Annex – Contribution of the Aichi Targets to Sustainable Development Agenda and the Post-2015 Process

In decision XI/22 The Conference of the Parties, stressed the importance of integrating biodiversity into intergovernmental process on sustainable development goals established in the outcome document of the Rio+20 Conference in the context of the United Nations development agenda beyond 2015. The Conference of the Parties, *inter alia*:

- Noted the relevance of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets;
- Invited Parties, all partners and stakeholders to integrate the three objectives of the Convention on Biological Diversity into sustainable development and poverty eradication programmes, plans, policies and priority actions, taking into account the outcomes of the Rio+20 Conference; and
- Encouraged Parties and all partners, institutions, organizations and processes concerned to consider the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets in developing the post-2015 United Nations development agenda and in the process of establishing sustainable development goals under the United Nations General Assembly;

In the Rio+20 outcome document *The Future We Want*, countries reaffirmed the intrinsic value of biodiversity , as well as the ecological, genetic, social, economic, scientific, educational, cultural recreational and aesthetic value; critical role in maintaining ecosystems services that are foundations for sustainable development and human well-being (Para 197). Furthermore, they recognised the severity of global loss of biodiversity and the degradation of ecosystems undermining global development, affecting food security, and nutrition, the provision of and access to water and human health.(Para 197). Additionally, countries called for urgent actions that effectively reduce the rate of, halt and reverse the loss of biodiversity, reiterating commitment to achieve the three objectives of the Convention on Biological Diversity, ; affirms the importance of implementation of the Strategic plan for biodiversity and its 20 Aichi Targets adopted at the Tenth Conference of the Parties to the Biodiversity Convention (Para. 198)

The Strategic Plan for Biodiversity 2011 - 2020 underscores how biodiversity underpins human well-being, including sustainable economic development and poverty eradication, achieved through safeguarding and restoring ecosystems and the sustainable use of biological resources, addressing the underlying drivers of biodiversity loss, and mainstreaming biodiversity into policies, planning, and sectors, and enhanced human capacities. Addressing sustainable development through the biodiversity lens ensures, at its essence, an intergenerational and forward reaching approach where protecting the health and resilience of ecosystems offers long-term solutions for improving human-wellbeing.

The following illustrates how biodiversity is cross-cutting to the themes being discussed under the Post-2015 Development Agenda, and how a focus on biodiversity can provided added value to economic development, environmental sustainability, and poverty

reduction. Examples are provided that reflect these interlinkages, illustrating examples of win-win outcomes and solutions for sustainable development.

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

This target addresses the need to build awareness of the value of biodiversity, its intrinsic cultural value, how it underpins ecosystem functioning, and the contributions ecosystem services provide to our societies and economies as well as planetary processes. Building such awareness plays a central role in addressing and reversing the underlying causes of biodiversity loss. This target is essential in creating political will necessary to carry forward the sustainable development agenda towards more sustainable consumption and production patterns. For example, the Economics of Ecosystems and Biodiversity (TEEB) has made significant contributions towards Target 1 through its efforts to raise awareness in business sectors and among political decision-makers of: the value of biodiversity and the ecosystem services it underpins; the economic costs related to "business as usual" and the loss of these ecosystem services; and tools and measures that integrate these values into accounting, policy, and planning.

Measuring trends in awareness, attitudes, public engagement, and communication programmes will offer one way of tracking progress in environmental sustainability. Related indicators are not only useful in tracking progress in corporate responsibility, but also can be used to monitor a government's sustainable development strategy. For example, the government of Quebec has developed a Sustainable Development Strategy for 2008 – 2013, which applies an objective-based approach using indicators. Its Direction 1 focuses on informing, educating, awareness raising, and innovation. Indicators under this Direction 1 have been developed to help monitor the performance of government, for instance the proportion of personnel in a department or agency that are aware of the sustainable development approach and the proportion of departments and agencies implementing sustainable development cooperation mechanisms.

Raising Awareness and Generating Outcomes for Biodiversity and Sustainable Development

In the Wakatobi archipelago, Indonesia, over 100,000 people live within the Wakatobi National Park. Unsustainable fishing practices and lack of enforcement of fishing regulations have led to the degradation of fisheries and coral reefs. The fishing community of Tomia (KOMUNTO) represents 18 fishers' groups and works to promote sustainable fisheries. Core activities focus on environmental education, outreach, capacity-development, and a knowledge exchange programme and resource centre. This knowledge exchange programme has partnered with radio, film, and print journalism, and tailored programming on sustainable fisheries to both youth and adult audiences. Not only did KOMUNTO's activities result in a declaration committing members to sustainable fishing, but it also had wide-ranging socio-economic impacts and was instrumental in revising the zoning system for Wakatobi National Park that now directs the fisheries management for the park area. Their education and outreach model has been replicated to address other issues such as mangrove conservation and restoration.

United Nations Development Programme. 2012. *Fishing Community of Tomia (KOMUNTO), Indonesia*. Equator Initiative Case Study Series. New York, NY. Available online at: http://equatorinitiative.org/images/stories/winners/98/casestudy/case_1348161880.pdf

Example of Targets[1] *or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development*

Of the fifteen NBSAPs submitted to the Secretariat of the CBD since the adoption of the Strategic Plan for Biodiversity 2011 – 2020, twelve countries have set either quantitative or outcome / process-oriented targets in line with Target 1. For example, the Dominican Republic, which has aligned its first NBSAP with the global framework of the CBD's Strategic Plan for Biodiversity, has set the following target: by 2016, develop a comprehensive national campaign to educate the public about the value of biodiversity and the steps to take toward its conservation and sustainable use, so that more people are aware of the importance of biodiversity and change their behaviour towards it. Both Venezuela and Serbia have set targets that focus on integrating biodiversity into their education systems and curricula.

1 The information used throughout this Annex on national targets that have been set using the framework of the Aichi Biodiversity Targets is based on those NBSAPs developed or revised prior to the Eleventh Meeting of the Conference of the Parties in October, 2012. The full analysis can be found in the Information Note by the Secretariat of the CBD *Review of Progress in the Establishment of National Targets and Updating of National Biodiversity Strategies and Action Plans Since the Adoption of the Strategic Plan for Biodiversity 2011-2020*. (UNEP/CBD/COP/11/INF/12)

Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Mainstreaming biodiversity and environmental sustainability considerations across government, into sector-specific planning, and into cross-sectoral national development planning is central to both achieving the Strategic Plan for Biodiversity 2011 – 2020 and in developing a Post-2015 Development Agenda that can be implemented with success. An emphasis on effective mainstreaming is important because it addresses *how* to achieve sustainability not only at the policy level, but also in implementation at the programme and project levels. Looking at co-benefits for biodiversity and development, achieving Target 2 will help minimize the direct pressures on biodiversity through better policy and planning. Integrating the recognition and value of ecosystem services into national planning, accounting, and reporting systems will help build more efficient and effective development that is cross-cutting in nature and is sustainable over the long-term. Addressing and overcoming the challenges related to the undervaluation of biodiversity and ecosystem services is also critical.

There are numerous ways to facilitate biodiversity mainstreaming. Some tools, mechanisms, and approaches include: the UN System of integrated Economic and Environmental Accounts (SEEA); strategic environmental assessment; spatial planning and ecological zoning for land-use; valuation of natural capital, including payment for ecosystem services, changes to fiscal incentives, and integrating biodiversity considerations into national and sub-national budgets; and using or restoring ecosystem services in planning for sustainable cities. Opportunities also exist to improve the integration of biodiversity concerns into instruments such as National Adaptation Programmes of Action (NAPAs) under the UNFCCC, and National Action Programmes under the UNCCD. Regarding policies for poverty reduction, some countries have made efforts to integrate biodiversity considerations into international development assistance policies as well as Poverty Reduction Strategy Papers (PRSPs). A recent review of the 23 bilateral agency members of the OECD Development Assistance Committee (DAC) found that 12 members pay significant attention to biodiversity, and 4 members have a specific policy on biodiversity, of which 3 prioritize mainstreaming of biodiversity. (Roe 2010) In the same study, 57 PRSPs were analyzed. The majority of PRSPs mention the role of biodiversity in contributing to poverty alleviation, with some recognizing the dependence of the poor on biodiversity and others noting the role that biodiversity plays in contributing to national level GDP and foreign exchange earnings. However, only 15 PRSPs (25% of those analyzed) were found to have a relatively "high level of recognition" of the importance of biodiversity. (Ibid)

Implementing Target 2 Through Mainstreaming into Poverty Reduction Strategies and Sectoral Planning

Rwanda has mainstreamed biodiversity into the Economic Development and Poverty Reduction Strategy (EDPRS) and District Development Plans. The EDPRS 2008 – 2012, endorsed by the Rwandan Cabinet, considers the environment both as a cross-cutting issue as well as an independent sector. Attention is placed on sustainable land use and land tenure security. Protected areas and wetlands are identified as

contributing to national revenue, and the EDPRS set a target to increase the proportion of protected areas by 2% in 2012. Five critically degraded ecosystems were identified for rehabilitation work, and the Strategy set to reduce soil erosion and soil fertility decline by 24%. The EDPRS sets to increase forestry and agro-forestry and reduce annual wood consumption by 30%. Sector-specific guidelines are included in the EDPRS to help facilitate poverty-environment mainstreaming into sector-specific strategies and implementation plans, including: agriculture, trade, tourism, energy and mining, infrastructure, transport, human settlement, sanitation, and water. Implementation of the EDPRS is conducted through Sector Strategic Plans and District Development Plans.

The experience with the EDPRS has had a ripple effect. Sectors are required to mainstream biodiversity conservation in Environmental Assessment. In the context of the State of the Environment and Outlook report, a programme was delivered to work with district mayors and parliamentarians on poverty-environment linkages. A communication strategy for poverty-environment linkages is being implemented, with media productions and journalism training. There has been collaboration with the Ministry of Finance to support environment as a cross-cutting issue in budget calls and improved budgeting for sustainability across sector ministries. Additionally, sectors including Agriculture, Energy and Trade, and Industry identified environmental priorities which were included in the budget call circulars for 2011/2012.

Rwanda's Fourth National Report to the Convention on Biological Diversity: http://www.cbd.int/doc/world/rw/rw-nr-04-en.pdf
UNDP-UNEP Poverty- Environment Initiative Rwanda: http://www.unpei.depiweb.org/what-we-do/pei-countries/rwanda.html

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

An example of a quantitative target comes from Switzerland: by 2020, ecosystem services are identified and quantified, thus making it possible to integrate them in the Gross Domestic Product as an indicator for measuring well-being, and well as in an analysis of the impact of regulations.

Examples of outcome and process-oriented targets include those set by the United Kingdom and The Democratic People's Republic of Korea. The United Kingdom Priority has established Priority Action 2.2: promote taking better account of the values of biodiversity in public and private sector decision-making, including by providing tools to help consider a wider range of ecosystem services. Their Priority Action 3.4 sets out: through reforms of the planning system, take a strategic approach to planning for nature within and across local areas. This approach will guide development to the best locations, encourage greener design and enable development to enhance natural networks. We will retain the protection and improvement of the natural environment as core objectives of the planning system. The Democratic People's Republic of Korea has established the following target: integrate biodiversity concerns into the National Economic Plan (NEP) and the Master Plan for Land Development (MPLD).

Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.

A major challenge for biodiversity, ecosystems, and environmental sustainability is that economic signals from policy and markets do not reflect the true value of biodiversity. Another challenge comes from incentives that are harmful to biodiversity (such as subsidies, taxes, and market prices). Such incentives are often drivers of biodiversity loss. For example, subsidies can exacerbate over-exploitation of resources, drive land-cover change, and often have a depressing effect on world market prices for commodities. The failure to incorporate negative external costs into market prices is an example of a perverse incentive. Incentives are needed that encourage sustainable practices and distribute costs and benefits efficiently and fairly. Reforming or ending environmentally harmful incentives has co-benefits for biodiversity, societies, and economies. Reform can discourage environmentally harmful behaviour, remove wider economic distortions, encourage transitions to more sustainable use, address the underpricing of natural resources, free up scarce fiscal resources, and provide benefits for government budgets. (Secretariat of the Convention on Biological Diversity 2011; TEEB 2011)

COP Decision X/44 encourages Parties to promote the design and implementation of positive incentive measures for the conservation and sustainable use of biodiversity across economic sectors. These incentives should be: effective, transparent, targeted, monitored, cost-efficient, be limited in time, and not generate perverse incentives. (Secretariat of the Convention on Biological Diversity 2011) Some examples of mechanisms and policy tools that can help develop and implement effective policies and actions towards achieving this target include:

- Strategic environmental assessment that includes biodiversity considerations;
- Valuation studies that calculate the costs, benefits, examine tradeoffs, and impacts of different ecosystem management strategies;
- Instrumental and market frameworks that apply the “polluter pays” principle;
- Payments for ecosystems services, carefully designed to take into account equity issues, land tenure and use-rights, traditional livelihoods and rights, and the fair distribution of benefits;
- Public compensation mechanisms such as tax breaks or special credit lines;
- Certification and labeling schemes;
- Reform of policies that generate perverse incentives; and
- Improved communication and coordination between stakeholders and policy/decision-makers to help showcase benefits and ensure coherent implementation of reforms.

In transitioning towards more sustainable regimes of resource use, it is important to recognize that time periods between new rules and their tangible pay-offs may be substantial and positive first experiences will help encourage additional transitions.

(TEEB 2011) To help track progress at the global level, it may be useful to assess trends in the number and value of incentives harmful to biodiversity that have been removed, reformed or phased out. Estimates of the value of harmful subsidies, using criteria developed by WTO and the Organisation for Economic Co-operation and Development (OECD), could be useful in developing indicators.

Reducing Agricultural and Fisheries Subsidies in New Zealand

Prior to 1984, agriculture and fisheries were heavily protected via subsidies and price and income support. This resulted in market distortions, over-production, and marginal lands being brought into production. By 1984, agricultural output was worth less than the costs of production and processing. Facing a severe fiscal crisis, New Zealand removed all subsidies to the agricultural industry, including price support, income support, and land development subsidies. Today, the agriculture sector more efficient, innovative, and profitable. It has grown to a larger size than during the period when it was heavily subsidized. The meat industry has shifted from the least efficient to the second most efficient in the world. Employment in the sector has increased and the rural economy has diversified to include tourism and other services that help provide resilience to cyclical downturns in agriculture. Chemical use and resulting pollution declined, marginal land was taken out of production, and an effort has been placed in reforestation.

Subsidies to fisheries were also removed. This was combined with major changes in fisheries management, including rights-based management and individual transferable quotas. The result saw some fish stocks recover from overexploitation. The government's current strategy, Fisheries 2030, strives to maximize benefits from the use of fisheries within environmental limits. The strategy identifies environment as central to sound governance, including: biodiversity and the function of ecological systems, including trophic linkages are conserved; habitats of special significance to fisheries are protected; adverse effects on protected species are reduced or avoided; and impacts, including cumulative impacts, of activities on land, air or water on aquatic ecosystems are addressed.

Secretariat of the Convention on Biological Diversity. 2011. *Incentive Measures for the Conservation and Sustainable Use of Biological Diversity: Case Studies and Lessons Learned*. CBD Technical Series No. 56. Available at: https://www.cbd.int/doc/publications/cbd-ts-56-en.pdf

New Zealand Ministry of Fisheries, *Fisheries 2030*: http://www.fish.govt.nz/NR/rdonlyres/4DD60325-CADD-4E5C-92BF-A6E17C202A54/0/fisheries2030report.pdf

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

Examples of quantitative targets come from Dominican Republic and Switzerland. Dominican Republic has set the target: by 2016, we will have an updated analysis on incentives, including subsidies harmful to biodiversity, and a proposed action plan to achieve their reduction, reform and, ultimately, their elimination. Switzerland has established the target: by 2020, existing financial incentives harmful to biodiversity are identified and, if possible, avoided. New positive incentives are put in place where appropriate.

Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

In *The Future We Want*, countries recognized that "promoting unsustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development." (UNGA 2012:2) Aichi Biodiversity Target 4 is therefore cross-cutting with both the vision of the RIO+20 Outcome document and any future sustainable development goals related to food, energy, water, environmental sustainability, and growth and employment. Sustainable consumption directly addresses drivers of biodiversity loss. With regards to sustainable production, there are countless examples of benefits derived from reduced production costs (for example reducing agricultural chemical inputs) combined with higher-valued outputs (such as higher market prices for sustainably caught seafood or certified organic or "Bird Friendly" shade-grown coffee). Interlinkages between the issues addressed under Target 4 and sustainable livelihoods, economic prosperity, and investment in new markets clearly illustrate how this target contributes a green economy.

What the work of the Convention on Biological Diversity and its Strategic Plan contribute to this agenda on sustainable production and consumption is: 1) recognition of the contribution of biodiversity and ecosystem services, 2) means and tools through which sustainable production and consumption can progress so that ecosystem functioning is not degraded, and 3) targets and indicators that can help monitor progress. Achieving target 4 will require government regulations and/or incentives, education and research, and social and corporate responsibility. Additionally, progress will depend on cooperation and dialogue among sectors and stakeholders, supported by planning tools such as strategic environmental impact assessment and economic tools such as incentive measures. Increasing resource-use and energy efficiency will also be necessary.

Using Indicators to Monitor Progress Towards Sustainable Production and Consumption

To help monitor progress towards this target, it is useful to look at trends in pressures from unsustainable agriculture, forestry, fisheries, and aquaculture. This includes: trends in population and extinction risk of utilized species, including species in trade (also used by CITES); trends in ecological footprint and/or related concepts; and ecological limits assessed in terms of sustainable production and consumption. Also useful in monitoring progress could be trends in pressures, for instance from habitat conversion, pollution, invasive species, climate change, overexploitation of biodiversity, and underlying drivers of biodiversity loss. Related to the agriculture sector, monitoring trends in the genetic diversity of cultivated plants, farmed and domesticated animals, and their wild relatives would be useful. Trends in nitrogen footprint of consumption activities as well as trends in the proportion of total freshwater resources used (MDG Indicator 7.5) are also useful and relevant. For fisheries, progress can be measured by assessing trends in extinction risk of target and bycatch species, and trends in proportion of utilized stocks outside safe biological limits (MDG Indicator 7.4).

Monitoring trends related to mainstreaming biodiversity, ecosystem services, and benefits sharing into planning, policy formulation and implementation, or into incentives is another way to assess progress in achieving Target 4. For example, progress could be monitored by: assessing the extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting; by

looking at the establishment of plans with clear and measurable targets; and by monitoring the use of strategic environmental impact assessment or similar assessment tools and how biodiversity and ecosystem services are incorporated into EIAs and SEAs. Also relevant, especially in terms of issues related to consumption patterns, is measuring progress in integrating biodiversity considerations into urban planning. From the business perspective, a further possible indicator is the number of companies (or their market share) with polices for biodiversity-friendly practices.

Meeting of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011 – 2020 held in the United Kingdom on 20 – 24 June 2011: http://www.cbd.int/doc/meetings/ind/ahteg-sp-ind-01/official/ahteg-sp-ind-01-03-en.pdf

Documents that provided input to the meeting are available here: http://www.cbd.int/doc/?meeting=AHTEG-SP-IND-01

Examples of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

Australia is one of the Parties that has set a quantitative target in line with Target 4: by 2015, achieve a doubling of the value of complementary markets for ecosystem services. In terms of outcome and process-oriented targets, the Democratic People's Republic of Korea has developed the target: improve the conservation and sustainable use of biodiversity in forestry, agriculture, fishery and Koryo medicine, and reduce the unsustainable consumption of bio-resources.

Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

This target addresses land-use change, land-cover change, and land degradation, all major drivers of biodiversity and habitat loss. The loss of high-biodiversity value habitats, for example primary forests, and the fragmentation or loss of ecosystems where continued degradation risks passing "tipping points," not only affects the functioning of ecosystems, but also can result in large scale negative effects on human well-being.

Target 5 cuts across the sustainable development agenda, with implications for poverty reduction, economic prosperity, food security and nutrition, health, and equality. Looking specifically at the issue of forests, FAO estimates that between 2000 and 2010, 130 million hectares of forest was lost (FAO 2010). The loss of forests has cascading impacts on ecosystem services provision, including: water provision, purification, and storage; climate regulation; climate change mitigation; reducing soil erosion; availability of non-timber forest products; nutrient recycling, provision of services for agriculture such as pollination, pest and disease regulation, etc. Regarding pollination services, forests adjacent to coffee plantations in Costa Rica were estimated to be worth US$395 per hectare per year, roughly 75 of the farm income. (Ricketts et al. 2004 quoted in TEEB 2010) Climate regulation by tropical forests in Cameroon have been valued at US$ 842 - $2265 per hectare per year (Lescuyer 2007 quoted in TEEB 2010). In terms of the economic costs of habitat degradation, the conversion of 930,000 hectares of peatlands in Germany for agriculture has been estimated to emit 20 million tones of CO2-eq. per year, estimated to be worth approximately USD $1.85 billion. (Brink et al. 2012) At the global scale, TEEB has estimated that business as usual deforestation and land-use change to cost between EUR 1.3 and 3.1 trillion. UNEP (2011), in the report Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication, has ambitiously called for investments in reforestation of USD $22 billion per year over the next 40 years.

Deforestation and forest fragmentation also greatly impacts equality and governance issues. Many Indigenous peoples and local communities have homes and territories in the world's forests, depend on forest resources for their livelihoods, and have cultural and spiritual ties to forests. Deforestation and forest fragmentation therefore impacts territorial and tenure rights, traditional use rights, and rights and access to genetic resources. In terms of insecurity, forests play major roles in maintaining resilience and thus protecting against shocks associated to natural hazards and climate change.

Reduction in the loss and degradation of natural habitats can be achieved through:

- improvements in production efficiency and land-use planning (including better use and rehabilitation of degraded lands);
- improved ecosystem connectivity and enhanced mechanisms for natural resource governance;
- ensuring that the value of natural habitats and the benefits they provide are valued by the markets;

- shifting consumption patterns to consume less, consume more efficiently, and recycle more; and
- and education initiatives on the economic and social value of ecosystem services provided by natural habitats.

Conservation, Rehabilitation, and Sustainable Use of Peatlands in The Russian Federation: Co-Benefits for Ecosystems and Climate Mitigation

Peatlands cover approximately 3% of the world's surface, but they store twice as much carbon as all the world's forests. Human actions, such as forest clearing and drainage for agriculture have turned many peat swamps into sources of greenhouse gas emissions. According to Wetlands International, degraded peatlands cover only 0.3% of the Earth's surface, but they are responsible for almost 6% of global anthropogenic CO2 emissions. With two billion tonnes of carbon dioxide emissions annually, peatland loss has become a problem of global magnitude, and reducing these emissions through conservation, rehabilitation, and sustainable use would make a significant contribution to closing the emissions gap.

The Russian Federation has a long history of peat extraction and clearing of peatlands for agriculture. However, in recent decades approximately 30% of agricultural peatlands, 25% of peat extraction areas, and more than one-third of the forested peatlands have been abandoned. These areas are green house gas sources, often with over-aged forest stands, drained, and vulnerable to fire. Extensive fires in 2010 highlighted the urgent need to rehabilitate these areas and develop long-term strategies for fire prevention, conservation, climate change mitigation, and sustainable use (e.g. peat extraction, forestry, and wet peatland agriculture (paludiculture). A cooperation project between The Russian Federation and Germany was initiated and developed: a standardized rewetting procedure; standards for national emission reduction accounting and methodologies for assessing emissions from drained and rewetted peatlands; and public-private partnerships on paludiculture, with emphasis on sphagnum farming. Some 40,000 hectares of degraded peatlands are being rewetted and restored.

Peatlands: Guidance for Climate Change Mitigation through Conservation, Rehabilitation, and Sustainable Use. Available at: http://www.wetlands.org/LinkClick.aspx?fileticket=CsUyE8koQhE=&tabid=56

Examples of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

The United Kingdom is one of several Parties that has set a quantitative national target on this issue of habitat loss. Their Outcome 1A calls for: better wildlife habitats with 90% of priority habitats in favourable or recovering condition and at least 50% of Sites of Special Scientific Interest in favourable condition, while maintaining at least 95% in favourable or recovering condition. Outcome 1B calls for: more, bigger and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in the overall extent of priority habitats by at least 200,000 ha.

Eight Parties have established outcome and process-oriented targets. Some examples include:

- Belarus: To decrease the share of monodominant forest plantation when effecting reforestation with simultaneous increase of woodiness of sparsely wooded regions, to decrease the area of valuable forests growing for a long time, as well as to implement the concept of conserving forests with high level of biological diversity, to carry out forest utilization with the international forest administration certification and forest utilization requirements taken into account;

- Ireland: Target 9, effective hedgerow and scrub management ensured by 2016; Objective 5, to conserve and restore biodiversity and ecosystem services in the marine environment; Target 13, substantial progress made towards “good ecological status” of marine waters over the lifetime of this Plan.
- Spain: Objective 2.2, promote ecological restoration, environmental connectivity of the territory and landscape protection; Objective 3.2, promote sustainable forest management; Objective 2.3, to contribute to the conservation and restoration of natural habitats and wild species; Objective 3.12, provide for the protection of marine habitats and species.

Target 6*: *By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Multiple pressures from poor fisheries management, destructive fishing practices, fishing down the foodchain, bycatch, perverse subsidies, and fisheries partnership agreements that allow for overfishing, are combining to weaken ecosystem structure, functioning and resilience. UNEP reported that $USD 27 billion in subsidies are given out annually, representing a major driver of overfishing. (UNEP 2011) Other drivers include non-participatory and often centralized fisheries management systems, demographic pressures, market-driven pressures, pollution, and climate change impacts. In 2009, 57% of the world's marine fish stocks were fully exploited and approximately 29.9% of stocks were overexploited and in need of strict management plans to restore their full and sustainable productivity. (FAO 2012: 11) Unsustainable fishing practices result in an estimated $50 billion lost annually. (World Bank and FAO 2009)

The sustainable management and harvesting of fish, invertebrate stocks, and aquatic plants is central to achieving food and nutrition security as well as reducing poverty. Many small-scale fishers and fish workers are self-employed and engaged in directly providing food for their household and community as well as working in commercial fishing, processing and marketing. (FAO 2013) Globally, fish provides about 3.0 billion people with almost 20% of their intake of animal protein, and 4.3 billion people with about 15% of such protein. (FAO 2012:5) From an economic perspective, healthy and productive aquatic ecosystems managed within safe ecological limits are essential to sustainable production and green economies. Fishing and related activities often underpin the local economies in coastal, lakeshore and riparian communities, generating multiplier effects in other sectors. (FAO 2013) Employment in the fisheries and aquaculture primary sector has grown fast, representing 4.2% of the 1.3 billion people economically active in the broad agriculture sector worldwide in 2010. (FAO 2012:10) These economic figures further illustrate why transitioning to sustainable fisheries is so critical. UNEP's Green Economy report clearly showed that the business as usual scenario is unsustainable and could cause a collapse of the world's commercial fisheries by 2050. A collapse like this would not only be an ecological disaster, but would also put billions of people out of work. The collapse of the cod fishery in Newfoundland in the early 1990s resulted in approximately 40,000 persons losing their employment, and had a devastating effect on the economy of the province and the social wellbeing of rural communities.

Archiving Aichi Biodiversity Target 6 also would have cross-cutting benefits for gender equality. For instance, small-scale fisheries employ over 90% of the world's capture fishers and fish workers, approximately half of whom are women. (FAO 2013) Therefore changes in fisheries management and practices that can reduce impacts on vulnerable ecosystems, sustain or enhance small-scale fisheries, and promote good and equitable governance will have direct benefits for women.

Sustainable fisheries raise awareness on ecosystem stewardship more broadly. Examples of approaches to facilitate this transition include:

- improving fisheries management in order to reduce pressures from fishing and enable over-exploited fisheries to recover, such as benthic protection areas which prohibit bottom trawling and dredging;
- adopting an ecosystem approach to fisheries and aquaculture with fair and responsible tenure systems and rights-based management;
- working with harvesters on science-based quotas, improved monitoring, better fishing methods and gear, and employing recovery plans that, for instance, use seasonal closures or area-based approaches such as no-take zones;
- employing good governance for fisheries, for example the FAO's Code of Conduct for Responsible Fisheries or the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food security and Poverty Eradication (an international instrument being developed through a consultative process);
- integrating biodiversity and ecosystem-based approaches into Regional Fishery Bodies, the primary mechanisms through which States cooperate to ensure the long-term sustainability of shared fishery resources;
- establishing binding conservation and management measures under Regional Fisheries Management Organizations;
- supporting transparent, traceable markets that employ responsible procurement throughout the supply chain; and
- promoting partnerships such as the GEF/FAO Global Sustainable Fisheries Management and Biodiversity Conservation in Areas Beyond National Jurisdiction, the World Bank's Global Partnership for Oceans, and the UN Secretary-General's Ocean Compact.

Looking for Solutions Through Integrated Multi-Trophic Aquaculture

Integrated Multi-Trophic Aquaculture Aquaculture (IMTA) is an approach that promotes technologies and practices that are product-diversified, profitable, and designed to function as an ecosystem. In these farms, species from different trophic levels are cultivated in proximity. For example, salmon enclosures are surrounded by cultivated aquatic vegetation such as seaweeds, and filter feeders such as mussels. In this way, uneaten feed and wastes are recaptured, filtered, and recycled as nutrients by the other crops. These systems attempt to reduce some of the externalities associated to more traditional aquaculture. In Canada, a network comprised of universities, aquaculture associations, and the government's Department of Fisheries and Oceans is conducting research and development on IMTA in 14 different projects.

NSERC Canadian Integrated Multi-Trophic Aquculture Network: http://www.cimtan.ca/index.php

Examples of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

A number of Parties have developed quantitative targets associated with Target 6. Examples include:

- United Kingdom: Outcome 2C, by 2022 we will have marine plans in place covering the whole of England's marine area, ensuring the sustainable development of our

seas, integrating economic growth, social need and ecosystem management; and Priority Action, develop 10 Marine Plans which integrate economic, social and environmental considerations, and which will guide decision-makers when making any decision that affects, or might affect, a marine area. This action in England is part of the UK vision for 'clean, healthy, safe, productive and biologically diverse oceans and seas.

- Ireland: Target 14, fish stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015.
- Dominican Republic: Target 6, by 2016, strengthen the implementation of national fisheries regulations, particularly those relating to populations, species or threatened ecosystems, including the application of the Code of Conduct for Responsible Fisheries.

Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity

This target addresses sectors that often represent some of the key drivers of biodiversity loss with compounded effects on ecosystem functioning and stability, erosion of genetic diversity, habitat fragmentation, land degradation, impact and spread of invasive species, and the recycling of nutrients and water. As with Targets 5 and 6, Target 7 addresses the drivers and pressures of biodiversity loss and ecosystem change over which we have more immediate control. Achieving these targets will help maintain ecosystem resilience needed to prevent some dangerous "tipping points" from being reached.

Viewed within the broader context of the social and economic dimensions of sustainable development, Target 7 underscores the interlinkages between biodiversity and: food security, nutrition, economic prosperity and employment, and poverty eradication. Sustainably managing areas under agriculture, aquaculture and forestry supports rural economies and household incomes, resulting in benefits for women and children. Additionally, successes in achieving Target 7 can facilitate climate change mitigation (for instance through land management that takes into account carbon sinks and by reducing emissions linked to the associated industries) and climate change adaptation (for example building resilience within these systems to better withstand future shocks).

Therefore achieving Target 7 would not only represent a major step forward in conserving and restoring biodiversity, but also supports transitions to sustainable landuse that can help safeguard ecosystem functioning, improve the resilience of food systems, and enhance the social benefits from ecosystem services. Some examples include:

- Integrating environmental service provision into agricultural systems, for example through integrated pest management, agroforestry, silvopastoral systems, farming techniques that conserve soil biodiversity;
- Adopting integrated coastal management and improved management for aquaculture such as locating production away from ecologically sensitive areas or migration routes and improved technology for capturing and treating waste;
- Promoting the mainstreaming of biodiversity into land-use planning and zoning in order to address land degradation and the expansion of agriculture and silviculture into natural areas;
- Improving water use and availability through water-smart technologies; and
- Reducing and better managing pollutants that have downstream and cumulative impacts on ecosystems and human health.

Achieving Target 7 will contribute directly to the Framework for Action and Follow-Up laid out by countries in *The Future We Want*. Here, countries highlighted the linkages between sustainable agriculture and aquaculture and: poverty reduction; nutrition; food security; the needs of rural communities, small producers, indigenous peoples, and women; urban-rural linkages; and Countries reaffirmed the necessity to "promote, enhance and support more sustainable agriculture, including crops, livestock, forestry, fisheries and aquaculture, that improves food security, eradicates hunger and is economically viable, while conserving land, water, plant and animal genetic resources,

biodiversity and ecosystems and enhancing resilience to climate change and natural disasters. We also recognize the need to maintain natural ecological processes that support food production systems." (UNGA 2012: 22)

Sustainable Agriculture and Aquaculture: Co-Benefits for Biodiversity and Nutrition

In Asia, traditional rice-fish integrated systems were largely abandoned due to population pressures and the introduction of high-input monocultre. Pesticides and herbicides decreased fish stocks and impacted health. Resurgence in the traditional system has resulted in a number of co-benefits for ecosystems, local economies, and public health. The reintroduction of fish into rice ponds helps regulate pests, provides additional farm income, offers opportunities to introduce indigenous fish species, and improves rice yields. In China, governments at national and local levels have supported these integrated systems as a part of a broader policy to improve rural economies, and in 2007 1.16 million tones of fish and aquatic animals were produced. In some areas of Cambodia the wild fish found in rice fields, canals, ponds and rivers provide an estimated 70% of total protein intake (Halwart, 2006 quoted in FAO 2010).

In southwest Ethiopia, efforts to improve sustainable agriculture by working with 12,500 farm households introduced agroforestry techniques, organic fertilizer inputs, and natural pest control strategies (Pretty, 1999 quoted in FAO 2010). This resulted in a 60% increase in crop yields and a 70% improvement of overall nutrition levels within the project area. The area, once reliant entirely on emergency food aid, achieved food self-sufficiency and was able to build food reserves.

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

European Union has established a Target with two components. The first addresses agriculture: "By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement[2] in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management." The second addresses forests: "By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM)21, are in place for all forests that are publicly owned and for forest holdings above a certain size[3] (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that receive funding under the EU Rural Development Policy so as to bring about a measurable improvement[4] in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of related ecosystem services as compared to the EU 2010 Baseline."

2 For both targets, improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.
3 For smaller forest holdings, Member States may provide additional incentives to encourage the adoption of Management Plans or equivalent instruments that are in line with SFM.
4 For both targets, improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Pollution, including nutrient loading is a major and increasing cause of biodiversity loss and ecosystem dysfunction, particularly in wetland, coastal, marine and dryland areas. The Millennium Ecosystem Assessment estimated that humans have already more than doubled the amount of "reactive nitrogen" in the biosphere, and business-as-usual trends would suggest a further increase of the same magnitude by 2050. Nitrogen fertilizers fuel global agriculture. Yet this comes with a price for our ecosystesms. Nutrient loading from the over-use of fertilizers results in lower plant diversity, eutrophication, creation of dead zones, and disruption of soil food webs leading to decreased plant productivity. Pollutants cause serious risks to human health as toxins bioaccumulate in food supplies, migrate into drinking water, or migrate into the air when sediments become airborne or burnt, as was the case around the Aral Sea. Other sources of pollution include wastewater, sewage, stormwater and other urban runoff, and effluent from industrial activities. Land-use change can represent another point source. For example soil erosion linked to deforestation can leach naturally occurring mercury which can wash into streams and contaminate fish. (Webb 2010) While pollution continues to increase, the capacity of ecosystems to purify wastes cannot keep pace. The loss of habitats with critical filtering services, such as wetlands, further exacerbates the situation, fueling a viscous cycle.

There are direct linkages between Target 8 and the thematic areas of water, health, food, economic growth, and energy under the Post-2015 Development Agenda. It also is important to note interactions between targets 7 and 8. One of the paths towards achieving Target 7 will be the sustainable intensification of agriculture. Technologies therefore are required that can help increase the production of food per unit area without the harmful trade-offs related to excessive use of fertilizers and pesticides. (Millennium Ecosystem Assessment, 2005) Better control of point sources of pollution (such as mining and agriculture), improved and more sustainable land-use management, efficiency in fertilizer use, and better management of animal wastes are required. These approaches, coupled with the conservation and restoration of wetlands that provide critical filtration services, can be used to bring nutrient levels below levels that impact ecosystem functioning, without curtailing the application of fertilizer in areas where it is necessary to meet soil fertility and food security needs. Similarly, the development and, most critically, the application of national water quality guidelines would help to limit pollution and excess nutrients from entering freshwater and marine ecosystems.

Target 8 is consistent with, and complementary to, work under the Rotterdam and Stockholm Conventions and the target established in the Johannesburg Plan of Implementation (para. 23) to achieve, by 2020, a situation where chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment.

Solving the Nitrogen Dilemma Through Evergreen Agriculture Solutions

Crops such as rice and corn can strip nutrients from soil. Degraded lands produce poorer harvests, leaving small-scale farmers financially challenged to purchase commercial fertilizers. "Evergreen agriculture"

combines agroforestry with conservation farming that promotes: minimum or zero tillage; covering soil with organic material such as crop residues; and rotating and diversifying crops, including legumes that replenish soil nutrients through nitrogen fixation. The agroforestry component of the system enhances crop production by providing green fertilizers, shade, and other agricultural goods such as fruits, medicinal plants, livestock fodder, etc. Maintaining trees provides additional added value in terms of ecosystem services such as pollination and pest management, erosion control, and watershed management, and carbon storage and accumulation.

The World Agroforestry Centre reports that Africa will have to produce twice as much food by 2050, and that "evergreen agriculture" is helping to meet this challenge in Zambia, Malawi, Tanzania, Mali, Senegal, Niger, and Burkina Faso by restoring soils and increasing crop yields. Often acacia species are used. *Faidherbia albida* has become a popular choice as the tree drops its nitrogen-rich leaves during the early rainy season, remains dormant throughout the crop-growing period, and grows leaves again at the start of the dry season. This makes *Faidherbia* highly compatible with food crops, because it does not compete for light, nutrients, or water during the growing season. In Malawi, maize yields increased up to 280% under the canopy of *Faidherbia* trees compared with the zone outside the tree canopy.

World Agroforestry Centre. 2009. Creating an Evergreen Agriculture in Africa for Food Security and Environmental Resilience, available at:
http://www.worldagroforestry.org/downloads/publications/PDFS/B09008.PDF
Additional resources on "evergreen agriculture" and *Faidherbia albida* are available at:
http://www.worldagroforestry.org/evergreen_agriculture

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

Only three countries have recently set targets associated to Aichi Biodiversity Target 8, fewer than for other Aichi Targets, thus signaling that controlling pollution is an issue that needs wider global attention. Dominican Republic has set a quantitative target: by 2016, we are aware of the major sources of pollution, including nutrients, which cause harm to ecosystems, for the purpose of developing an action plan to reduce it to levels that are not harmful to the functioning of ecosystems and biological diversity. In terms of outcome and process-oriented targets, Ireland has established that principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2015. The United Kingdome has established Priority Action 3.11 to reduce air pollution impacts on biodiversity through approaches at national, UK, EU and international levels targeted at the sectors which are the source of the relevant pollutants (nitrogen oxides, ozone, sulphur dioxide, ammonia).

Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Invasive alien species (IAS) are a major driver of biodiversity loss and have aggregate and complex impacts on ecosystems. IAS can change abiotic and biotic factors, reduce local diversity by predating on or out-competing indigenous species for resources, displace native species, and even cause extinction. IAS, especially when there are multiple invasive species in a system, can lead to cascading effects that alter ecosystem structure and functioning, nutrient cycling, and ecological relationships between native species. The threats posed by IAS are a product of globalization, spurred on by: trade and shipping; human travel; anthropogenic changes in land-use and climate that either directly introduce IAS or make habitats more susceptible to IAS invasion; weak regulations; and gaps related to monitoring. One of the greatest challenges of IAS is that invasions are extremely expensive to mitigate and in many cases impossible to reverse. Another challenge relates to tradeoffs, and that in some cases, the introduction of alien species has in fact brought benefits to specific sectors, including in agriculture, forestry, and fisheries. These tradeoffs illustrate the complexity of this issue and the need for careful attention to ensure that benefits do not come at the cost of long-term impacts to ecosystems.

In *The Future We Want*, countries noted the significant threat that IAS pose to marine ecosystems and resources and committed to "implement measures to prevent [their] introduction and manage the adverse environmental impacts." (UNGA 2012:31) IAS also represent significant challenges for Islands, which are often characterized as having fragile ecosystems with endemic species and ecological niches that IAS can easily inhabit. For example, New Zealand's Department of Conservation identifies invasive pests and weeds as the greatest single threat to terrestrial biodiversity, noting that of the 25,000 exotic plant species in the country, 2,500 are naturalized and 20 or more exotic plant species become naturalized annually.[5]

In terms of impacts to the broader sustainable development agenda, and because IAS can impact ecosystem structure, functioning, and health, they represent direct threats agriculture, forestry and fisheries. For example, Ug99, a strain of wheat stem rust (*Puccinia graminis*), has become an epidemic that effects 29 countries in East and North Africa, the Near East, and Central and South Asia. Fresh water systems have been impacted by invasive aquatic plants, affecting local livelihoods and water security. Additionally, there are both direct and indirect effects human health. IAS can be carriers of disease. The Asian tiger mosquito is linked to more than 20 human pathogens, including Yellow Fever, Dengue, and West Nile virus, and has been introduced to Europe through trade. (European Environment Agency, 2012) Giant Hogweed (*Heracleum mantegazzianum*) has spread across central and eastern Europe as well as North America, and contact with the plant can cause skin lesions. (Ibid) Indirect impacts on health come from use of pesticides and herbicides used to control IAS. Economic losses from

5 New Zealand's Department of Conservation's work on IAS is outlined at the Department's website: http://www.doc.govt.nz/conservation/

invasive species illustrate the wider impacts on industries and economies. IAS have cost Europe upwards of 12 billion Euro annually. (Kettunen et al., 2009 quoted in European Environment Agency, 2012) The annual losses linked to IAS in Australia, Brazil, India, South Africa, the United Kingdom, and the United States of America have been estimated to be $USD 300 billion. (Pimentel et al., 2001; 2005 quoted in European Environment Agency, 2012).

Prevention and mitigation biological invasions can be through:

- Improved border control;
- Enhancing cooperation between governments and industry;
- The development and implementation of biosecurity measures and management that focus on the prevention of future introductions;
- The mainstreaming of IAS and biosecurity policy into water and land-use planning;
- Science-based management of IAS, including biological control, eradications, risk assessment, work on ecosystem restoration, and capacity-development for local communities;
- Establishment of early detection frameworks that include invasion risk modeling and niche modeling (especially for multiple invasive species interactions) to help manage new invasions; and
- Cooperation between regional initiatives, intergovernmental processes, and biosecurity networks.

Enhancing and streamlining international coordination is also necessary. For example, the CBD and the World Trade Organization Agreement on Sanitary and Phytosanitary Measures have mutually supporting goals in working with countries to manage the spread of IAS and build national capacities in this area. The European Environment Agency has investigated the feasibility of establishing a European Early Warning and Information System on biological invasions.

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

In terms of quantitative targets, Australia has established that by 2015, reduce by at least 10% the impacts of invasive species on threatened species and ecological communities in terrestrial, aquatic and marine environments. The Dominican Republic has set a target that by 2016, strengthen the *Programme for the Control of Invasive Alien Species*, including public dissemination and education. In terms of outcome and process-oriented targets, the European Union has set a target that by 2020, IAS and their pathways are identified and prioritized, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS. The United Kingdom's Priority Action 3.12 is to continue to implement the Invasive Non-Native Species Framework Strategy for Great Britain.

Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

Indigenous Conservation Territories and Areas Conserved by Indigenous Peoples and Local Communities (ICCAs) are at the heart of equitable access to resources and greatly contribute to elements of the Post-2015 Sustainable Development Agenda related to social equity, justice, and security, and that call for sustainable development to be inclusive and participatory.

Molnar et al. (2004) conducted a meta-study that concluded that the global forest area under community conservation (370 million hectares, including ancestral territories in North America, indigenous community lands and *ejidos* in Mexico, indigenous forests and *páramos* in the Andes, forest-agriculture mosaics in South America, collective forests and sacred groves in Africa, and co-managed forests in Asia) was at least as significant as the forest protected areas conserved by state governments. The authors argue that this estimated area would double or triple in size if traditional agro-forestry and agro-pastoral systems in Russia, Europe, and the Middle East were included in the analysis. These ICCAs provide food security, energy, medicine, shelter, fodder, and income to millions, and as such greatly contribute to prosperity and the eradication of poverty. ICCAs are repositories of traditional knowledge and cultural heritage and central to spiritual well-being. They contribute in building resilience against shocks and disasters, provide resources during times of stress, and are territories that are essential in climate change mitigation and adaptation.

Target 14 Case Study

Fisheries Management, Zoning, and Monitoring: Finding Solutions in Senegal through ICCAs

Responding to coastal degradation, as well as overfishing by people outside the community, the fishermen of 8 villages in Mangagoulack Senegal created a fisheries association to promote mangrove restoration and other local conservation activities. After a few years, the association decided to take steps to establish an ICCA under the national Decentralization Law, which assigns management responsibility for natural resources to the Rural Municipality. Funding was received under GEF's Small Grants Programme for technical advice. Based on local traditional practices and beliefs, the association developed a zoning and management plan for the future ICCA. The pan included no-entry zones (sacred areas that overlapped with fish spawning grounds), local resident fishing zones (exclusively for local consumption and markets), and zones that prohibited the use of motorized boats. The association also developed a governance structure that combined traditional practices such as ritualisation of the ICCA borders by fetishes, a council of "wise people" that conducts conflict resolution, and consensus-based decision-making. Additionally, a monitoring plan was established to track progress in fisheries recovery. What makes this ICCA unique among community-based initiatives in Senegal is that the association sought to establish and demarcate the conservation territory within the formal framework of the Decentralization Law, with approval by regional and municipal authorities, and in collaboration with the state fishery agency.

The ICCA, now officially established and sanctioned by the Governor, Regional Council, and the Council of the Rural Municipality, was called Kawawana, the Djola acronym for the phrase "our ancestral patrimony we all wish to conserve."

ICCA Consortium. 2012. Bio-Cultural Diversity Conserved by Indigenous Peoples and Local

Communities: Examples and Analysis:
http://www.iccaforum.org/images/stories/Database/publications/biocultural_div_booklet_reprint.pdf

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

Three Parties have developed quantitative targets in line with Aichi Biodiversity Target 14.

- Colombia: Priority Activity (Ecosystem restoration, recuperation and rehabilitation), by 2014, 280,000 hectares are restored or rehabilitated, for protection purposes, including connected biological corridors, and deforestation has been avoided
- Dominican Republic: Target 14, by 2016, increase the level of connectivity between protected ecosystems and local participation, taking into consideration the participation of women in management activities and benefits obtained from such activities
- Timor-Leste: Priority Target 2, by 2015, rehabilitation activities in critical watershed and degraded lands have been undertaken and at least one million trees have been planted per year; and sustainable livelihoods have been provided to local communities through ecosystem restoration activities.

Both France and the United Kingdom have set outcome and process-oriented targets.

- France: Target 6, preserve and restore ecosystems and their functioning.
- United Kingdom has set two Priority Actions. The first is to align measures to protect the water environment with action for biodiversity, including through the river basin planning approach under the EU Water Framework Directive. The second is to reform the water abstraction regime. The new regime will provide clearer signals to abstractors to make the necessary investments to meet water needs and protect ecosystem functioning. In this Priority Action, the United Kingdom will also take steps to tackle the legacy of unsustainable abstraction more efficiently.

Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

NBSAPs are cornerstones for the implementation of the CBD. The Conference of the Parties has encouraged countries to use their NBSAPs as opportunities to mainstream biodiversity across government, sectors, and national development planning processes such as poverty reduction strategies and National Adaptation Programs of Action.

The NBSAP allows individual Parties to identify their needs, priorities and opportunities for biodiversity in light of their broader national goals. Parties have been encouraged to revise their NBSAPs in line with the Strategic Plan for Biodiversity 2011 – 2020. These strategies and action plans, which are increasingly being developed at regional and sub-national levels as well, offer important entry points for linking biodiversity with the broader Post-2015 Development Agenda. NBSAPs that are created as a strong policy instrument with mainstreaming at their core can help facilitate implementation of future SDGs through:

- Institutional arrangements for inter-ministerial coordination on sustainable development;
- Institutional coordination between national and sub-national levels;
- Landscape, coastal, and seascape level planning that incorporate biodiversity and ecosystems considerations;
- Monitoring and evaluation of the status of ecosystems;
- Capacity-development for sectors and cross-sectoral actors on the relevance of biodiversity and ecosystem services and they can help underpin social and economic development programmes; and
- Communication platforms that raise awareness of the link between biodiversity, ecosystems, and sustainable development, both with the public and with decision-makers in the political and the political and economic spheres.

South Africa's National Spatial Biodiversity Assessment 2004 and National Biodiversity Assessment 2011

South Africa's innovative National Spatial Biodiversity Assessment (NSBA) and the subsequent National Biodiversity Assessment 2011 (NBA) informs land-use policy and decision-making at national, provincial, and municipal levels and serve as important tools for co-operative governance and mainstreaming. The NSBA combined several layers of spatial biodiversity information, including: the incidence and location of species of concern; critical areas for certain ecosystem processes such as carbon sequestration and water production. These layers were linked with information on ecosystem status and protection levels, and present and future threats to ecosystem integrity. The resulting information highlights areas that should be prioritized for conservation action. At the policy level, the NSBA was linked to South African laws and policies across different sectors, and provides valuable indicators and targets that can feed into monitoring and reporting requirements under national environmental legislation.

Following from the NSBA 2004, South Africa completed the NBA 2011, which includes an agreed set of national biodiversity targets, provides a standard national spatial data set, and incorporates terrestrial, freshwater, estuary, and marine components. The NBA is designed to be used in a number of applications, such as: streamlining environmental decision-making; strengthening land-use planning; providing spatial inputs to strategic national development planning (e.g. through scenario planning that informs decisions

related to trade-offs between ecosystem services and sectoral development projects); and identifying priorities for ecosystem restoration and management, including opportunities for green job creation.

South Africa National Spatial Biodiversity Assessment 2004: http://bgis.sanbi.org/nsba/project.asp
South Africa National Biodiversity Assessment 2011: http://bgis.sanbi.org/nba/project.asp

Example of Targets or Similar Mechanisms That Can Help Achieve the Strategic Plan and Address Sustainable Development

Australia has set a target that by 2015, all jurisdictions will review relevant legislation, policies and programs to maximize alignment with Australia's Biodiversity Conservation Strategy. Serbia, in its Objective 3.3, has set to increase national awareness and use of economic valuation of biodiversity techniques as a mechanism for more accurately assessing and accounting for economic trade-offs between biodiversity protection and human activities that may result in biodiversity loss. Serbia's Objective 4.2 is to strengthen the legal framework for biodiversity conservation and ensure enforcement and compliance of biodiversity related legislation.

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