not only for food and other necessities, but also for maintenance of air and water quality, decomposition of waste, protection from storms and other disasters, and production of electricity. For example, 60 percent of the hydroelectricity consumed in Peruvian cities and towns comes from rivers in protected areas<sup>xxxvii</sup>, and preservation of wooded areas helps prevent landslides that can engulf slums found at the edge of cities. Almost half of the world’s population now lives in urban areas, and fifteen of the world’s twenty-one megacities (ten million inhabitants or more) are found in developing countries. Sixty percent of the world’s largest urban areas, with a population of over five million, are located within 100 kilometres of the coast, where they are vulnerable to storm damage compounded by loss of natural coastal protection.<sup>xxxviii</sup> Cities also contribute to greenhouse gas emissions that are accelerating climate change. The current climate footprint from buildings is equivalent to 8.6 billion tons of carbon dioxide a year, and is predicted to almost double to 15.6 billion tons by 2030.<sup>xxxix</sup>

As the world’s population becomes more urban, the demands and stresses on ecosystems and the services they provide will continue to mount. Demand for a range of resources is predicted to increase, as three billion more middle-class consumers join the global economy by 2030.<sup>xl</sup> By then, the world will need at least 50 percent more food, 45 percent more energy and 30 percent more water<sup>xli</sup>—just as the planet reaches multiple threshold boundaries and resource depletion limits.<sup>xlii</sup>

The United Nations Population Division has conservatively projected that the world’s population may reach 10.1 billion by 2100. As of 2012, the total is already seven billion people. Ninety-eight percent of the predicted global population growth is expected to occur in low-income countries where natural resources and ecosystems are already stressed, and where social services are limited. Severe food, water and energy shortages are predicted.<sup>xliii</sup> The poorest people will be hit hardest by these shortages, as well as the increasing frequency and intensity of natural disasters and the effects of climate change.

In 2010, the World Bank estimated that 44 million people were driven into poverty by rapidly rising food prices in the second half of the year alone.<sup>xliv</sup> Failure to manage the complex links between biodiversity, climate and poverty through integrated development approaches that safeguard ecosystem services is likely to lead to greater impoverishment and ecosystem degradation.

While wealthy societies may be able to replace ecosystem services with engineered solutions, the loss of natural ecosystem buffering services makes poor communities more vulnerable to the impacts of degraded environments and climate change, with enormous social welfare costs. Unlike the rich, the poor are unable to replace ecosystem services with built infrastructure—for example, by building flood control infrastructure once natural flood defences provided by forests and wetlands have been lost. Safeguarding natural services and defences is therefore of paramount importance for their protection.

In a vicious cycle, poverty may also lead to biodiversity loss and ecosystem degradation. People who have no resources except what they can harvest from natural ecosystems may not be able to survive if their access is diminished and there are no alternatives available. They are unlikely to be receptive to measures to change



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or restrict their land and resource use practices in order to protect ecosystems from long-term damage, if the immediate risks and costs to their wellbeing are high.

A further challenge arises because the poor receive only a fraction of the benefits derived from the extraction of natural resources, with greater profits accruing to others further up the value chain. For example, poor fishermen are paid relatively little for the fish they catch, and poor forest communities obtain few benefits from the sale of their timber. They therefore may be forced to harvest natural resources beyond their sustainable use thresholds, in order to meet their target incomes.

Lack of equitable access to and control over land and natural resources may also contribute to ecosystem conversion and degradation. Where these resources are controlled by a few, the landless poor may have no alternative but to encroach on natural ecosystems to eke out a living. Over-extraction or pollution of local ecosystems by unsustainable commercial fishing, mining or logging operations may also mean that poor communities lose access to essential resources.

On the other hand, protection of healthy and functioning ecosystems, accompanied by clear resource use rights and effective regulation, provides a natural asset base that the poor can use to generate livelihoods, and begin a process of wealth creation that can boost them beyond subsistence and into the mainstream of national economies. Sustainable harvests from forests, fisheries and farmed fields are a primary source of rural income, and a fallback when other sources of employment become unavailable. Improving local peoples' access to natural resources and their capacity to manage them sustainably as sources of income and sustenance can help them break the cycle of poverty, and increase their material and social assets.

The sustainable use and conservation of biodiversity is an important factor influencing future development options in developing countries with limited economic opportunities. These options may include, for example, developing a nature-based tourism industry or supporting natural resource sectors such as forestry, agriculture and fisheries that are dependent on ecological goods. Without such biodiversity-based options, these countries might not be able to pursue wealth creation strategies that reduce poverty.

Ensuring social equity, not just within and between countries, but across generations, is key to economic stability and development. The sustainable management of natural resources and ecosystem services is central to this. If the natural resource base is not managed for the long term, it cannot provide the fuel for inclusive and sustainable economic development on the scale demanded to relieve poverty and combat climate change.<sup>xiv</sup>

### *Biodiversity Loss and Climate Change*

Biodiversity loss both contributes to and is worsened by climate change. In the absence of a significant reduction in greenhouse gas emissions to reduce the rate of climate change, it is possible that the most vulnerable ecosystems, such as cloud forests and coral reefs, will cease to function in their current forms within a few decades.<sup>xv</sup> This will have serious implications for communities dependent on these ecosystems for their livelihoods and wellbeing.

As natural areas are drained, deforested or ploughed, biodiversity and ecosystem functioning are lost, and at the same time carbon dioxide and other greenhouse gases are released into the atmosphere, contributing to climate change. Climate change then causes further loss of biodiversity, as species unable to adapt to



increased temperatures or changed rainfall patterns become locally or even globally extinct. An increased extinction rate of 10 percent of species for every 1° Celsius rise in average global temperature is predicted.<sup>xlvii</sup>

Climate change represents a particular threat to the integrity and survival of the oceans. Scientists agree that oceans are undergoing profound physical, chemical and biological changes—they are becoming warmer and more acidic, and circulation patterns are changing in unpredictable ways.<sup>xlviii</sup> Tropical marine ecosystems are most endangered; they provide a range of vital services for more than 500 million people worldwide and support many of the world’s poorest communities, who rely on mangrove and reef-based fisheries and tourism revenue for food security and livelihoods.<sup>xlix</sup>

Many questions remain unanswered in terms of the biological and biogeochemical consequences of climate change, and the accurate determination of tipping points at which particular ecosystems will shift to a qualitatively different state, in which they may provide fewer services to humans. It seems that the eventual impact will depend not only on the rate and extent of climate change, but also on complex interactions between many variables, including the ability of ecosystems to adapt to change.

In this context, biodiversity conservation can make a critical contribution to moderating the scale of climate change and reducing its negative impacts by making ecosystems—and therefore human societies—more resilient. Policy-makers, conservationists, scientists and the broader community are increasingly calling for adaptive measures and actions that reduce non-climatic stresses while applying conservation and sustainable management strategies to restore and maintain the resilience of vulnerable ecosystems, and avoid worst case scenarios.<sup>1</sup>

Ecosystem conservation and restoration offer proven and cost-effective investment options to support climate mitigation and adaptation efforts. Solutions include: protection of natural forest and peatland carbon stocks; sustainable management of forests; use of native assemblages of forest species in reforestation activities; sustainable wetland and watershed management; restoration of degraded wetlands, watersheds and grazing and pasture lands; sustainable agricultural practices; and restoration of coastal ecosystems such as coral reefs and mangroves.

**Understanding the relationship between society and the natural environment is critical in order to ensure that development gains last. A society with healthy, diverse and functioning ecosystems is more resilient to external disturbances than a society in which natural ecosystems are destroyed or degraded to the point where they can no longer provide services. As the environment changes, either through natural shifts or those exacerbated by climate change, beneficial services provided by ecosystems, which support development progress, will change and in many cases diminish. For this reason, development interventions that build resilience to these environmental changes and shocks are essential for UNDP’s work in promoting sustainable development.**



## ANNEX 2: ACTIVITIES UNDER SIGNATURE PROGRAMME 1

**Activities under Signature Programme 1:** Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing.

Key action areas for UNDP-managed projects undertaken by countries include:

- Promoting holistic valuation of biodiversity and ecosystem services to strengthen the case for government investments by:
  - ▮ Undertaking studies and projects that explore the full range of benefits derived from biodiversity and ecosystem services, focusing on tangible values that relate to poverty alleviation targets and the economic benefits provided by terrestrial and marine protected areas, and on critical intangible cultural and spiritual values, as well on the costs to society of loss of biodiversity. The overall goal is to encourage governments to reflect the value of biodiversity and ecosystem services in national accounting systems and socio-economic decision-making. The valuation of ecosystem services is a prerequisite for the establishment of new finance mechanisms such as payments for watershed services.
  - ▮ Developing a methodology for integrating biodiversity into national development and sectoral planning and for quantifying and addressing the biodiversity financing gap. This includes producing action plans (with cost estimates) for key sectors; undertaking comprehensive assessments of current funding and future needs; and developing plans to access innovative sources of finance to fill the funding gap, with financing frameworks for implementation. Work on this issue is under way through UNDP in Latin America and the Caribbean, targeting national sector economic valuations, and exploring biodiversity and ecosystem benefits in relation to sector outputs and benefits, given a transition from 'business as usual' to sustainable ecosystem management in those sectors.
- Internalizing the value of biodiversity and ecosystem services into national and sub-national plans, policies and accounting frameworks by:
  - ▮ Supporting the development of the new generation of NBSAPs to directly address the biodiversity planning needs of the CBD Strategic Plan. These serve as relevant policy instruments, effectively integrating biodiversity and ecosystem services into development plans and activities, and development finance, as well as strategies, policies and activities aimed at managing climate risk. Ministries of Finance and other key ministries will be engaged to ensure effective mainstreaming.
  - ▮ Incorporating biodiversity into other major national, sub-national and sectoral plans including: invasive species strategies; action plans relating to land degradation and desertification, such as NAPs; climate change mitigation strategies and adaptation programmes; policies, legislation and procedures relating to trade in threatened species; food security, disaster preparedness, peace building and development plans, and early recovery programmes; land-use plans; marine and coastal management plans; water management plans; tourism and recreation plans; and private conservation plans, such as those for game reserves and ecotourism resorts.
  - ▮ Promoting supportive enabling policies and legislative frameworks for integrating biodiversity concerns into development strategies and investment activities, including policies to achieve securitization of local resource rights and land tenure. This work involves supporting governments in managing complex trade-offs between various sustainable development goals, and undertaking capacity development to implement these policies and frameworks.



- Promoting engagement with sectors in production landscapes and seascapes to integrate biodiversity and ecosystem management objectives by:
  - Supporting the development of traceability, verification and certification schemes for biodiversity-friendly products to enable access to new markets by local producers who are sustainably managing ecosystems and conserving biodiversity.
  - Working with companies to minimize their impacts on the environment, take action to offset unavoidable impacts, and include the costs of remedial actions and offsets in their pricing structures; and helping companies modify their purchasing policies to incentivize and scale up mainstreaming of biodiversity into supply chains.
  - Helping communities and entrepreneurs to build their business capacity (including through the use of new tools and indicators such as ecological footprints) to pursue viable nature-based enterprises in sustainable harvesting, artisanal production using sustainably harvested products, and ecotourism.
  - Supporting governments and the private sector to create nature-based green jobs by generating livelihood opportunities through investments in restoring or rehabilitating natural ecosystems such as wetlands, forests and mountain catchments, and sustainable land management activities.
- Working with countries to access traditional and innovative biodiversity financing and markets by:
  - Supporting governments to identify, combine and sequence financing for biodiversity and ecosystem management, maximizing both domestic allocations and the flow of international funding, using the full range of existing and new tools and mechanisms, such as agricultural subsidy reform, habitat banking watershed payments, and debt-for-nature swaps.
  - Promoting transparent and effective payment distribution systems for ecosystem services, which compensate resource managers for the costs they incur in protecting biodiversity. Payments for ecosystem services (PES) schemes need to be designed to ensure that poor communities benefit from them, and to avoid communities being cut off from resources to which they have customary rights, or being forced to pay for these. By increasing the value of currently marginal land, PES programmes could inadvertently increase the incentive for powerful groups to take control of it and exacerbate problems in situations where tenure is insecure.
  - Promoting pro-poor and 'green' markets that encourage the production, distribution, sale and consumption of biodiversity-friendly products by businesses, communities, and public and private sector entities, and support the development and utilization of certification, verification and traceability systems.
  - Facilitating access to carbon markets, including Clean Development Mechanism or successor markets for afforestation and reforestation, voluntary markets for emissions reduction in wetlands, and REDD/REDD+.

**Access and Benefit Sharing agreements are designed to set up systems for equitably sharing the benefits arising from the use of genetic resources with providers of those resources (often in developing countries), and balancing this with access (often by users based in developed countries) to genetic resources as sources of novel compounds and products for the pharmaceutical, agro-chemical, food and cosmetics industries. This involves mutually agreed terms and prior informed consent by resource providers, recognizing the important role of traditional knowledge.**



## ANNEX 2: ACTIVITIES UNDER SIGNATURE PROGRAMME 1

- ┆ Increasing the flow of funds to the local level by ensuring that existing and new financing mechanisms include a component to provide responsive, demand-driven financing and grant-making to support community-based biodiversity initiatives.
- Promoting sustainable use of biodiversity and facilitating agreements on Access and Benefit-Sharing (ABS) for genetic resources and traditional knowledge by:
  - ┆ Promoting sustainable use of biodiversity by building the capacity of individuals and organizations to determine sustainable harvesting and off-take rates for particular species, including non-timber forest products.
  - ┆ Working with small-scale harvesters and farmers to promote artisanal production based on biodiversity goods such as natural fibres and medicinal herbs, and also to conserve agro-biodiversity (indigenous crop varieties and landraces).
  - ┆ Supporting national-level implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization adopted at COP10.
  - ┆ Assisting countries to facilitate private sector engagement and community involvement in ABS deals that transfer monetary benefits (such as royalties and payments per sample) and non-monetary benefits (such as technology, research and training) from users to providers of genetic resources and traditional knowledge.
  - ┆ Working with governments and stakeholders in developing countries that already have a policy and legislative framework in place for ABS in order to assist them in accessing finance, and to facilitate ABS deals, such as sustainable, ethical bio-prospecting programmes, or deals between corporations interested in accessing genetic resources and organizations representing the providers of those resources.
  - ┆ Supporting local and indigenous communities in developing payment and benefit-sharing mechanisms and bio-cultural community protocols.
- Building capacities in all aspects of the biodiversity-development interface by:
  - ┆ Creating mechanisms to enhance learning and build adaptive capacity through peer-to-peer dialogue and shared learning, training and documentation of best practices.
  - ┆ Identifying and scaling up successful models of ecosystem management, adaptation and enterprise, and improving government capacity to incorporate best practices into UNDP Country Programme Action Plans, NBSAPs, Poverty Reduction Strategies and other national policies.
  - ┆ Leveraging resources and establishing a capacity building network in support of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services so that biodiversity and ecosystem management actions taken by governments and local implementers can be based on the best available science, and scientists can in turn be informed about applied research priorities.



**Activities under Signature Programme 2:** Unlocking the potential of protected areas (PAs), including indigenous and community conserved areas, to conserve biodiversity while contributing to sustainable development.

Key action areas for UNDP-managed projects undertaken by countries include work to:

- Strengthen protected area systems and their ability to conserve biodiversity and maintain and enhance ecosystem services by:
  - ▮ Improving protected area policies and the broader policy environment to enable the creation and effective management of protected areas.
  - ▮ Increasing protection of the most vulnerable species, of ecosystem types which are not currently represented in national protected areas systems, and of areas that are important for providing ecosystems services, such as wetlands.
  - ▮ Improving the management effectiveness of protected areas by preventing and mitigating threats, upgrading management planning and processes, and strengthening natural resource management practices, with emphasis on sustaining the flow of key ecosystem services.
  - ▮ Targeting research on key gaps related to ecosystem services, including in protected area gap assessments.
  - ▮ Improving connectivity to increase resilience of PAs to climate change, which requires working with local governments and partners to strengthen enforcement, and to work beyond protected areas in production landscapes, also involving local communities in designating connectivity corridors, determining uses of resources within corridors, and predicting and managing human-wildlife conflicts.
  - ▮ Supporting local and community actors in establishing baselines and long-term monitoring and evaluation processes that can demonstrate impacts and sustainability.
  - ▮ Strengthening capacity development efforts regarding management of ecosystems to sustain key services, including enabling community members to become active participants in PA management.
  - ▮ Including biodiversity and ecosystem assessments in early recovery programmes after disasters or crises, taking into account the relationships that exist between communities and natural resources, and the role that protected areas can play in helping communities rebuild their lives.
- Promote access to innovative and effective financial mechanisms for protected areas by:
  - ▮ Building the business case for increased investment in protected area management.
  - ▮ Supporting the establishment and implementation of national sustainable financing plans for protected areas, based on a systemic assessment of financial needs.
  - ▮ Mainstreaming protected areas into national and local economies, and national development and finance strategies.
  - ▮ Developing a diverse portfolio of funding resources (such as national budgetary allocations, overseas development assistance and entrance fees), as well as innovative solutions such as payments for ecosystem services, trust funds, and green taxes) to achieve stable and sufficient long-term financial resources.



## ANNEX 3: ACTIVITIES UNDER SIGNATURE PROGRAMME 2

- Building capacity, knowledge and skills to develop and promote a wide range of sustainable finance mechanisms, particularly those related to PES and REDD/REDD+ mechanisms, and the development of appropriate benefit sharing programmes for such systems.
- Channelling international funding programmes to support protected area systems in developing countries, and collaborating with other countries to develop and implement regional sustainable financing programmes.
- Enable protected areas to secure local and sustainable livelihoods by:
  - Creating a supportive policy environment for sustainable livelihoods within and around protected areas, including promotion of policies for equitable benefits sharing, traditional knowledge management, and sustainable harvesting of natural resources. This includes incorporating sustainable livelihoods into protected area management plans and practices.
  - Partnering with indigenous and local communities from the initial stages of project design through to implementation, to ensure that their concerns are factored into project work.
  - Supporting dialogue between governments and Indigenous and Community Conserved Areas on securitization of tenure as the basis for conservation agreements.
  - Strengthening governance systems to ensure effective enforcement from source to market (including cross-sectoral collaboration and public-private-community partnerships) to conserve species threatened by illegal and unregulated trade.
  - Developing effective financial mechanisms for protected areas that support sustainable livelihoods.
  - Mitigating and preventing threats to restricted natural resources by providing sustainable livelihoods and supporting enforcement.
  - Fostering trans-boundary protected areas that sustain and enhance local livelihoods.
  - Supporting implementation of the new GEF strategy on communities and indigenous peoples and the new UNDP policy on environmental and social safeguards.





**Activities under Signature Programme 3:** Managing and rehabilitating ecosystems for adaptation to and mitigation of climate change.

Key action areas for UNDP-managed projects undertaken by countries include work to:

- Promote ecosystem resilience by:
  - ▮ Improving management effectiveness for vulnerable species and ecosystems and reducing threats to biodiversity and ecosystems.
  - ▮ Encouraging countries to develop plans, particularly land-use plans, at the landscape and seascape levels, and higher. This work includes expanding the boundaries of and connectivity between existing intact terrestrial and marine ecosystems, including protected areas.
  - ▮ Fostering diverse governance types, management regimes and land tenure arrangements across the landscape.
  - ▮ Reducing key threats and pressures, such as invasive species, fragmentation and conversion that can exacerbate climate impacts and reduce resilience.
  - ▮ Restoring and rehabilitating degraded lands in order to enhance their ability to function and provide ecosystem services.
  - ▮ Promoting the connectivity of intact ecosystems, including protected areas, to insure against climate change.
  - ▮ Creating new protected areas to enable animals to move, and plant ranges to shift, as climatic conditions change.
  - ▮ Collecting native plant genotypes.
- Foster ecosystem-based adaptation to climate change by:
  - ▮ Conducting vulnerability assessments and cost-benefit analyses in partnership with stakeholders to determine the likely impacts of climate change and identify high-priority actions for protecting natural systems and vulnerable communities.
  - ▮ Leveraging available climate change funds to develop flexible adaptation plans and strengthen policy, legislative and institutional frameworks that support socio-ecological adaptation in the face of climate change.
  - ▮ Facilitating the translation of cutting-edge science and traditional knowledge into national and local ecosystem-based adaptation strategies and processes.
  - ▮ Linking rural enterprises and products to ethical markets and value chains in support of sustainable livelihoods that can generate buffer income in the face of climate variability and shocks.
  - ▮ Promoting education, awareness, learning and participatory management actions that reinforce the conservation and sustainable use of biodiversity and ecosystems.
  - ▮ Promoting the use of intact natural ecosystems to reduce disaster risks associated with climate change, for example, buffering storm surges, flooding or landslides. This kind of ecosystem-based adaptation involves both conservation activities that maintain these services, and rehabilitation and restoration activities that enhance these services to society.



## ANNEX 4: ACTIVITIES UNDER SIGNATURE PROGRAMME 3

- Implement ecosystem-based climate change mitigation by:
  - ▮ Realizing the multiple mitigation benefits of sustainable land management (such as forest conservation and sustainable forest management), including carbon sequestration, regulation of water quality, protection from natural hazards, alleviation of poverty, and conservation of biodiversity.<sup>ii</sup>
  - ▮ Reducing emissions from land-use, land-use change and forestry (LULUCF).
  - ▮ Supporting actions for Reducing Emissions from Deforestation and Forest Degradation (REDD) and REDD+, ensuring the positive synergies of these actions with conservation and sustainable use of biodiversity and transparent and effective national forest governance structures, while respecting the knowledge, rights and livelihoods of indigenous peoples and members of local communities.
  - ▮ Ensuring that connections made with other Rio Conventions and UNFCCC promote access to available funds to address climate change impacts on biodiversity and ecosystem functioning.
  - ▮ Enhancing the carbon sequestration capacities of ecosystems through restoration.
  - ▮ Supporting sustainable rangeland and pasture management to reduce overgrazing, one of the primary contributing factors to pasture ecosystem degradation, which results in loss of organic carbon soil through wind and water erosion, and soil impoverishment.
  - ▮ Conserving peatlands and permafrost ecosystems, and improving their management.
  - ▮ Demonstrating measures to reduce emissions of ecosystems storing “blue carbon”, such as mangroves, seagrass beds and saltmarshes—since ocean and marine ecosystems are among the largest sinks of carbon on the planet. (The net atmosphere-to-ocean flux represents 30.5 percent of the world’s carbon storage, while the net atmosphere-to-land flux accounts for just 12.5 percent.<sup>iii</sup>)
- Strengthen the ability of protected areas to enable climate change adaptation and mitigation by:
  - ▮ Creating the policy environment needed to enable protected areas to play a key role in climate change mitigation, adaptation and resilience, including strengthening adaptation policies related to invasive species, infrastructure development and land-use planning.
  - ▮ Addressing threats that exacerbate climate change impacts by incorporating climate change design principles into planning for strategic expansion of national protected area systems, including the principle of connectivity.
  - ▮ Targeting research on key gaps related to climate change vulnerability of specific regions, ecosystems and sites.
  - ▮ Improving connectivity to increase resilience of PAs to climate change, which requires working between local governments and partners to support the landscape approach and enforcement; and involving local communities in the designation of connectivity corridors, in determining the use of resources within corridors, and in predicting and managing human-wildlife conflicts.
  - ▮ Planning restoration efforts around resilience and climate change mitigation and adaptation.

**UNDP is actively working in partnership with bilateral programmes inside UNDP, and with UNEP and FAO, to support REDD+ activity and UN-REDD work (funded by international finance institutions) to reduce deforestation. The portfolio will soon top US\$ 200 million, and is an example of successful community-based and government-supported policy and planning work to counteract a key driver of biodiversity loss and ecosystem degradation.**



- a. Rockström J., W. Steffen, K. Noone, Å. Persson, F.S. Chapin III, E.F. Lambin, T.M. Lenton, M. Scheffer, C. Folke, H.J. Schellnhuber, B. Nykvist, C.A. de Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P.K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R.W. Corell, V.J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J.A. Foley. 2009. "A safe operating space for humanity". *Nature*, 461: 472–475.
- b. Convention on Biological Diversity, 2010. Third edition of the Global Biodiversity Outlook (GBO3). [www.cbd.int/gbo3](http://www.cbd.int/gbo3)
- i. In 1991, prior to the Rio Earth Summit, the Regional Bureau for Latin America and the Caribbean (RBLAC), in partnership with the Inter-American Development Bank, convened a Commission on Environment and Development and issued two reports: 'Our Own Agenda', which was UNDP's own version of Brundtland's 'Our Common Future'; and subsequently 'Amazonia without Myths', which presented the position and views of eight Amazonian countries on the need for sustainable biodiversity and ecosystems management. These reports were well-received ahead of the Summit and were instrumental in shaping the Rio agenda. For further information, please refer to these publications, published by UNDP in partnership with the Inter-American Development Bank and the Latin American and Caribbean Commission on Development and Environment.
- ii. Rockström J., W. Steffen, K. Noone, Å. Persson, F.S. Chapin III, E.F. Lambin, T.M. Lenton, M. Scheffer, C. Folke, H.J. Schellnhuber, B. Nykvist, C.A. de Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P.K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R.W. Corell, V.J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J.A. Foley. 2009. "A safe operating space for humanity". *Nature*, 461: 472–475.
- iii. Convention on Biological Diversity, 2010. Third edition of the Global Biodiversity Outlook (GBO3). [www.cbd.int/gbo3](http://www.cbd.int/gbo3)
- iv. The UN Secretary-General's High Level Panel on Global Sustainability. 2012. Resilient People, and Resilient Planet: A Future Worth Choosing, Overview. 2012. New York.
- v. For more information, see [www.teebweb.org](http://www.teebweb.org)
- vi. UNDP. (2012). Africa Human Development Report "Towards A Food Secure Future". <http://www.afhdr.org>
- vii. Helen Clark, UNDP Administrator. Humanitas 2012 Visiting Professorship in Statecraft and Diplomacy. "Putting Resilience at the Heart of the Development Agenda". Cambridge, United Kingdom. April 16, 2012.
- viii. Helen Clark, UNDP Administrator. Humanitas 2012 Visiting Professorship in Statecraft and Diplomacy. "Putting Resilience at the Heart of the Development Agenda". Cambridge, United Kingdom. April 16, 2012.
- ix. Upon its initial adoption at CBD COP-9 in 2008, the Strategy for Resource Mobilisation (IX/11B) set eight goals, including Goal 4 aimed at exploring six comprehensive categories of new and innovative financial mechanisms at all levels to increase funding to support the three objectives of the CBD.
- x. UNDP. (2011). Human Development Report: Sustainability and Equity—A Better Future for All. <http://hdr.undp.org>
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- xii. Helen Clark, UNDP Administrator. Humanitas 2012 Visiting Professorship in Statecraft and Diplomacy. "Putting Resilience at the Heart of the Development Agenda". Cambridge, United Kingdom. April 16, 2012.
- xiii. UNDP Bureau for Development Policy. (2012). Policy Services for Sustainable Development. DRAFT. New York.
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