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### INFORMAL ADVISORY COMMITTEE ON COMMUNICATION, EDUCATION AND PUBLIC AWARENESS

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#### **STAKEHOLDERS AND MESSAGES FOR AICHI BIODIVERSITY TARGETS**

*Note by the Executive Secretary*

1. In decision XII/2 C, the Executive Secretary was requested, subject to the availability of resources, to carry out a number of activities in support of communication, education and public awareness, and of the United Nations Decade on Biodiversity, including conducting a workshop, on the basis of a review of existing knowledge and a gap analysis and in collaboration with representatives of different stakeholder groups and taking into account behavioural analysis studies, to develop and utilize messaging approaches for the specific target groups in the context of the different Aichi Biodiversity Targets, and to report on the outcomes of the workshop to the Conference of the Parties at its thirteenth meeting;
2. The Executive Secretary is circulating the present document for the information of participants in the Messaging workshop organized in the context of the meeting of the Informal Advisory Committee on Communication, Education and Public Awareness, scheduled for 28 and 29 July 2016.
3. The document is a review, for each of the Aichi biodiversity targets, of some of the main target groups, potential actions and a number of success stories. These are meant to inform the discussion by the workshop on messaging for each of the targets.
4. The document was prepared by the Secretariat of the Convention on Biological Diversity, with content drawn from the fourth edition of the *Global Biodiversity Outlook* and relevant national reports.

## **AICHI BIODIVERSITY TARGETS: ACTIONS, TARGET GROUPS, MESSAGING**

Communicating the Aichi Biodiversity Targets in a way that supports actions by different target groups requires a nuanced strategy which provides both umbrella messages, as well as specific messaging for relevant target groups. The first section provides information on messaging that is applicable for all targets, followed by a target-by-target analysis.

### **Messaging – General information (applicable for all targets)**

Messages communicated about biodiversity must appeal to target audience, but not overload them with information, information that may not be relevant for all. Because the word “biodiversity” is not always easy for everybody to understand, use ‘simple’ words and images which help convey both its meaning and its significance – for example, the ‘web of life’, animals, plants and their interactions etc.

Important to:

- Use easy and accessible words/terms
- Make the message relevant for people - target specific groups with specific messages
- Stay away from negative messaging; better to use positive messaging, as fear often gets the opposite effect
- Create personal link between the person and nature
- Convey the importance/desirability of sustainable development to the point where people may not understand the complexities of biodiversity but understand that through their behaviour they have the power to change.
- Thus it is important to include factual information about the significance of the value of biodiversity in relation to overall sustainability – for example, by linking biodiversity to issues like climate change and to the concept of ecosystem services.

### **Messaging – top-line messages from Global Biodiversity Outlook 4**

*Global Biodiversity Outlook 4*, issued as an evaluation of the state of implementation of the Aichi Biodiversity Targets and the Strategic Plan for Biodiversity, provided the following summary of the top level conclusions:

*“Since the agreement of the Strategic Plan for Biodiversity 2011-2020 in 2010, encouraging steps have been taken around the world to tackle biodiversity loss at many levels. Nevertheless, it is clear from this mid-term review that, on their current trajectory, they will not be sufficient to meet most of the Aichi Biodiversity Targets by the deadlines committed to.*

*The Strategic Plan and the Aichi Biodiversity Targets remain a solid framework on which to concentrate action that will lead us towards a world in harmony with nature. They also point the way towards many actions that will meet multiple needs of human societies, including the aspirations currently being discussed in the context of the Sustainable Development Goals.*

*The following general conclusions can be drawn from the assessment carried out for this Outlook:*

- *Meeting the Aichi Biodiversity Targets would contribute significantly to broader global priorities addressed by current discussions on the post-2015 development agenda: namely, reducing hunger and poverty, improving human health, ensuring a sustainable supply of energy, food and clean water, contributing to climate-change mitigation and adaptation, combating desertification and land degradation, and reducing vulnerability to disasters.*
- *Actions to achieve the various Aichi Biodiversity Targets should be undertaken in a coherent and coordinated manner; the individual Aichi Biodiversity Targets should not be addressed in isolation.*

*Actions towards certain targets, notably those that address the underlying causes of biodiversity loss, the development and implementation of national biodiversity strategies and action plans, the further development and sharing of information, and the mobilization of financial resources, will have an especially strong influence on the achievement of the other targets.*

- *Attaining most of the Aichi Biodiversity Targets will require implementation of a package of actions, typically including: legal or policy frameworks; socioeconomic incentives aligned to such frameworks; public and stakeholder engagement; monitoring; and enforcement. Coherence of policies across sectors and the corresponding government ministries, is necessary to deliver an effective package of actions.*
- *It will be necessary to broaden political and general support for the Strategic Plan for Biodiversity 2011-2020 and the objectives of the Convention. This will require working to ensure that all levels of government and stakeholders across society are aware of the multiple values of biodiversity and related ecosystem services.*
- *Partnerships at all levels are required for effective implementation of the Strategic Plan for Biodiversity 2011-2020, to leverage broad-scale actions, to garner the ownership necessary to ensure the mainstreaming of biodiversity across sectors of government, society and the economy and to enable synergies in the national implementation of the various multilateral environmental agreements.*
- *There are opportunities to support implementation of the Strategic Plan through enhanced technical and scientific cooperation among Parties. Further capacity-building support will also be needed, especially for developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition.*
- *An overall substantial increase in total biodiversity related funding, is needed for the implementation of the Strategic Plan for Biodiversity 2011–2020.”*

#### **Quick guides for each of the Aichi Biodiversity Targets:**

The Secretariat developed a set of guides for the Aichi Biodiversity Targets with the aim to provide Parties and other stakeholders with communications approaches tailored to each of the Aichi Biodiversity Targets. The guides succinctly explain key terms, highlight implications for national target setting, provide guiding questions for national target setting, provide ideas for preliminary national actions, identify possible indicators to monitor progress and identify further resources.

<https://www.cbd.int/doc/strategic-plan/targets/compilation-quick-guide-en.pdf>

#### **Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society**

*Aichi Biodiversity 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.”*

Theme: *Awareness increased*

*Potential actions for behaviour change*

- Facilitate and encourage the engagement of citizens in biodiversity issues
- Develop and implement coherent, strategic and sustained communication efforts, strategies and campaigns
- Integrate awareness and understanding of biodiversity and its values
- Develop a greater understanding of the social, economic and cultural drivers motivating behavioural change and their interplay
- Undertake periodic, consistent and comparable assessments of biodiversity awareness.

For countries, these actions can be implemented and developed alone or in partnership with a range of different actors. Important to analyze the target stakeholder groupings – for example, what are their relevant values, interests, attitudes and experiences in relation to biodiversity conservation – and tailor accordingly.

#### *Target Audience*

This target is applicable to all groups, including the general public, politicians, land owners, government departments, politicians, non-governmental organizations (NGOs), business and industry, scientists and community-based groups, schools and universities etc.

#### *Possible indicators*

- Trends in awareness and attitudes to biodiversity
- Trends in public engagement with biodiversity
- Trends in communication programmes and actions promoting social corporate responsibility
- Trends in articles on biodiversity

#### *Success stories*

- Latest Eurobarometer shows that familiarity with the term biodiversity has increased in 18 member states since 2010. In 2013 fewer than half of Europeans (44%) reported having heard of the term biodiversity (as compared to 35% in 2007), and some 30% had heard of the term and knew what it meant. The survey also found that slightly more than a quarter of respondents (26%) had never heard of the term biodiversity, a decrease from 35% in 2007.
- The results from the UEBT Biodiversity Barometer surveys suggest that between 2009 and 2013 there has been a steady increase in the number of people that can provide correct and partially correct definitions of the term biodiversity. Of the 11,000 individuals surveyed in 2013, 67% had heard of the term biodiversity.

**Aichi Biodiversity 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.”*

#### **Theme: Biodiversity values integrated**

##### *Potential actions for behaviour change*

- Share information on the values of biodiversity and related ecosystem services, including information on natural capital
  - Demonstrate the link between biodiversity and development and poverty goals, and support integration into such planning processes
  - Reflect the values of biodiversity in national budgets and accounting systems
- Raise awareness of the need to include biodiversity considerations in urban and spatial planning

#### *Target Audience*

- Governments, policy advisors, businesses, NGOs, local communities

#### *Possible indicators*

- Trends in incorporating natural resource, biodiversity, and ecosystem service values into national accounting systems and budgets
- Trends in number of assessments of biodiversity values, in accordance with the Convention
- Trends in guidelines and applications of economic appraisal tools

- Trends in integration of biodiversity and ecosystem service values into sectoral and development policies
- Trends in policies considering biodiversity and ecosystem services in environmental impact assessment and strategic environmental assessment

### *Success stories*

#### Case Study: Good practices in Poverty Reduction Strategies Papers – Kenya’s Forest Accounts

- Evidence of the Value of Forest and Deforestation on Kenya’s Economy - UNEP’s technical report Kenya Integrated Forest Services (UNEP, 2012a) shows evidence of the value of these forests and the effects of deforestation. In the 10-year period, 2000-2010, deforestation in Kenya’s Water Towers amounted to an estimated 50,000 ha. By 2010 such deforestation of montane forests yielded a timber and fuelwood volume of 250 m<sup>3</sup> /ha, with a cash value of 272,000 KSh7 /ha. At an estimated deforestation rate of 5,000 ha/yr by 2010, this was equivalent to a revenue of approximately KSh 1.362 million in 2010. These types of revenue streams provide an incentive for illegal deforestation activities. However, this cash revenue comes at a large cost to the national economy, through losses in regulating services.
- Whereas the cash value of forest products has a once-off value, the benefits of regulating services in preceding years continue to be felt in the economy in every subsequent year that the national asset, the Water Towers, is degraded. By 2010, the cumulative negative effect of deforestation on the economy through reduction in regulating services was an estimated KSh 3.652 million/yr, more than 2.8 times the cash revenue of deforestation.
- The preliminary estimate of the partial contribution of forestry in Kenya to the economy of Kenya, is 3.6% per year (this value is most likely underestimated as, for example, the tourism sector and carbon sequestration service were not considered).

**Aichi Biodiversity 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.”*

#### *Theme: Incentives reformed*

##### *Potential actions for behaviour change*

- Develop measures and timelines to phase out harmful incentives already in place
- Substantial and widespread changes to incentives, including subsidies, are required to ensure sustainability. Incentives and subsidies for forestry, fisheries, agriculture, transport, biofuels, and fossil fuels can lead to deforestation, overfishing, land use change, and rising levels of carbon dioxide in the atmosphere. Ending or reforming incentives, including subsidies, harmful to biodiversity is thus critical, and will generate net socio-economic benefits if carried out properly.

##### *Target Audience*

- Governments, policy advisors, key industries such as fisheries, forestry, agriculture and transport, regional organizations, businesses, consumers

##### *Possible indicators*

- Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out
- Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalize adverse impacts.

### *Success stories*

Incentives measures for the conservation and sustainable use of biodiversity in China:

- Over the last decade, China has implemented a number of incentive measures to promote conservation and sustainable use of biodiversity in agriculture and forestry.

These measures include:

- Eliminating subsidies unfavourable to biodiversity
- Subsidizing households that return cultivated land to forests
- Subsidizing projects on natural forest protection
- Subsidizing projects of returning grazing land to grasslands

**Aichi Biodiversity 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.”

Theme: ***Sustainable consumption and production***

*Potential actions for behaviour change*

- Promoting sustainable consumption and production is a complex task that requires a combination of supporting policies, technological innovations and lifestyle changes
- Strengthen bonds between public-private, civil society and governments
- Provide incentives, regulations, guidelines for sustainable development and consumption
- Raise awareness about environmental impacts
- Encourage public/private sectors to calculate footprints
- Ensure government sustainable procurement policies in line with CBD
- Sector specific production and consumption plans
- Track policies and measure effectiveness of sustainable products and consumption
- Conservation and sustainability included in corporate sustainability plans

*Target Audience*

- Governments, businesses, civil society, regional organizations, consumers in general

*Possible indicators*

- Trends in Ecological Footprint and/or related concepts
- Trends in extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting
- Trends in biodiversity of cities
- Ecological limits assessed in terms of sustainable production and consumption
- Trends in population and extinction risk of utilized species, including species in trade

**Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use**

**Aichi Biodiversity 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.”

**Theme: Habitat loss halved or reduced***Potential actions for behaviour change*

- Forest and habitat protection from clearance and/or further degradation from fire and the overharvesting of timber and non-timber resources can be among the most effective instruments for conserving forests and other habitats
- Ensure that local populations manage forests - often advocated as a potential win-win for local people and biodiversity
- National level - identify factors causing habitat loss, especially the ones easiest to address.
- Identify stakeholders that may be affected by efforts to reduce habitat loss – how to involve them and address their need
- Develop legal and policy framework for land use and spacial planning
- Align existing incentives with national objectives for land use and spacial planning
- Create new incentives to reduce land loss, degradation and fragmentation
- More moderate meat consumption and reduce waste from food systems
- Engage with general public in activities to conserve biodiversity and reduce illegal/unplanned land use change
- Develop effectively managed protected area networks and other area based conservation measures
- Monitor land use and land-cover
- Implement law enforcement activities.

*Target Audience*

- Governments, general population, local authorities, public/private, policy advisors

*Possible indicators*

- Trends in proportion of degraded/threatened habitats
- Trends in extent of selected biomes, ecosystems and habitats
- Trends in condition and vulnerability of ecosystems
- Trends in fragmentation of natural habitats
- Population trends of habitat dependent species in each major habitat type

*Success stories***Conserving and Restoring Habitats in China:**

- The Government of China has, in recent years, reinforced its efforts in biodiversity conservation, through measures such as restoring degraded ecosystems and afforestation. Several key ecological projects continue to be implemented, such as natural forest protection, returning cultivated lands to forests and forest belt construction in north, northeast and northwest China as well as in the Yangtse River basin and coastal areas. Forest resources in China have been increasing recently - forest areas increased by 23%, forest coverage rate by 4% and forest reserves by 22% compared with those of a decade ago. The implementation of key ecological

projects has enhanced recovery of degraded ecosystems and habitats for wild species, thus effectively conserving biodiversity

Pathways for reductions in habitat loss: Brazil case study:

- Deforestation has declined rapidly since 2004 in the Amazon and Atlantic Forest - Recent efforts have reduced Amazon deforestation in 2013 by 70% below the historical 1996-2005 baseline of 19,600 km<sup>2</sup> year<sup>-1</sup>. This reported reduction in deforestation rate is fully coherent with the most recent high-resolution global analyses of deforestation and “to date, only Brazil produces and shares spatially-explicit information on annual forest extent and change”. Deforestation has also steadily declined in the Atlantic Forest despite a slight increase in 2013. Current rates of deforestation of ≈200 km<sup>2</sup> year<sup>-1</sup> in Atlantic Forest are in the same scale of estimated regrowth rates of 280 km<sup>2</sup> year.
- The rapid decline in deforestation in the Brazilian Amazon and Atlantic Forest are the result of a wide range of interrelated public and private policy initiatives. In 2004, Brazil launched the Action Plan for the Prevention and Control of Deforestation in the Amazon. This action plan included more efficient satellite driven enforcement campaigns by Brazil’s environmental agency to crack down on illegal deforestation and logging, as well as creation of protected areas (PA), including demarcation of indigenous lands. Thus, moving towards the objective of strong reductions in habitat loss embodied in Aichi Target 5 has depended on many actions that correspond to a broad range of Aichi Targets and goals.

**Aichi Biodiversity 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.”

Theme: **Sustainable management of marine living resources**

*Potential actions for behaviour change*

- Promote and enable dialogue, and enhance cooperation and information exchange between fishing and conservation communities and the corresponding national agencies and associations
- Make greater use of innovative fisheries management systems
- Remove/phase-out harmful subsidies
- Increase monitoring and enforcement of regulations to prevent illegal fishing activities in each country
- Better fishing practices and gear that does not cause negative impacts on seafloor and non-target species
- Establish networks of marine protected areas, as well as time/area closures for the protection of nursery ground.

*Target Audience*

- Fisherman, coastal countries, conservation groups, governments

*Possible indicators*

- Trends in proportion of depleted target and bycatch species with recovery plans
- Trends in area, frequency, and/or intensity of destructive fishing practices
- Trends in catch per unit effort



- Trends in extinction risk of target and bycatch aquatic species
- Trends in fishing effort capacity
- Trends in population of target and bycatch aquatic species
- Trends in proportion of utilized stocks outside safe biological limits

### *Success stories*

#### Case study: UK Fisheries

- The fisheries around the British Isles were already severely overexploited by the late 1900s. This situation is changing, however, throughout the Northeast Atlantic, including around the UK, where the proportion of fish stocks that are being harvested sustainably and are at full reproductive capacity has shown an increasing trend since 1990. This sustainability indicator reached a maximum in 2011, at 47% of the 15 stocks for which accurate time series are obtainable from stock assessment reports. The moves towards sustainability may also help buffer adverse impacts of climate change and promote resilience within the marine ecosystem and fishing sector.

**Aichi Biodiversity Target 7:** “By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.”

#### Theme: **Sustainable agriculture, aquaculture and forestry**

##### *Potential actions for behaviour change*

- Building diversity into landscapes and food systems can provide multiple sources of nutrients and vital ecosystem services such as pollination, clean water, and natural pest and disease control
- Increase agricultural efficiency
- Reduce waste throughout production and consumption phases
- Maintain sustainable diets
- Promote the use of certification and labeling systems or standards
- Support customary sustainable use (education, indigenous peoples and local communities)
- Engage with local farmers/fisherman to promote sustainability
- Promote integrated landscape-level planning (pollination, pest control, water provision, erosion control)
- Sustainable plantations can be enhanced by planting in small blocks, leaving natural forest along watercourses and using mixtures of indigenous species.

##### *Target Audience*

- Local farmers/fishermen, indigenous peoples and local communities, governments, businesses, NGOs

##### *Possible indicators*

- Trends in area of forest, agricultural and aquaculture ecosystems under sustainable management
- Trends in population of forest and agriculture dependent species in production systems
- Trends in production per input
- Trends in proportion of products derived from sustainable sources

*Success stories*

Whole-of-paddock rehabilitation, New South Wales and Western Australia:

- Australian government funding supported Greening Australia to work with farmers, catchment management authorities and NRM groups in central-western New South Wales and southwest Western Australia to deliver rehabilitation of enclosed grazing areas over three years. Greening Australia engaged farmers to temporarily volunteer a paddock of at least 10 hectares to be planted with native trees and shrubs, with the aim of returning around 25% of the paddock to deep-rooted perennial vegetation. The vegetated paddocks are withdrawn from production for five years and farmers receive stewardship payments to offset some of their production loss. Livestock are permitted to be reintroduced after five years under a rotational grazing system after the plantings have established. This whole-of paddock rehabilitation project was a practical, cost-effective way of integrating conservation and production goals. Key benefits included increased biodiversity, carbon sequestration, return of ground cover and productive native perennial pastures and shrubs, and salinity and erosion control with improved grazing productivity of paddocks. These outcomes will have long-lasting impacts on the environment and agricultural production. Re-establishing connectivity and restoring landscape biodiversity will help mitigate the effects of climate change and help contain pests and diseases as well as providing shelter and shade for livestock and improving soil condition.

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

Theme: **Pollution reduced**

*Potential actions for behaviour change*

- Identify the types of pollution to address - may be easiest to start by identifying and addressing point sources of pollution but ultimately non-point or diffuse sources of pollution will need to be addressed also
- Develop and enforce national water and air quality guidelines
- More efficient use of fertilizers and better management of animal wastes
- Improve nutrient use to reduce losses to the environment
- Eliminate phosphates
- Improve sewage and industrial waste water treatment
- Conserve and restore wetlands and other important ecosystems necessary to nutrient cycling
- Reuse and recycle plastics, and use biodegradable alternatives.

*Target Audience*

- National policy advisors, governments, farmers, fishermen, water management plants, plastic manufacturers,

*Possible indicators*

- Impact of pollution on extinction risk trends
- Trend in emission to the environment of pollutants relevant for biodiversity
- Trend in levels of contaminants in wildlife

- Trends in incidence of hypoxic zones and algal blooms
- Trends in nitrogen footprint of consumption activities
- Trends in ozone levels in natural ecosystems
- Trends in pollution deposition rate
- Trends in proportion of wastewater discharged after treatment
- Trends in sediment transfer rates
- Trends in water quality in aquatic ecosystems.

#### *Success stories*

##### Clean and Green programme in Nauru:

- Poor waste management and uncontrolled pollution can exacerbate degradation and hamper the restoration of both inland and coastal ecosystems on Nauru. Very few efforts have been carried out by local communities to address the issues of waste and pollution. Although a national waste collection system exists, a huge percentage of wastes in Nauru does not make its way into the public dumpsite and ends up around homes in the coastal areas and inshore reefs. The programme Clean and Green, government-funded and community driven, has proven highly successful at educating the public and facilitating the proper management and disposal of household wastes. The Clean and Green Programme engages and trains a contingent of some 140 young workers who are fully employed selected from the 14 districts to help promote awareness and education on waste management and provide support services to facilitate the effective collection and disposal of household wastes by district communities.

**Aichi Biodiversity 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.”*

##### Theme: **Invasive alien species prevented and controlled**

##### *Potential actions for behaviour change*

- Raise awareness among policy makers, the general public and potential importers of alien species
- Develop lists of alien species known to be invasive/develop indicators of invasion that track any progress towards achieving targets
- Increasing efforts to identify and control the main pathways responsible for the introduction of alien species
- Putting in place measures for the early detection and rapid response to species invasions
- Identifying and prioritizing those invasive alien species with the greatest potential to cause negative impact on biodiversity
- Need to bridge the gap between growing scientific understanding of biological invasions, policies adaptation, and management action to ensure efficient measures against invasive alien species.

##### *Target Audience*

- Policymakers, Governments, border patrol, general public, importers of alien species

##### *Possible indicators*

- Trends in number of invasive alien species
- Trends in invasive alien species pathways management

- Trends in the impact of invasive alien species on extinction risk trends
- Trends in incidence of wildlife diseases caused by invasive alien species
- Trends in the economic impacts of selected invasive alien species
- Trends in policy responses, legislation and management plans to control and prevent spread of invasive alien species.

### *Success stories*

#### Invasive species management in New Zealand:

- New Zealand is one of the most invaded countries in the world, primarily by virtue of the very high propagule pressure exerted upon it by intentional species introductions. This legacy of introductions and transformation by European colonists was intended to recreate a familiar landscape and lifestyle. Today, New Zealand is a country whose primary industry depends on alien species, but which has leveraged its isolation, as both an island nation and one very distant from major trading partners, to turn the tide on unwanted species invasions. New Zealand's strong policy of border protectionism originated from agriculture, both from a desire to prevent deleterious invasions of disease and other organisms, to protect local markets, and also to promote export of products from New Zealand that are considered as highly valuable regarding sanitary and phytosanitary concerns (Trampush, in press). New Zealand is also a country rich in endemic biodiversity, and the agricultural border protection measures put in place translated readily to conservation border protection, when the biodiversity impacts of invasive species were recognized.
- For protection of biodiversity from invasive species impacts, New Zealand has focused on using islands as arks where threatened species can be reintroduced. New Zealand has also pioneered the development of methods to eradicate pests as invasive alien species particularly introduced mammals, from islands to increase the amount of pest-free land area. New Zealand has eradicated introduced mammals from over 100 islands.

**Aichi Biodiversity Target 10:** *“By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.”*

#### Theme: **Pressures on vulnerable ecosystems reduced**

##### *Potential actions for behaviour change*

- Sustainably manage fisheries on coral reefs and closely associated ecosystems
- Manage coastal zones and inland watersheds in an integrated manner
- Increase the spatial coverage and effectiveness of marine and coastal protected and managed areas
- Manage coastal development to ensure that the health and resilience of coral reef ecosystems are not adversely impacted and promoting sustainable coral reef tourism
- Maintain sustainable livelihoods and food security in reef-dependent coastal communities
- At a national level, identify other ecosystems vulnerable to climate change and related impacts.

##### *Target Audience*

- Local tourism, local fisherman, conservationists, coastal communities, indigenous peoples and local communities, countries.

*Possible indicators*

- Extinction risk trends of coral and reef fish
- Trends in climate change impacts on extinction risk
- Trends in climatic impacts on community composition
- Trends in climatic impacts on population trends
- Trends in coral reef condition
- Trends in extent, and rate of shifts of boundaries, of vulnerable ecosystems.

*Success stories*

## Reducing local threats through private coral reef management:

- Local anthropogenic threats pose the greatest risk to coral reefs in Southeast Asia. However, reef management in the region is often limited by lack of funds and resources. One approach for overcoming this challenge is the use of private sector resources for coral reef conservation. The establishment of the Sugud Islands Marine Conservation Area (SIMCA) in Sabah, Malaysia was initiated by owners of the sole dive resort situated within SIMCA, in collaboration with the Sabah Wildlife Department, for the purpose of protecting the area's coral reefs and marine environment. The SIMCA was officially declared an IUCN category II conservation area in 2001. This private management approach has helped to mitigate the impacts of tourism and fishing on SIMCA's reefs, resulting in improved biodiversity conditions.

**Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity**

**Aichi Biodiversity Target 11:** *“By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.”*

**Theme: Protected areas increased and improved***Potential actions for behaviour change*

- Expand protected area networks and other effective area-based conservation measures, integrate protected areas into wider land and seascapes
- Improve and regularly assess management effectiveness and equitability of protected areas
- Implement adequate protection for inland water environments through additional measures to protect rivers upstream and downstream from existing terrestrial protected areas
- Create, control and manage protected areas with indigenous peoples and local communities
- Develop and implement sustainable finance plans for protected area systems.

*Target Audience*

- Conservationists, policy advisors, governments, indigenous peoples and local communities.

*Possible indicators*

- Trends in extent of marine protected areas, coverage of key biodiversity areas and management effectiveness

- Trends in protected area condition and/or management effectiveness including more equitable management
- Trends in representative coverage of protected areas and other area based approaches, including sites of particular importance for biodiversity, and of terrestrial, marine and inland water systems
- Trends in the connectivity of protected and other area based approaches integrated into land and seascapes
- Trends in the delivery of ecosystem services and equitable benefits from protected areas.

### *Success stories*

#### *Ex situ* conservation of Hungarian vascular wild plants:

- To preserve the seeds of the wild vascular flora of the Pannonian biogeographical region of Hungary over the long-term, a five-year project “Establishment of the Pannon Seed Bank for the long-term ex situ conservation of Hungarian vascular wild plants” was initiated in 2010 with co-financing from the Hungarian Ministry of Rural Development and the EU Life+ Fund. The project aims to achieve this goal through expanding the current functions of Hungary’s main agricultural gene bank, the Centre for Plant Diversity. The establishment of a joint seed bank for the agricultural and wild flora will conserve the genetic diversity of the Pannonian biogeographical region’s entire flora, including the wild flora as well as crop and vegetable plants serving human nutrition.

**Aichi Biodiversity Target 12:** *“By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.”*

#### Theme: **Extinction prevented**

##### *Potential actions for behaviour change*

- Identify and prioritize species for conservation based on status assessments
- Fill in gaps with regards to global, national and regional species conservation status assessments
- Develop and implement species action plans that include specific conservation actions aimed directly at particular threatened species.
- More representative and better-managed protected area systems, placing priority on important biodiversity sites
- Reduce loss, degradation and fragmentation of habitats, and actively restore degraded habitats
- Promote fishing practices that take account of the impact of fisheries on marine ecosystems and non-targeted species
- Control or eradicate invasive alien species and pathogens
- Reduce pressures on habitats through sustainable land-use practices
- Ensure that no species is subject to unsustainable exploitation for domestic or international trade
- To prevent further extinctions of known threatened species, substantial conservation investment is needed across terrestrial, freshwater and marine ecosystems: it is estimated that investment needs to increase by an order of magnitude in order to reduce the extinction risk of known threatened species.

##### *Target Audience*

- Conservationists, ecologists, environmentalists, policy advisors, governments.

*Possible indicators*

- Trends in abundance of selected species
- Trends in extinction risk of species
- Trends in distribution of selected species.

**Aichi Biodiversity Target 13:** *“By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.”*

**Theme: Genetic biodiversity maintained**

*Main Actions*

- Promote public policies and incentives to maintain local varieties of crops and indigenous breeds in production systems
- Enhance the use and maintenance of genetic diversity in plant and animal breeding programmes
- Raise awareness of the importance of genetic diversity and its contribution to food security
- Integrate the conservation of the wild relatives of domesticated crops and livestock in management plans for protected areas
- Maintain support for national and international *ex situ* conservation, for example, gene banks of plant and animal genetic resources.
- Develop appropriate conservation strategies for breeds that are at risk.
- Implement measures to maintain indigenous breeds, or improve the conservation status of breeds at government level.

*Target Audience*

- Farmers, local communities, local governments, conservationists, agriculture/scientists, governments.

*Possible indicators*

- Trends in genetic diversity of cultivated plants, and farmed and domesticated animals and their wild relatives
- Trends in genetic diversity of selected species
- Trends in number of effective policy mechanisms implemented to reduce genetic erosion and safeguard genetic diversity related to plant and animal genetic resources.

**Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services**

**Aichi Biodiversity 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.”*

**Theme: Ecosystems and essential services safeguarded**

*Potential actions for behaviour change*

- Identify the ecosystems that are particularly important in providing ecosystem services, with particular attention to ecosystems upon which vulnerable groups are directly dependent for their health, nutrition and general well-being and livelihoods
- Restoration activities, such as forest and wetland landscape restoration, will increasingly be needed to re-establish ecosystem functioning and the provision of valuable services
- Consolidate policy processes - wider application of these efforts could contribute significantly to the achievement of the objectives of the Convention and this target specifically.
- Improve monitoring of the status of ecosystems that are particularly important and of the essential services that they provide
- Remove perverse subsidies and other forms of public support for infrastructure that destroys, fragments or degrades ecosystems
- Enhance the protection and restoration of those ecosystems providing essential services
- Invest in and making better use of traditional knowledge, about ecological systems, processes and uses held by indigenous and local communities, and promoting customary sustainable use.

*Target Audience*

- Conservationists, governments, indigenous peoples and local communities, industry (timber, fisheries etc.), farmers, fishermen.

*Possible indicators*

- Population trends and extinction risk trends of species that provide ecosystem services
- Trends in benefits that humans derive from selected ecosystem services
- Trends in proportion of the population using improved water services
- Trends in proportion of total freshwater resources used.

*Success stories*

## Improving ecosystem services - South African Working for Water programme

- The Working for Water (WfW) programme was established in 1995, with the aim to restore and maintain water provision in the Western Cape of South Africa that have been altered by invasive introduced tree species. Conceived and funded to provide poverty relief, the programme creates jobs by employing people from previously disadvantaged communities to clear invasive alien plants. This example illustrates how tackling a single target, when appropriately implemented, can contribute to moving towards a variety of other targets.

**Aichi Biodiversity Target 15:** “By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.”

**Theme: Ecosystems restored and resilience enhanced***Potential actions for behaviour change*

- Identify highly degraded ecosystems, and develop efforts towards restoring 15% of those highly degraded ecosystems.
- Expand programmes on active restoration of native habitats (passive restoration or rewilding are cost efficient alternatives)



- Land-use mapping and planning approach, for the protection and restoration of native vegetation on vulnerable sites
- Identify and prioritize restoration areas, particularly those of importance to ecosystem services and areas of abandonment/agricultural use/ human-dominated use/ indigenous and local communities
- Environmental permitting procedures and market instruments and non-market instruments
- Increase the contribution of biodiversity to carbon sequestration through state or private sponsored passive and active afforestation programmes
- Couple income generation with restoration activities
- Promote an integrated landscape approach with stakeholder engagement, with a view to promoting large scale restoration while also meeting the long-term socioeconomic needs of local communities.

#### *Target Audience*

- Conservationists, policy advisors, restoration programs, local communities, governments.

#### *Possible indicators*

- Status and trends in extent and condition of habitats that provide carbon storage
- Population trends of forest-dependent species in forests under restoration
- Trends in area of degraded ecosystems restored or being restored
- Trends in proportion of degraded/threatened habitats
- Trends in primary productivity
- Trends in proportion of land affected by desertification.

#### *Success stories*

##### Grain for Green policy in Western China:

- Desertification, sandstorms and floods in China have been attributed to the extensive land degradation and desertification in the west of the country, which also encompasses the upper reaches of the two largest rivers of China, the Yangtze and the Yellow river. The Grain for Green policy has been initiated in 1999 as a pilot project and it was extended in 2002 to 25 Chinese provinces. The programme was designed to afforest 15 million ha of low-yield farmland and 17 million more ha of barren lands. Moreover, regulations establish that cultivated land on areas with slopes of more than 25° have to be terraced or restored with vegetation that will protect against erosion. To compensate the loss of agricultural fields, the farmers receive subsidies and grains, and they keep all the profits arising from restored forests and pastures. The total planned investment of the Chinese Government in the Grain for Green programme is approximately US\$70 billion.

**Aichi Biodiversity Target 16:** “By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.”

#### **Theme: Nagoya Protocol in force and operational**

##### *Potential actions for behaviour change*

- Deposit instrument of ratification, acceptance, approval or accession to the Nagoya Protocol

- By 2015, legislative, administrative or policy measures and institutional structures for implementing the Nagoya Protocol
- Making national information available through the ABS Clearing-House
- Undertaking awareness raising and capacity building activities, including by engaging with indigenous and local communities and the private sector.

*Target Audience*

- Governments, Nagoya Protocol signatories, local-private-public sector engagement.

*Possible indicators*

- Number of Parties to the CBD that have ratified the Protocol
- Number of Parties to the Nagoya Protocol that have legislative, administrative or policy measures and institutional structures in place for implementing the Nagoya Protocol.

**Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building**

**Aichi Biodiversity 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.”

**Theme: NBSAPs adopted as policy instrument**

*Potential actions for behaviour change*

- NBSAP developed through open, consultative and participatory process involving right-holders, stakeholders, indigenous peoples and local communities
- NBSAP adopted as effective policy instrument recognized across the entire government
- NBSAP up to date and aligned with Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets
- Institutional structures are in place to implement NBSAP including inter-ministerial and inter-sectoral coordination.
- Status of implementation of actions in NBSAP documents.
- Ensure necessary human and financial resources.

*Target Audience*

- NBSAP Countries

*Possible indicators*

- Number of NBSAPs adopted by target dates
- Number of policy instruments at different levels of government
- Trends in implementation of National Biodiversity Strategies and Action Plans, including development, comprehensiveness, adoption and implementation.

*Success stories*

Several Parties have set targets in their NBSAPs which surpass the level of ambition set out in the Strategic Plan. For example:

- **Dominica:** Aichi Biodiversity Target 4 11 – “By 2020, at least 20% of terrestrial, inland water and 15% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem service, are conserved through comprehensive ecologically representative and well-connected systems of effectively managed, protected areas and other means, and integrated into the wider land and seascape.”
- **The Gambia:** Aichi Biodiversity Target 15 – “By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 50 per cent of degraded ecosystems”

**Aichi Biodiversity Target 18:** *“By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.”*

**Theme: Traditional knowledge accepted**

*Potential actions for behaviour change*

- Develop guidelines that recognize and safeguard the rights of indigenous peoples and local communities over their knowledge.
- Develop national action plans supporting community action plans for both traditional knowledge and customary sustainable
- Promote local initiatives that support traditional and local knowledge of biodiversity and promote customary sustainable use
- Involve indigenous peoples and local communities in the creation, control, governance and management of protected areas
- Raise awareness of the importance of traditional knowledge to the conservation and sustainable use of biodiversity
- Support and cooperate in the organization of capacity building activities on relevant issues under the Convention for indigenous peoples and local communities
- Promote effective participation of indigenous peoples and local communities, at all levels, in issues related to biodiversity and of interest to them.

*Target Audience*

- Indigenous peoples and local communities, policy advisors, government, businesses, NGOs.

*Possible indicators*

- Trends in degree to which traditional knowledge and practices are respected through: full integration, participation and safeguards in national implementation of the Strategic Plan
- Trends of linguistic diversity and numbers of speakers of indigenous languages
- Trends in land-use change and land tenure in the traditional territories of indigenous and local communities
- Trends in the practice of traditional occupations.

**Aichi Biodiversity Target 19:** “By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.”

Theme: ***Knowledge improved, shared and applied***

*Potential actions for behaviour change*

- Develop inventories of existing biodiversity information as a means of identifying knowledge gaps and defining research priorities
- For knowledge already available, further develop the clearing-house mechanism at national and global levels
- Strengthen and promote the further mobilization of, and access to, data
- Promote a culture of data-sharing
- Facilitate use of biodiversity related information by decision makers at national and local levels
- Monitor land-use change, provide near-real time information where possible, in particular for “hotspots” of biodiversity change
- Engage indigenous peoples and local communities as well as relevant stakeholders in information collection and use
- Support communities and stakeholders in relevant skill fields, and strengthen cooperation among relevant national institutions, national and regional centres of biodiversity expertise
- Ensure that relevant biodiversity information is made available in a way that it can be easily accessed, and improving national, regional and international clearing-house mechanisms.

*Target Audience*

- Global reach, local-national-international, governments, conservationists, indigenous.

*Possible indicators*

- Number of maintained species inventories being used to implement the Convention
- Trends in coverage of comprehensive policy-relevant sub-global assessments including related capacity building and knowledge transfer, plus trends in uptake into policy.

*Success stories*

Landscape based approaches for assessment of ecosystem health at multiple spatial scales:

- The World Agroforestry Centre is leading the development of techniques that are being used to catalogue and map ecosystems health across the global tropics. The Land Degradation Surveillance Framework (LDSF) database currently holds detailed data from more than 20,000 plots sampled from 125 sites in more than 30 countries. The sites cover major climatic zones, different agricultural systems, natural forests and protected areas. The database provides access to important metrics needed to assess the current health of the ecosystem.

**Aichi Biodiversity Target 20:** “By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.”

Theme: **Financial resources from all sources increased**

*Potential actions for behaviour change*

- Articulating the various values of biodiversity for the economy and society through national, and where relevant, subnational, assessments
- Developing national financial plans for biodiversity, as part of NBSAPs
- Implement agreed targets on resource mobilization
- Broadening biodiversity funding sources, including by exploring innovative financial mechanisms.

*Target Audience*

- Financial support structures, signing parties, local governments.

*Possible indicators*

- In decision X/3 the Conference of the Parties adopted a set of 15 indicators to assess progress in the implementation of the financial resource mobilization strategy and Target 20 of the Strategic Plan.
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