LOCAL BIODIVERSITY OUTLOOKS

Indigenous Peoples' and Local Communities' Contributions to the Implementation of the Strategic Plan for Biodiversity 2011-2020

A complement to the fourth edition of the Global Biodiversity Outlook

Forest Peoples Programme

United Nations Decade on Biodiversity

Convention on Biological Diversity

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Photo credits cover page, clockwise from top left:

1. *Sherpa villagers preparing for Lumbum, a special Buddhist ceremony linking culture and nature, at sacred Gokyo Lake. This lake is a Ramsar site which is one of many Sherpa ICCAs overlapped by Sagarmatha (Mt. Everest) National Park and World Heritage Site, Nepal. Courtesy Pasang Tshering Sherpa*
2. *By shifting from chemical to organic rice production and nurturing habitats for insects and other small creatures, local communities in several locations in Japan have facilitated the return of the threatened white stork to their environment. Courtesy Photo library of Toyooka City, Hyogo Prefecture, Japan*
3. *Naga women harvesting snail from the wet terrace field in the upland North East India. Courtesy Christian Erni*
4. *Women group for weaving and natural dying, northern Thailand. Courtesy IMPECT Association*
5. *Protesters against Dakota Access Pipeline (DAPL) at Sacred Stone Camp on the Standing Rock Indian Reservation in North Dakota. Credits: Sacred Stone Camp Facebook Page*
6. *Local indigenous fisherfolks in Hormuz Island, Iran, carefully releasing an endangered green turtle (Chelonia mydas) caught in their fishing gear. Courtesy Koosha Dab, Cenesta*
7. *Students from Cayman Islands schools in Grand Cayman engage in a community-based restoration program in South Sound following the devastation caused by Hurricane Ivan. The restoration is part of Mangrove Action Program's Marvellous Mangroves curriculum-based hands-on science program which has been taught in all Cayman Islands schools since 2001, and has since been adapted and translated for use in 13 countries worldwide. Courtesy Martin Keeley and Mangrove Action Project*
8. *Tagbanwa child looking over part of Coron Island, the first Ancestral Domain title composed of both terrestrial and marine ecosystems recognized in the Philippines. Courtesy Maurizio Farhan Ferrari, FPP*
9. *Healthy reef in community-managed Namena Marine Reserve, Fiji. Courtesy Michael Webster, Coral Reef Alliance.*

Acknowledgements

Conference of Parties (COP) Decision XII/1 "*Encourages Parties, other Governments and relevant organizations, as appropriate, to take steps to disseminate widely the fourth edition of the* Global Biodiversity Outlook *and its findings, including by… producing other appropriate communication products for different stakeholders and making them publicly available*". The International Indigenous Forum on Biodiversity (IIFB), in proposing this report and contributing case studies and perspectives for inclusion, has recognised this imperative from the Conference of Parties and worked to fulfil its obligation to provide additional information to aid the implementation of the Strategic Plan for Biodiversity (2011-2020).

The idea for this Local Biodiversity Outlooks (LBO) publication first emerged at a meeting of the IIFB working group on indicators at the Twelfth Meeting of the COP to the Convention on Biological Diversity, COP12, in Pyeongchang, Republic of Korea (October 2014), where the fourth edition of *Global Biodiversity Outlook* (GBO-4) was launched. While GBO-4 contained a number of community-based examples and initiatives contributing to the Strategic Plan, the IIFB members concluded that Indigenous Peoples and Local Communities (IPLCs) should be sharing their own success stories and challenges in relation to biodiversity, conservation and sustainable use and development.

After several meetings and discussions in IIFB, it was decided that IPLCs would produce their own "Local Biodiversity Outlooks" to complement the GBO-4. The Secretariat of the Convention on Biological Diversity provided support to the initiative. Forest Peoples Programme (FPP) took the lead in coordinating this project, working in close collaboration with the IIFB.

The LBO publication is based on case studies that were submitted by IIFB members from all regions. FPP would like to thank all contributors: Jorge Luis Andreve, Alejandro Argumedo, Beau J. Austin, Grace Balawag, Otto Bulmaniya Campion, Florence Daguitan, Nicholas Fredericks, Chrissy Grant, Kamal Kumar Rai, Peter Kitelo, Cecil Le Fleur, Florina Lopez, Thingreiphi Lungharwo, Onel Masardule, Walter Quispe Huilcca, Phrang Roy, Wilson Sandi Hualinga, Daniel ole Sapit, Tui Shortland, Rashed Al Mahmud Titumir, Prasert Trankansuphakon, Kapuas Hulu communities, Liliana Pechene and Jeremias Tunubala.

The case studies, which are the centrepieces of the different chapters, have been supplemented by research by FPP's writing team. Additional information was provided by Marie-Josée Artist, Million Belay, Rodrigo de la Cruz, Taghi Farvar, Nimal Hewanila, Lazarus Khairabeb, Dipujjal Khisa, Gathuru Mburu, Miguel Angel Pereira Guadalupe, Ruth Spencer, Wendy Pineda, Barbara Zimmerman, and Polina Shulbaeva.

Drafts of the LBO report were made available for peer review. This process included responses from case study contributors about how their experiences were reflected and embedded in the wider discussion of the Aichi targets. Maria Yolanda Teran also contributed to the review of the draft report. FPP is especially grateful for the submissions by Bolivia, Aotearoa/New Zealand, Sweden and Venezuela as part of the peer review.

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While FPP has taken great care to ensure that all information in this LBO report is evidence-based and arising from the case-study contributions, it assumes full responsibility for any errors or omissions in this work.

The production of the LBO was enabled through financial contributions from SRC/SwedBio and by the European Union through a grant provided for the preparation of the fourth edition of the Global Biodiversity Outlook and related products.

December 2016

Forest Peoples Programme

Community-generated damar resin forests and fishponds in Krui, Lampung, Indonesia, which provide the basis for integrated landscape management, are threatened by the expansion of oil palm plantations. Courtesy Marcus Colchester, FPP

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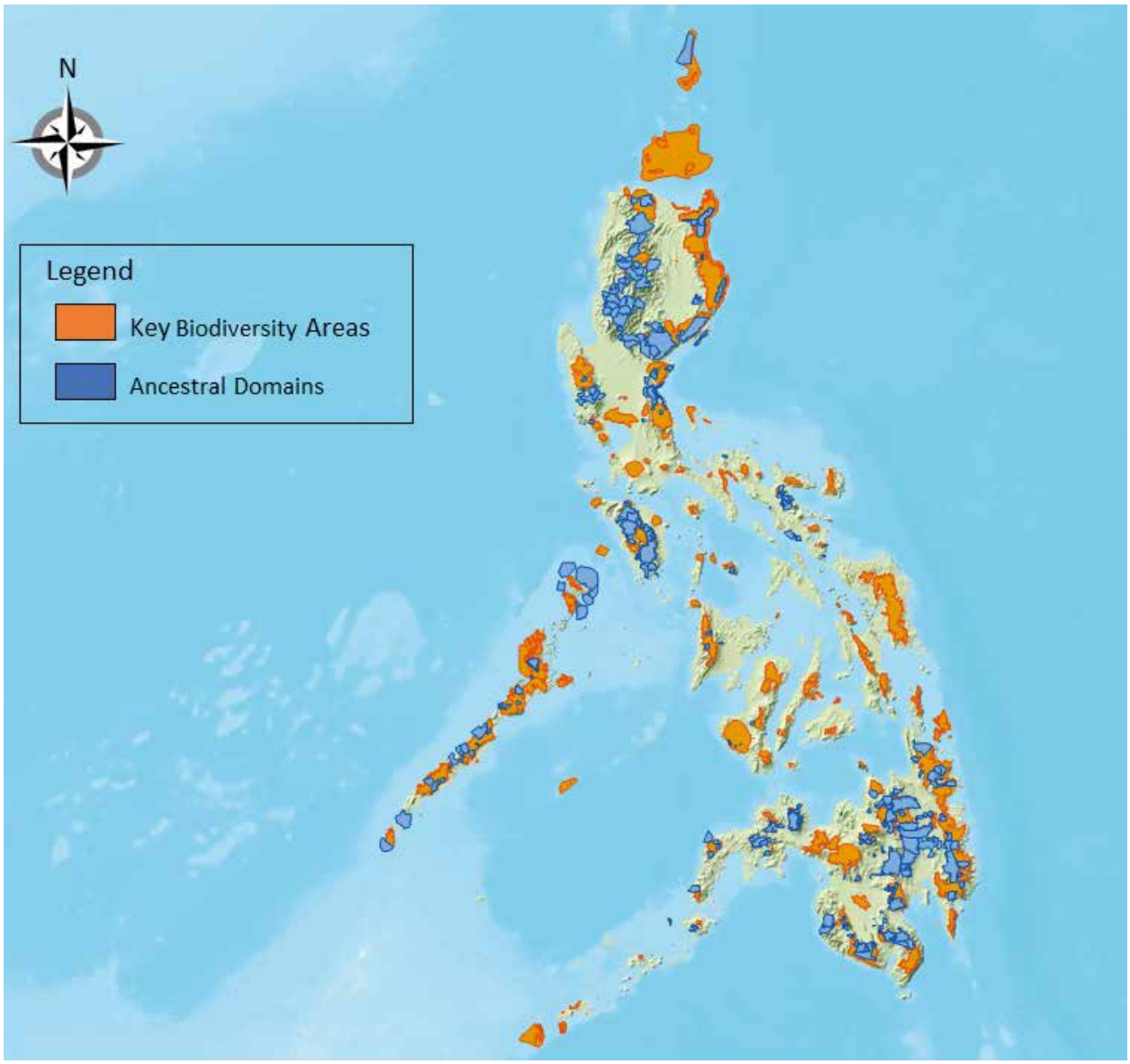
Acronym list

CBA	Community-Based Adaptation
CBD	Convention on Biological Diversity
CBMIS	Community-based Monitoring and Information systems
CEPA	Communication, Education and Public Awareness
CFS	The Committee on World Food Security
CIFOR	Centre for International Forestry Research
COP	Conference of the Parties
CSO	Civil Society Organisation
CSU	Customary Sustainable Use
ECLAC	Economic Commission for Latin America and the Caribbean
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAO-RAP	The FAO Regional Office in Asia and the Pacific
FLEGT	Forest Law Enforcement, Governance and Trade
FPIC	Free, Prior and Informed Consent
FPP	Forest Peoples Programme
GAR	Golden Agri Resources
GBO-4	Global Biodiversity Outlook 4
GEF	Global Environment Facility
GEF-SGP	Global Environment Facility Small Grants Programme
GIAHS	Globally Important Agricultural Heritage Systems
GISP	Global Invasive Species Programme
GPS	Global Positioning System
HCS	High Carbon Stock
IAS	Invasive Alien Species
ICCA	Indigenous Peoples' and Community Conserved Territories and Areas
IEAG	Independent Expert Advisory Group
IFAD	International Fund for Agricultural Development
IIED	International Institute for Environmental Development
IIFB	International Indigenous Forum on Biodiversity
IIPFCC	The International Indigenous Peoples' Forum on Climate Change
ILK	Indigenous and Local Knowledge
ILO	International Labour Organization
IPAF	IFAD Indigenous Peoples Assistance Facility
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCCA	Indigenous Peoples' Biocultural Climate Change Assessment Initiative
IPLCs	Indigenous Peoples and Local Communities
IPSI	International Partnership for the Satoyama Initiative
ITM	Indigenous Terra Madre
IUCN	International Union for the Conservation of Nature
IWGIA	International Work Group for Indigenous Affairs
LMMA	Locally-Managed Marine Area

MEAM	Marine Ecosystems and Management
MPAs	Marine Protected Areas
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
PA	Protected Area
PES	Payments for Ecosystem Services
PIC	Prior Informed Consent
REDD+	Reducing Emissions from Deforestation and Forest Degradation
Rio+20	United Nations Conference on Sustainable Development (2012)
RMIB-LAC	Indigenous Women's Biodiversity Network from Latin America and the Caribbean
RRI	Rights and Resources Initiative
SBI	Subsidiary Body on Implementation
SCBD	Secretariat of the Convention on Biological Diversity
SDG	Sustainable Development Goal
SIDS	Small Island Developing States
TKIP	Traditional Knowledge Information Portal (of the Convention on Biological Diversity)
UNCED	United Nations Conference on Environment and Development (1992)
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Climate Change Convention
UNU	United Nations University
VPA	Voluntary Partnership Agreement
WCIP	World Conference on Indigenous Peoples
WRI	World Resources Institute
WWF	World Wildlife Fund



56 per cent of all terrestrial Key Biodiversity Areas (including protected areas, parks, critical watersheds, etc.) overlap with indigenous peoples' ancestral domain titles. Approximately 90 per cent of the remaining forest cover of the Philippines is situated within ancestral domains. Courtesy Philippine Association for Intercultural Development (PAFID) and AnthroWatch.

Forewords

The Strategic Plan for Biodiversity 2011-2020 provides an ambitious global framework for action to save biodiversity and enhance its benefits for people. Explicit in the Strategic Plan is that, while governments have a key enabling role to play, they will be unable to meet the Aichi Biodiversity Targets on their own. The active and effective involvement of all actors will be required to bring about the changes necessary to realize the vision of a world living in harmony with nature.

The wellbeing of indigenous peoples and local communities and biodiversity are inextricably linked. Indigenous peoples and local communities around the world are already acting as stewards of biodiversity. Their traditional practices, customs and knowledge are, and will continue to be, essential in preserving the world's biodiversity. This report highlights numerous ways in which indigenous peoples and local communities are making tangible contributions to all of the Aichi Biodiversity Targets. Greater recognition and support for these actions is needed.

This report also highlights a number of global challenges facing indigenous peoples and local communities in maintaining their traditional practices relevant to the conservation and sustainable use of biodiversity. However, it also proposes a number of possible key actions to help address these and to allow indigenous peoples and local communities to more meaningfully contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020.

The fourth edition of the Global Biodiversity Outlook, and its related assessments, concluded that while there has been significant progress made towards meeting some components of the majority of the Aichi Biodiversity Targets, in most cases the targets are not on track to be met and additional action is needed to keep the Strategic Plan for Biodiversity 2011-2020 on course. This report makes it clear that indigenous peoples and local communities should be viewed as partners in undertaking the changes necessary to put the world back on track.

Braulio Ferreira de Souza Dias

Executive Secretary,
Convention on Biological Diversity

Indigenous peoples and local communities have historically contributed to the collective management of natural resources in their territories, preserving around 80% of the planet's biodiversity. Core elements of this collective management are: their traditional knowledge; their own forms of organisation; norms and community protocols which are key to achieving a harmonious coexistence and balance between humans, Mother Nature and the universe.

The respect, recognition and practice of indigenous peoples' traditional knowledge, as contained in Articles 8(j), 10(c) and related provisions of the CBD, are essential for the use, management and conservation of natural resources. These Articles recognise community and indigenous knowledge and traditional practices as cornerstones for the conservation and sustainable use of biodiversity, and the equitable sharing of benefits arising from the utilisation of genetic resources.

Indigenous peoples and local communities have been involved and have actively participated in the creation and presentation of proposals in CBD processes. Since 1996, efforts have been coordinated under the International Indigenous Forum on Biodiversity (IIFB), a body that this year, 2016, celebrates its twentieth year.

The Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity has promoted consultation and active dialogue between the Parties to the CBD and the IIFB. This allowed the Conference of the Parties to adopt a Programme of Work on Traditional Knowledge in 2000, as well as a Plan of Action on Customary Sustainable Use in 2014. Target 18 of the Strategic Plan for Biodiversity (2011-2020) embodies the CBD's commitments to respect traditional knowledge and customary sustainable use.

This publication, "***Outlooks on Biodiversity: Indigenous Peoples and Local Communities' contributions to the implementation of the Strategic Plan for Biodiversity 2011-2020. A complement to the fourth edition of the Global Biodiversity Outlook***", highlights the collective actions undertaken by indigenous peoples and local communities. They should inspire further action and collaboration to implement holistic, cosmogonic and inclusive approaches for the management and conservation of biological and cultural diversity. These collective actions represent our contribution to the UN Decade on Biodiversity (2011-2020), part of our greater responsibility to live in harmony with Mother Earth.

Ramiro Batzin

Executive Director, Sotz'il

IIFB Global Coordinator

The bulk of the forest and marine resources remaining in Central America are found within or bordering the areas customarily governed and/or used by indigenous peoples and peoples of African descent. The map provides clear evidence that the most effective way to protect the region's ecosystems and their biodiversity is by providing support to those peoples who have traditionally been their stewards.

This map has been modified to fit the format of this publication.

Courtesy International Union for Conservation of Nature Regional office for Mexico, Central America and the Caribbean IUCN (ORMACC. 2015)

AS, ÁREAS PROTEGIDAS
TURALES en Centroamérica
TED AREAS

SIMBOLOGÍA / SYMBOLOGY

- Pueblos Indígenas/Indigenous Peoples
- Zonas sin vegetación natural/No forest
- Árboles dispersos/Scattered trees
- Sabana de pino de tierras bajas /Lowland pine savanna
- Bosque conífero/Coniferous forest
- Bosque seco/Dry forest
- Bosque mixto/Mixed forest
- Bosque latifoliado/Broadleaf forest
- Páramo/Paramo
- Humedales/Wetlands
- Corales/Coral reef
- Pastos marinos/Seagrass
- Cuerpos de agua natural y artificial /Natural and artificial bodies of water
- Tortugas marinas/Sea turtles
- Manatíes/Manatees
- Ciudades capitales/Main cities
- Centros poblados/Towns

N

Escala 1:2.000.000

Executive Summary

Background

This publication presents the perspectives and experiences of indigenous peoples and local communities (IPLCs) on the implementation of the Strategic Plan for Biodiversity. It is intended to complement the fourth Global Biodiversity Outlook (GBO-4) by presenting the perspectives and experiences of IPLCs, and describing their contributions towards realising each of the Strategic Plan's goals and targets. To this end, accounts of local actions in different parts of the world were gathered from members of the International Indigenous Forum on Biodiversity (IIFB). The findings demonstrate that IPLCs are contributing enormously to the implementation of the Strategic Plan through their collective and on-the-ground actions, and that there is great potential for future collaboration between IPLCs and other actors in this regard.

The future of biodiversity and the future of IPLCs are inextricably linked. Recognition of these linkages (between cultural diversity and biological diversity) has grown in recent years and is embodied in the CBD's Strategic Plan. Target 18 is of central importance in this regard, focusing specifically on traditional knowledge and customary sustainable use. It is the main target related to the implementation of two of the most relevant articles of the CBD for IPLCs – Article 8(j) and Article 10(c) – and represents a cross-cutting theme for the entire Strategic Plan. Traditional knowledge and customary sustainable use are relevant to all the Aichi Biodiversity Targets, as is shown in the following pages.

This document explores the significance for IPLCs of each of the Plan's five Strategic Goals and 20 Aichi Biodiversity Targets in turn, and discusses the implications of recent trends and progress. It presents snapshots of on-the-ground initiatives by IPLCs and demonstrates that they are making vital contributions to the implementation of all 20 targets, although many challenges remain. Finally it outlines the way forward, highlighting key potential actions to accelerate progress in the implementation of the Plan as it relates to IPLCs.

Strategic Goal A

Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Why the goal is important to indigenous peoples and local communities (IPLCs)

Addressing the causes of biodiversity loss is crucially important to IPLCs because the future of biodiversity and the future of IPLCs are inextricably linked. Together, biological and cultural diversity underpin socio-ecological systems and increase resilience to environmental and social change. Mainstreaming values related to biological and cultural diversity into all aspects of governance and planning is essential if the powerful drivers of biodiversity loss are to be countered.

Experiences of IPLCs and contributions to the goal

IPLCs, with their diverse local economies, customary systems and traditional knowledge, offer complementary perspectives on the causes of biodiversity loss and are actively working to counter some of the drivers of loss. Through community land use and territorial management plans, many IPLCs are working to keep natural resource use on their lands and territories within safe ecological limits. IPLCs are also contributing to the establishment and implementation of sustainability standards in commodity supply chains. Incentive systems such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) and Payments for Ecosystem Services (PES) can bring either benefits or challenges for IPLCs; those systems that have appropriate levels of IPLC participation and due respect for their rights can be cost-effective in conserving biodiversity while simultaneously contributing to climate change mitigation and community wellbeing.

IPLCs are actively seeking to raise awareness of biological and cultural diversity at all levels through the organisation of events; the production of written and audiovisual materials; the use of the internet and social media, and the facilitation of intercultural dialogue. IPLC networks and international fora, such as the International Indigenous Forum on Biodiversity (IIFB) and the CBD's Traditional Knowledge Information Portal (TKIP), also play an important role in raising awareness of global biodiversity perspectives amongst their members. Thus IPLCs are contributing to information flow in both directions: from the local to the global and from the global to the local.

Key potential actions related to IPLCs that could accelerate progress, if more widely applied

- Increase support and strengthen communication channels for education and awareness-raising about biodiversity and cultural diversity, including activities under the joint awareness-raising programme between UNESCO and the CBD Secretariat on the importance of biological and cultural diversity and IPLCs' knowledge, lifestyles and low-impact development models.
- Increase engagement in intercultural dialogues on biodiversity, maintaining respect for diverse views and values.
- Integrate values related to biodiversity and cultural diversity in planning and decision-making, consistent with the CBD's ecosystem-based approach.
- Establish inclusive and robust mechanisms for increased participation and engagement of IPLCs in sustainable development planning and decision-making at all levels.
- Develop guidelines on the use of monetary and non-monetary incentives (including the granting/recognition of secure land tenure and access rights) to ensure respect for IPLCs' rights and consideration of their needs and cultural perspectives.
- Develop partnerships with IPLCs to implement and monitor compliance with economic, environmental, social, and cultural sustainability standards.
- Develop binding national regulations that complement existing voluntary standards in order to address underlying drivers of biodiversity loss. These should include national regulations for commodity supply chains.

Courtesy Khumbu Sherpa Culture Conservation Society

Strategic Goal B

Reduce the direct pressures on biodiversity and promote sustainable use

Why the goal is important to indigenous peoples and local communities

Biodiversity loss and unsustainable use have led to severe hardship among IPLCs and threaten the very survival of those who meet their daily needs directly from the local environment. Deforestation and reduced access to forest resources have left many IPLCs without a secure source of food and livelihoods. Unsustainable fishing is damaging not only to biodiversity but also to the survival of those who rely on aquatic resources for their basic needs. Environmental pollution directly affects the health and wellbeing of many IPLCs, and together with the spread of Invasive Alien Species (IAS), also threatens the cultural and ecological integrity of their societies, lands and resources. Many IPLCs are already experiencing severe impacts of climate change, and some have suffered forced relocations linked to melting permafrost and rising sea levels.

Experiences of IPLCs and contributions to the goal

IPLCs' customary systems, as related to their land and resources, have immense potential to contribute to efforts to reduce pressures on biodiversity and develop more sustainable forms of use. For example, research has shown that community-managed forests in the tropics have lower deforestation rates than strict protected areas; that local rule-making autonomy is associated with improved forest management; that given sufficient land, traditional shifting cultivation in South and South-east Asia is sustainable; that traditional fire management often benefits biodiversity, and that many customary fishery systems limit harvest levels and impacts. Customary systems can inform more sustainable, ecosystem-focused practices on a wider scale. Through their customary systems of land and resource use, together with safeguarding Indigenous Territories and Community Conserved Areas (ICCAs), IPLCs are working to reduce anthropogenic pressures on coral reefs and other vulnerable ecosystems. They are also limiting local and global levels of pollution by maintaining and improving traditional agricultural practices. In addition, environmental monitoring by IPLCs is becoming an increasingly important component in efforts to control invasive alien species, as well as in early warning and risk prevention systems and, together with campaigns and litigation, in holding polluters to account.

Key potential actions related to IPLCs that could accelerate progress, if more widely applied

- Develop national and local plans and targets for the effective implementation of the CBD Plan of Action on Customary Sustainable Use.
- Involve indigenous knowledge-holders in relevant expert groups and include case studies of community actions in CBD reports and databases.
- Enhance collaboration between traditional knowledge-holders and scientists to develop innovative approaches to sustainable resource use and to climate change mitigation.
- Recognise, award and support IPLC practices related to sustainable agriculture, aquaculture and forestry including collaborating with the UN Food and Agriculture Organization (FAO) initiative Globally Important Agricultural Heritage Systems (GIAHS).
- Increase institutional support and funding for community-based environmental monitoring, including monitoring related to combating invasive alien species, pollution, and anthropogenic pressures on vulnerable ecosystems.
- Provide technical and financial support for participatory community risk and vulnerability assessments and for community-based adaptation action plans.
- Ensure that zero deforestation commitments safeguard IPLCs' livelihoods and tenure security.
- Support IPLCs' calls for moratoria on unsustainable resource extraction and monoculture plantations.

Strategic Goal C

Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Why the goal is important to indigenous peoples and local communities

The safeguarding of ecosystems, species and genetic diversity is directly in line with IPLCs' priorities because it can support their efforts to safeguard their lands and resources. In addition, many threatened species are culturally significant to IPLCs, while genetic diversity underlies the livelihoods and food security of many IPLCs, especially in their agricultural systems. However, all too often, conservation measures continue to be imposed from above, without attention to issues of equity or appropriate opportunities for participation. This can cause extreme suffering, for example, as the result of forced evictions and displacement from traditional lands and resources; loss of livelihoods and food security following the criminalisation of traditional hunting and harvesting practices; and the loss of life, livestock and crops because of increased human-wildlife conflicts.

Experiences of IPLCs and contributions to the goal

Many IPLCs actively manage their customary lands and waters in ways that conserve them effectively, and these merit greater recognition and support. This positive relationship is exemplified by Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs), which are among the most effective territory or area-based conservation measures and cover about 12% of the world's land area. Many threatened species, including emblematic species, are actively conserved by IPLCs through customary rules and laws that guide and restrict their use. Communities are also increasingly active in monitoring threatened species and in the early identification of problems or threats. IPLCs also contribute to the maintenance of genetic diversity, particularly through their agricultural practices, and in many cases these practices provide important lessons for wider strategies to protect genetic diversity. Maintenance of crop diversity on farms and of wild plant relatives goes hand in hand with food security and security of incomes. Indigenous women play particularly important roles in this, often making key decisions about which seed varieties to maintain, propagate or discard. Livestock-keeping communities (pastoralists) play a crucial role in ensuring the continued existence of different breeds, safeguarding the genetic diversity of farmed and domesticated animals.

Key potential actions related to IPLCs that could accelerate progress, if more widely applied

- Support area-based conservation by IPLCs through formal recognition of customary rights under national law, and through appropriate recognition of ICCAs and sacred sites.
- Enhance implementation of the CBD Programme of Work on Protected Areas and review national institutional and legal frameworks on protected area governance and management.
- Urgently address equity and human rights issues related to conservation (particularly protected areas). Displacement of IPLCs from their lands and resources in contravention of international law should cease immediately.
- Promote the development of national monitoring and conflict resolution mechanisms to complement existing international mechanisms.
- Increase training opportunities for IPLCs and engagement with traditional knowledge-holders, to increase the effectiveness of conservation actions.
- Increase technical and financial support for community mapping, community-based monitoring and wider community conservation actions.
- Enhance support for on-farm and in-situ conservation by IPLCs, with a special focus on women's contributions and on the role of traditional knowledge.

Strategic Goal D

Enhance the benefits to all from biodiversity and ecosystem services

Why the goal is important to indigenous peoples and local communities

The enhancement of benefits from biodiversity and ecosystems depends fundamentally upon legal recognition of customary tenure rights, the restoration and safeguarding of cultural ecosystem services, and the enhancement of ecosystem resilience. IPLCs understand ecosystems as their customary lands, territories, waters and resources, and therefore have a strong interest in these measures. In relation to benefit-sharing, especially where benefits from biodiversity also make use of traditional knowledge, there is additional significance for IPLCs as regards their cultural and intellectual property rights. IPLCs' territories are often exploited unsustainably to capture services and products for others, causing loss and degradation of resources with negative impacts on IPLCs. Similarly many initiatives designed to safeguard ecosystems and carbon stocks have limited IPLCs' access to and use of their lands, posing a significant threat to their wellbeing as well as ultimately reducing ecosystem resilience.

Experiences of IPLCs and contributions to the goal

IPLCs around the world are working to safeguard, conserve and restore biodiversity and ecosystems in their lands and territories and there is increasing and compelling evidence of the effectiveness of their actions. Some actions at the ecosystem level include community territorial and cultural mapping; vulnerability and resilience mapping; participatory development of land-use and territorial plans; and community monitoring to track external pressures, ecosystem health and land use change. Building on their traditional knowledge and natural resource management systems, and through participatory research and action, IPLCs have also made major contributions towards strengthening socio-ecological resilience to environmental variability and carbon sequestration. Pastoralists and smallholder farmers have developed an array of strategies for the sustainable use of marginal areas. In relation to the sharing of benefits, some IPLCs have also already begun to use the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to gain recognition for their traditional knowledge, to press for a share of the benefits from commercial products based on traditional use of genetic resources, and to develop biocultural protocols. IPLCs have also contributed in global platforms that offer opportunities for collaborative approaches, such as the Satoyama Initiative, which takes an inclusive approach and offers tools to better understand and support socio-ecological production landscapes and seascapes.

Key potential actions related to IPLCs that could accelerate progress, if more widely applied

- Legally recognise customary rights and tenure of IPLCs over lands, territories and resources and ensure that carbon sequestration and restoration measures give due regards to these rights.
- Increase support for IPLC practices that enhance ecosystem resilience, restore degraded ecosystems and contribute to carbon sequestration and climate adaptation.
- Expand awareness-raising, experience-sharing and capacity-building activities in relation to the Nagoya Protocol, and develop national and international legal frameworks for its implementation, with full participation of IPLCs.
- Strive for greater dialogue and mutual respect and understanding on concepts related to ecosystems/habitats, ecosystem services, resilience, climate change, carbon offsets and equitable benefit-sharing.
- Take measures to counter the rise in assassinations of environmental and human rights defenders and ensure that the perpetrators are brought to justice.

Strategic Goal E

Enhance implementation through participatory planning, knowledge management and capacity-building

Why the goal is important to indigenous peoples and local communities

Participatory planning offers an opportunity for IPLCs to contribute to the implementation of the CBD's Strategic Plan at all levels. Target 18, which comes under Goal E, is of central importance to IPLCs because it deals directly with traditional knowledge and customary sustainable use.

Experiences of IPLCs and contributions to the goal

IPLCs have much to contribute to translating the global Aichi Biodiversity Targets to the national and local level and to enhancing their implementation nationally and locally. The process of developing, updating and/or revising NBSAPs through participatory planning should enable this to happen, but in practice the process leaves much to be desired. A recent study reported that only 20 Parties reported any involvement of IPLCs in this process and 34% of NBSAPs had no targets at all relating to Target 18. Progress on Target 18 is poor: the loss of traditional knowledge is being reversed in some areas but the overall trend is one of continuing decline, with a continued loss of linguistic diversity, a decrease in traditional occupations and large-scale displacement of IPLCs.

More positively, growing recognition of the role of indigenous and local knowledge alongside scientific knowledge and of IPLCs' collective actions (for example, in recent COP Decisions on resource mobilisation) is reflected increasingly in activities on the ground. The rapid evolution of digital technologies has been significant for IPLCs, greatly enhancing their capacity to ground-truth data derived from remote sensing and global and national data sets. In terms of finance, many IPLCs' initiatives benefit from existing biodiversity funding sources, but IPLCs have reported that some of these sources are difficult for smaller organisations to access. Meanwhile, in some cases, biodiversity funding that has been allocated without the appropriate consultation and participation of IPLCs is proving to have harmful effects on IPLCs and their lands and territories.

Key potential actions related to IPLCs that could accelerate progress, if more widely applied

- Ensure that effective national and sub-national mechanisms are in place for the full and effective participation of IPLCs in policy processes related to the Strategic Plan, including NBSAP processes, the compilation of national reports, and in local implementation.
- Mainstream the Programme of Work on Article 8(j) and Related Provisions and the Plan of Action on Customary Sustainable Use and scale up their implementation by incorporating Aichi Target 18 and linkages with all other Aichi Targets into NBSAP processes.
- Establish improved mechanisms for the systematic monitoring of progress on the indicators related to Target 18.
- Provide systematic support, including funding, for concrete actions: to promote the revitalisation of indigenous languages and traditional occupations, to improve land tenure security, and for effective application of traditional knowledge and customary systems of sustainable use.
- Explore, in consultation with IPLCs, issues around collective actions and ways to aggregate data on collective actions under all the targets in the Strategic Plan.
- Broaden the science-policy interface to include indigenous and local knowledge alongside scientific knowledge, and strengthen the interfaces between global, national, and community levels for knowledge generation, dissemination and application.

Courtesy Fundación para la Promoción del Conocimiento Indígena (FPCI)

The way forward

In 2014, GBO-4 pointed to a worrying lack of progress in the implementation of the Strategic Plan for Biodiversity, and this report confirms that progress is still far from adequate. However, IPLC experiences point to several positive trends, both on the ground and in policy. First, recognition of and respect for traditional knowledge and customary sustainable use is increasing. There is an increasingly substantial body of research confirming the efficacy of IPLC tenure and resource management systems in ecosystem management and in the conservation of habitats and genetic diversity. Second, there is real progress in bringing traditional and scientific knowledge together on the ground to improve natural resource management, partly through the use of innovative technologies. There is also an improved flow of information between local and global networks.

Despite the progress that has been made, overall, unsustainable exploitation continues to drive the loss and degradation of the world's ecosystems, to the detriment of biodiversity and IPLCs. Moreover, conflicts and human rights abuses continue to be shockingly commonplace, not only in relation to resource exploitation but also in relation to conservation.

Moving towards 2020 requires enhanced collaboration across broad sectors of society. IPLCs have an integral role in achieving the Strategic Plan: their contributions and collective actions complement and enrich the efforts of Parties to the Convention and other actors at all levels. To this end, this publication has identified specific actions and initiatives.

Key potential actions related to IPLCs that could accelerate overall progress on implementation of the Strategic Plan for Biodiversity, if more widely applied

- Recognise that biological and cultural diversity are inextricably linked, in line with the Conceptual framework for the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES-2/4), and target them together in an integrated approach to conservation and sustainable use.

- Strengthen mechanisms for participation of IPLCs in global and national policy processes and in national and local implementation.

- Acknowledge the contributions of IPLCs' collective actions in the implementation of the Strategic Plan, including through their inclusion in NBSAP processes and national reports.

- Mainstream traditional knowledge and customary systems of resource use throughout the Strategic Plan and acknowledge their role in offering innovative approaches to current challenges related to biodiversity loss and climate change.

- Uphold the human rights of IPLCs in line with international law. All human rights violations should be publicly denounced by governments and justice pursued for the victims.

- Adjudicate legal recognition of lands, territories and resources of IPLCs.

- Increase support to IPLC initiatives and ensure that it is managed in a culturally appropriate manner and is fully accessible to them.

- Mitigate harmful impacts of biodiversity funding on IPLCs and their lands and territories, by applying social safeguards and free, prior and informed consent (FPIC).

Part 1

Introduction

1

In 2010, the Conference of the Parties to the Convention for Biological Diversity (CBD) adopted the Strategic Plan for Biodiversity (SPB). The Strategic Plan, which is for the period 2011-2020, provides a roadmap for the United Nations Decade on Biodiversity and a global framework for action on biodiversity within the United Nations system and related environmental agreements. In 2014, the CBD published the Global Biodiversity Outlook (GBO-4), a mid-term review of progress towards the targets that were set by the Plan. The current publication is intended to complement GBO-4 by presenting the perspectives and experiences of indigenous peoples and local communities (IPLCs) on the Plan and on the mid-term review.

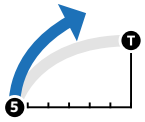
IPLCs are estimated to number one and a half billion across the globe and their customary lands encompass 65% of the world's land area,[1] containing much of the world's biodiversity.[2–4] IPLCs have helped to sustain healthy ecosystems and local livelihoods over long timescales, thus making a substantial contribution to the conservation and protection of biodiversity. The retention and renewal of traditional knowledge from one generation to the next is a key aspect of this process, as is the collective nature of actions by IPLCs. However, large-scale agriculture and mining, industrial fishing, deforestation, and oil and gas production continue to threaten both the biodiversity on IPLC lands and also the diverse cultures and sustainable practices of IPLCs themselves. Therefore the future of biodiversity and the future of IPLCs are inextricably linked. Recognition of these linkages (between cultural diversity and biological diversity) has grown in recent years and is embodied in the CBD's Strategic Plan.

The Strategic Plan is framed by five overarching goals, for each of which there is a set of targets (known as the Aichi Biodiversity Targets). There are 20 targets in total. Of these, Target 18 focuses specifically on IPLCs, calling for respect and inclusion of their traditional knowledge and customary practices, and for the integration of these into the implementation of the CBD. This is a cross-cutting target, and, as GBO-4 states, its fulfilment will contribute to other targets. Therefore the current report explores the significance of each of the 20 targets for IPLCs in turn. The intention is to present a snapshot of on-the-ground biodiversity initiatives and to show how IPLCs are contributing towards the implementation of the Plan, rather than to give a comprehensive response to all aspects of the Plan or a unified perspective from all IPLCs. To this end, accounts of local actions were gathered by the International Indigenous Forum on Biodiversity (IIFB). Most case studies have been submitted by IPLC authors, many of whom are active within IIFB, and the majority of the material included is new and previously unpublished.

The mid-term review, GBO-4, summarises progress by means of a chapter on each target outlining recent trends, current status and future projections, and actions to enhance progress. Similarly the main text of this document consists of a chapter presenting IPLC perspectives and experiences in relation to each of the 20 targets. At the start of each chapter the text of the target is reproduced, together with the GBO-4 "dashboard" diagram (a diagram illustrating the extent of progress on individual components of the target). There follows a brief outline of why the target is important to IPLCs and the rest of the chapter documents the contributions and experiences of IPLCs. Each chapter presents a key message based on these contributions and experiences, and ends by outlining some opportunities and recommended actions. At the end of the publication a concluding chapter presents some overarching proposals and recommendations on ways forward, based on lessons learned.

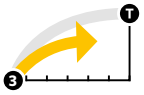
Key to the target "dashboards": A summary of progress towards the Aichi Biodiversity Targets, (adapted from GBO-4)[5]

GBO-4 provides an assessment of progress made towards individual components of each of the Aichi Biodiversity Targets, as well as the level of confidence (★★★), based on the available evidence. The target "dashboard" provides summary information on whether or not we are on track to achieve the targets. The assessment uses a five-point scale:

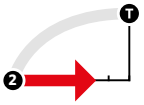


On track to exceed target (we expect to achieve the target before its deadline)

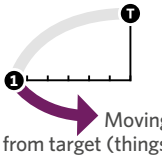
On track to achieve target (if we continue on our current trajectory we expect to achieve the target by 2020)



Progress towards target but at an insufficient rate (unless we increase our efforts the target will not be met by its deadline)



No significant overall progress (overall, we are neither moving towards the target nor away from it)



Moving away from target (things are getting worse rather than better).

The United Nations General Assembly has encouraged all parties, stakeholders, institutions and organisations to consider the CBD's Strategic Plan and its targets in relation to the broader United Nations sustainable development agenda, taking into account its three pillars (social, economic and environmental). The current document reflects this approach in that it also considers outcomes of other political summits where relevant. These include those on sustainable development and climate, and the commitments made during the 2014 World Conference on Indigenous Peoples (WCIP) in relation to implementation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

The relationship between this publication and GBO-4 is summarised in the table below.

This publication has been produced through a collaboration of the International Indigenous Forum on Biodiversity (IIFB), Forest Peoples Programme (FPP) and the Secretariat of the Convention on Biological Diversity (SCBD). It aims to bridge the current information gap between reporting on global targets and reporting on local actions. Ultimately it aims to inspire indigenous peoples and local communities, governments, social movements and civil society, NGOs, business, researchers, donors and broader society each to make their contributions and to work collaboratively towards realising our Strategic Plan for Biodiversity and its 2050 Vision. 2050 Vision: By 2050, biodiversity is valued, conserved, restored and widely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.

GBO-4	Local Biodiversity Outlooks of IPLCs
An overall assessment of the likelihood of reaching each component of the Aichi Biodiversity Targets based on our current trajectory	IPLC perspectives on the Aichi Biodiversity Targets and its relevance
A summary of the recent trends, current status and future projections relating to the Aichi Biodiversity Targets	Scanning of actions and recent trends relating to the Aichi Biodiversity Targets with impacts on IPLCs
Examples of actions and issues helping to illustrate both the progress made and the challenges still faced	Examples of actions and issues experienced by IPLCs helping to illustrate both the progress made and the challenges still faced
Key actions available to help achieve each Aichi Biodiversity Target. Where these actions contribute to several targets is also indicated	Key actions by multiple actors to help achieve the Aichi Biodiversity Targets as they relate to IPLCs

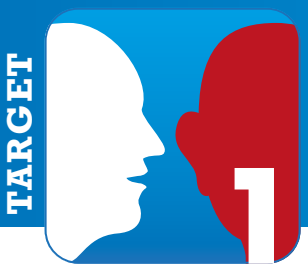
Note on referencing: In the following chapters, superscript Roman numerals refer to footnotes at the bottom of the page and superscript numbers refer to the reference list at the end of the publication.

Part 2

Indigenous peoples' and local communities' contributions and experiences towards achieving the Aichi Biodiversity Targets

Planting mangroves after improving hydrology as part of the Ecosystems Protecting Infrastructure and Communities (EPIC) project by the youth in Klong kham community, Krabi, Thailand

Courtesy Mangrove Action Project - Asia Office



Awareness of biodiversity increased

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.

Key message:

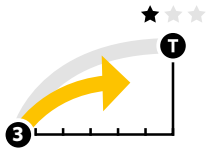
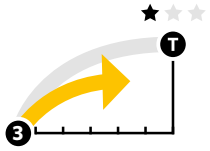
The inter-relatedness of all forms of life, including the inextricable relationships between humans and nature, is central to the cultures of many IPLCs, who have much to offer in terms of raising awareness of multiple and diverse biodiversity values, conservation and sustainable use. Existing communication, education and awareness (CEPA) activities by IPLCs include the organisation of events; the production of written and audiovisual materials; the use of the internet and social media, and the facilitation of intercultural dialogue. IPLC networks also play an important role in raising awareness of global biodiversity perspectives among their members, by sharing policy information with communities in forms that are readily accessible to them.

Why the target is important to IPLCs

Target 1 is of crucial importance to IPLCs because the future of biodiversity and the future of IPLCs are inextricably linked. However, the GBO-4 indicates that progress is not currently sufficient to meet the deadline for the target.[5]

IPLCs can bring valuable experiences and perspectives on biodiversity that may not be evident to others. The word "biodiversity" does not exist in indigenous languages but the underlying concept is central to many IPLC cultures: to their spiritual beliefs, their local economies, their food production systems, their understanding of human health and their knowledge of medicines. Many IPLCs refer to Mother Earth as the fundamental basis for the interconnected and interdependent diversity of life, and this offers a holistic and integrative approach towards biodiversity and cultural values. The CBD supports the valuation of biodiversity "in the broadest sense"[6], and this corresponds well to the perspectives of many IPLCs.

Summary of progress towards the target

Target Elements (by 2020)	Status
People are aware of the values of biodiversity	
People are aware of the steps they can take to conserve and sustainably use biodiversity	

Biodiversity for me is life, where I have my supermarket, my pharmacy, materials for my home, while the creatures who live there are my relatives: trees, medicinal plants, rivers, stones, we are all one. That is why we continue protecting biodiversity, using it in a sustainable way, as it is integrally related to our ways of life, traditional medicine practices, our own production system, wild plant gathering and art in its different forms.

Source: traditional authority in an event on protected areas

Contributions and experiences of IPLCs towards the target

IPLC groups and networks have taken many initiatives to raise awareness of biodiversity, both amongst IPLCs - by empowering and informing them about national and global biodiversity agendas - and also among the wider public and decision-makers, by informing them about the perspectives of IPLCs. They have also worked to create spaces for intercultural dialogue between IPLCs and other actors. Many of these approaches complement the CBD's Programme for Communication, Education and Public Awareness (CEPA). This section presents examples of these initiatives, which can offer multiple approaches to the enhancement of progress on Target 1.

The contribution of the internet and social media

The recent increase in internet access and the use of social media has enabled a rise in information sharing and learning at all levels, by all actors. For example at the global level, the work of both the IIFB and the CBD Secretariat have been enhanced in this way:

- The **International Indigenous Forum on Biodiversity (IIFB)** has its own Communication, Education and Public Awareness (CEPA) working group, which informs CBD delegates and the general public about IPLCs' views and proposals related to the global biodiversity agenda. The group organises side events where IPLCs share their stories and experiences, press conferences at CBD meetings, and media interviews with IPLC representatives, which are shared online.[7] Contributions are posted on the portal website and through Twitter.
- The **CBD's Traditional Knowledge Information Portal (TKIP)** promotes awareness and enhances access by IPLCs to information on traditional knowledge, innovations and practices relevant for the conservation and sustainable use of biological diversity. TKIP also facilitates communication from the local to the global, by providing a space for sharing local issues and experiences with wider CBD stakeholders.[8]

For their part, by sharing stories, experiences and information through the social media, online press, newsletters, blogs, and websites, IPLCs from all regions of the world are raising understanding and support for diverse values of biodiversity and cultures. In addition, IPLC organisations and networks with international experience and expertise are reaching out to others by means of the internet and social media to share information and raise awareness of opportunities or problems in international policy, using indigenous and local languages and concepts, and touching on aspects that are relevant and empowering to them. Thus information flow has increased in both directions: from local to global and from global to local.

IIFB Press Conference at CBD COP13, Korea "Indigenous Peoples and Local Communities: A Historical Perspective", 13 Oct 2014.
Courtesy Polina Shulbaeva

Gatherings, celebrations and events

Gatherings, cultural events and celebrations also generate media attention and serve to reach out to wider audiences. In many countries, IPLCs engage in celebrations and events to showcase their cultures and connections with their lands, and to present their skills and products. Examples include:

- The **Indigenous Crop Biodiversity Festival** held in Maui, Hawaii, in August 2016 as a parallel event to the IUCN World Conservation Congress. This was the first event of its kind and explored some of the most pressing conservation and sustainability issues of our time. These included indigenous crop biodiversity conservation; climate change and invasive species control; sea level rise mitigation; renewable energy efforts, and conservation and indigenous knowledge.[9]
- The **Living Farms Adivasi Food Festival** in India raises awareness of traditional agricultural practices, sustainable food procurement and the food cultures of the Adivasis, as well as exploring issues of food security. The festival encourages an exchange of food knowledge between different tribes.[10,11]
- **Ireecha** is an annual festival that is celebrated in Oromia (one of the ethnically-defined regional states of Ethiopia). It recognises the traditional identity of the Oromo, uniting Oromo visitors from across the world. While primarily a political festival, the festival highlights the Oromo's relationship with nature and their belief that nature is divine and that ecosystems must be protected.[12]
- The **Kalacha Festival**, held annually in northern Kenya, celebrates the cultural heritage and traditional knowledge of the region, offering local communities the opportunity to exchange knowledge and showcase their traditional arts.[13]
- The **Annual Nomadic Festivals (ANF)** in Iran, organise activities at local and national levels. In these festivals nomadic tribes show their skills on natural living and nature conservation.[14,15]
- **Indigenous Terra Madre** is an event celebrating cultural and biological diversity of indigenous communities in northern India (see Box 1.1).

Box 1.1 The Indigenous Terra Madre 2015

Phrang Roy, coordinator of the Indigenous Partnership for Agrobiodiversity and Food Sovereignty[16]

In November 2015 the second Indigenous Terra Madre (ITM 2015) was held in Shillong, Meghalaya, North-east India. Indigenous Terra Madre is an event organised by the Indigenous Partnership for Agro-biodiversity and Food Sovereignty, Slow Food International and North East Slow Food and Agrobiodiversity Society (NESFAS). Bringing together 640 delegates representing more than 170 indigenous food communities from 62 countries across the world, the ITM celebrated the cultural and biological diversity of indigenous communities as expressed in their songs, dance, dress, folklores and food systems. Thematic sessions centred around issues of advancing local food systems, clean and fair food, building networks of local climate-smart crops, and promoting resilient livelihoods and nutritional security. The event showcased indigenous traditional knowledge, evolving skills including culinary innovations, and sustainable practices that safeguard agro-biodiversity and contribute to resilient food systems. The event also facilitated engagement among food communities and participating scientists and policymakers. The gathering adopted "The Shillong Declaration" - a declaration with commitments and proposals for action - which has since been disseminated and communicated widely.[17]

Targeting local audiences: printed and audiovisual materials

Numerous organisations, support groups and communities have developed printed and audiovisual materials on biodiversity-related subjects for use by communities. These include animation videos, comic books, participatory videos, training kits and toolkits. For example there is an **animation video to explain REDD+**[18]. There are also many inspiring examples of community-to-community sharing and learning by means of community radio. For example **indigenous community radio** networks across Central America and in Nepal offer an affordable and accessible means of sharing information on relevant issues and gathering IPLC views and inputs.[19,20]

Facilitating intercultural dialogues

It is challenging for actors from very different backgrounds, and to whom biodiversity has different values and meanings, to understand each other, and the concept of intercultural spaces or dialogues has gained popularity in response to this challenge. Such spaces provide venues for IPLCs and other actors to interact and engage in dialogues where different thoughts, discourses and values are shared.[i]

Intercultural discussions of this kind can create new understandings and enhanced awareness of the diversity of perspectives on biodiversity.

One example is the **Joint Programme between UNESCO and the CBD Secretariat on biological and cultural diversity**, which aims to deepen global awareness of the interlinkages between cultural and biological diversity. Objectives of particular relevance to Target 1 are those to "*support and foster learning networks on biocultural approaches, linking grassroots and community initiatives with local, national, regional and global policy processes*" and to "*raise awareness about the importance of biological and cultural diversity in resource management and decision making processes*".[21]

Finally, Box 1.2 gives an example of a grassroots network that combines many of the above approaches. The **Indigenous Women's Biodiversity Network from Latin America and the Caribbean** facilitates exchange among grassroots organisations on biodiversity-related issues and also organises intercultural dialogues with national governments. In this way bridges for communication are created which assist in the implementation of measures for the conservation of biological diversity.

i For instance IPBES assessments involving diverse knowledge holders and knowledge systems[203]; Dialogue Workshop on Assessment of Collective Action of Indigenous Peoples and Local Communities in Biodiversity Conservation and Resource Mobilisation, 11-13 June 2015, Panajachel, Guatemala[204,202]; the International Partnership for the Satoyama Initiative (IPSI)[149]

Indigenous food fair to promote local food security, northern Thailand. Courtesy IMPECT Association.

Posters raising awareness of the contribution of rotational farming to food security, biological diversity and cultural identity in Mae Umphai village, Thailand. Courtesy Maurizio Farhan Ferrari, FPP

Box 1.2 The Indigenous Women's Biodiversity Network from Latin America and the Caribbean (RMIB-LAC)

Florina López, Coordinator of the RMIB-LAC

The Indigenous Women's Biodiversity Network from Latin America and the Caribbean (*Red de Mujeres Indígenas sobre Biodiversidad de America Latina y el Caribe*: RMIB-LAC) is an example of a network that is operating at different levels and tailors its approaches to serve and address various audiences. RMIB-LAC was founded in 1998 to create a space for a growing number of indigenous organisations, specifically indigenous women, to make their voices heard and to present their proposals in key decision-making arenas at international, regional and national levels. We focus on engaging indigenous women because women are central figures in the protection and transmission of traditional knowledge and practices in relation to the conservation of natural resources, through their teaching and everyday practices. For many indigenous peoples it is mostly the women who put spirituality into practice, by celebrating sacred rites and ceremonies.

Since its inception, RMIB-LAC has strengthened the capacities of hundreds of government representatives and indigenous peoples (mainly in the Latin American region). It has done this in various ways. Firstly, RMIB-LAC develops capacity-building activities to raise public awareness of the values of biodiversity and its sustainable use, complementing what most schools are teaching children about biodiversity. We base our activities on the principle that you cannot value what you do not know, and therefore our work has focused on explaining what biodiversity is, in order that people should be familiar with all its components and their interrelationships. RMIB-LAC also organises training workshops to engage both traditional and state authorities. We work and collaborate with universities and environmental organisations and involve young people, women and men in our workshops.

RMIB-LAC also organises "intercultural dialogues" with national governments. When government representatives from the region speak of biodiversity they tend to do so only in technical terms, which prevents effective communication. This has been overcome through intercultural dialogues in villages, where indigenous peoples connect scientific concepts to indigenous words used to describe the same concepts. This process has enabled the creation of a communication bridge to implement decisions and initiatives for the conservation of biodiversity.

Courtesy Florina Lopez

Sherpa elder transmitting knowledge on the role of Sherpa culture in nature conservation in Khumbu Valley, Sagarmatha (Mt Everest) National Park. Courtesy Tenzing Tashi Sherpa

Opportunities and recommended actions to enhance progress towards the target

- Governments and relevant organisations should support and promote participation of the general public and policymakers in cultural events that celebrate biodiversity and its multiple values, and showcase IPLCs' knowledge and lifestyles.
- Educators should incorporate and promote IPLCs' diverse perspectives and materials in their work.
- All actors should continue to increase their engagement in intercultural dialogues on biodiversity, maintaining respect for diverse views and values.
- IPLCs should continue to establish, consolidate and strengthen networks and channels for communication, education and awareness-raising about biodiversity.

Key resources

Terralingua (2011). Biocultural Diversity Conservation: A Community of Practice. Emerging values through experience. *Langscape* 2(9).

Jackson, S., Storrs, M., & Morrison, J. (2005). Recognition of Aboriginal rights, interests and values in river research and management: perspectives from northern Australia. *Ecological Management and Restoration* 6(2), 105-110.

Biodiversity values integrated

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.

Key message:

The Strategic Plan for Biodiversity presents a unique opportunity to incorporate biological and cultural diversity values into national economic strategies and planning for sustainable development. Joint implementation of the Aichi Biodiversity Targets alongside the 2030 Sustainable Development Agenda opens the door for IPLCs to highlight their diverse local economies, customary sustainable use systems and traditional knowledge as forward-looking contributions to food security, community development and cultural renewal whilst conserving biodiversity and safeguarding Earth.

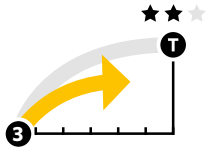
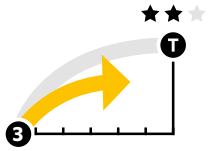
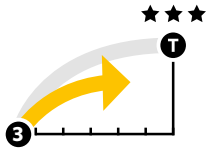
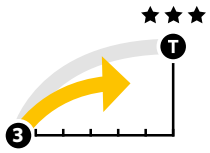
Why this target is important for IPLCs

The GBO-4 indicates that while some progress has been made on integrating biodiversity values into national and local strategies, planning and reporting processes, it is insufficient to reach the target on schedule. This is relevant for IPLCs because of the close linkages between biodiversity and cultural diversity. Biological diversity underpins the resilience of ecosystems, and similarly cultural diversity underpins social resilience for sustainable development. Cultural diversity includes factors such as legal pluralism, respect and recognition of customary law, diverse health traditions, diverse traditional diets, diverse educational institutions (including those involving cultural transmission), and diverse local economies and traditional livelihoods. Holistic and integrative approaches towards biodiversity and cultural values seek to embed these values in all aspects of governance and planning, and are therefore very relevant to efforts to mainstream biodiversity and cultural diversity.

Historically, IPLCs have been impoverished by conventional economic development and marginalised in development planning processes. Ensuring their full and effective participation in planning and decision-making about issues related to economic development, environmental governance and human wellbeing, through robust participatory mechanisms, is highly relevant to the target. However, doing so remains a challenge.

Recognising and valuing IPLCs' contributions to sustainable development planning, decision-making and implementation processes, while respecting their rights, will contribute to holistic, culturally sensitive and socially-acceptable approaches to mainstreaming of biodiversity across government and society, which has the potential to lead to better outcomes for all. For example, recent studies on the resilience of socio-ecological systems have highlighted the importance of interactions between diverse knowledge groups, and of adaptive governance. These factors enable resilience in the face of changes and challenges at the global level.

Summary of progress towards the target

Target Elements (by 2020)	Status
Biodiversity values integrated into national and local development and poverty reduction strategies	
Biodiversity values integrated into national and local planning processes	
Biodiversity values incorporated into national accounting, as appropriate	
Biodiversity values incorporated into reporting systems	

IPLCs have been acknowledged in several recent high level political summits as important actors towards achieving global action plans and potentially central contributors in the transformative agenda for global change. IPLCs now call for bold implementation of the pledges that have been made, through full and effective partnership and support for their diverse and distinct values, perspectives, and contributions. By aligning implementation of the Aichi Biodiversity Targets with the Sustainable Development Goals (SDGs) and upholding the human rights of IPLCs, significant progress can be made towards meeting this target by 2020.

Box 2.1 Global Commitments from Recent Political Summits

Transforming Our World: The 2030 Sustainable Development Agenda	✔ *All countries and all stakeholders, acting in collaborative partnership, will implement this plan. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.*[ii]
Rio+20: The Future We Want	✔ *Enhance the welfare of indigenous peoples and their communities, other local and traditional communities and ethnic minorities, recognising and supporting their identity, culture and interests, and avoid endangering their cultural heritage, practices and traditional knowledge, preserving and respecting non-market approaches that contribute to the eradication of poverty.*[iii]
Paris Climate Change Agreement	✔ *Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate.*[iv]
Addis Ababa Action Agenda of the Third International Conference on Financing for Development	✔ *We recognise that traditional knowledge, innovations and practices of indigenous peoples and local communities can support social wellbeing and sustainable livelihoods and we reaffirm that indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions.*[v]
Sendai Framework for Disaster Risk Reduction 2015–2030	✔ *To ensure the use of traditional, indigenous and local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment, and the development and implementation of policies, strategies, plans and programmes of specific sectors, with a cross-sectoral approach, which should be tailored to localities and to the context.*[vi]
SIDS Accelerated Modalities Of Action [S.A.M.O.A.] Pathway	✔ *To raise awareness and communicate climate change risks, including through public dialogue with local communities, to increase human and environmental resilience to the longer-term impacts of climate change.* ✔ *To develop and strengthen national and regional cultural activities and infrastructures, including through the network of World Heritage Sites, which reinforce local capacities, promote awareness in small island developing States, enhance tangible and intangible cultural heritage, including local and indigenous knowledge, and involve local people for the benefit of present and future generations.*[vii]

ii Preamble, 2030 Agenda for Sustainable Development [205]
iii Political Declaration of Rio+20 UNCED Paragraph 58 (j) [206]
iv UNFCCC/CP/2015/10/Add.1, Article 7, Paragraph 5 [207]
v Section G. Science, technology, innovation and capacity-building, Paragraph 117 [208]
vi Priority for Action 1: Understanding disaster risk paragraph 24 (i) [209]
vii Paragraph 44 (c) (Climate Change) and 81(c) Culture and Sport [210]

Indigenous Peoples at the first World Conference on Indigenous Peoples. New York, September 2014. Courtesy Global Coordinating Group

The rest of this chapter reviews some of the commitments made in recent global summits (see Box 2.1) and then gives some examples of progress in implementation at the national level, through innovative partnerships between governments and indigenous peoples.

In 2014 the UN General Assembly met in a Special Session – the World Conference on Indigenous Peoples (WCIP) – to address implementation of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). Its Outcome Document made commitments concerning indigenous peoples' free, prior and informed consent on legal and administrative measures; the acknowledgment, advancement and adjudication of land rights; knowledge, innovations, technologies and practices; sustainable livelihoods and occupations, ecosystem management and biodiversity; justice systems and the inclusion of human rights, and priorities and strategies in the post-2015 Development Agenda (See Box 2.2).

Box 2.2 Outcome document of the high-level plenary meeting of the General A/RES/69/2 Assembly known as the World Conference on Indigenous Peoples

We commit ourselves, in conjunction with the Indigenous Peoples concerned to:

- *Taking … appropriate measures at the national level, including legislative, policy and administrative measures, to achieve the ends of the Declaration*
- *Consult and cooperate … to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources.*
- *Establish at the national level, fair, independent, impartial, open and transparent processes to acknowledge, advance and adjudicate the rights of indigenous peoples pertaining to lands, territories and resources.*
- *Developing policies, programmes and resources to support indigenous peoples' occupations, traditional subsistence activities, economies, livelihoods, food security and nutrition.*
- *Respecting the contributions of indigenous peoples to ecosystem management and sustainable development, including knowledge acquired through experience in hunting, gathering, fishing, pastoralism and agriculture, as well as their sciences, technologies and cultures.*
- *We confirm that indigenous peoples' knowledge and strategies to sustain their environment should be respected and taken into account when we develop national and international approaches to climate change mitigation and adaptation.*

We note that indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development.[viii]

viii Outcome Document of the World Conference on Indigenous Peoples, Paragraphs 7, 20, 21, 25, 35, 36, 37

Box 2.3 Guaranteeing indigenous peoples' rights Bolivia[25]

The Plurinational State of Bolivia recognises indigenous peoples as distinct historical and political entities in its State policy. This includes recognition of their authority, territory, institutions, and cognitive and spiritual characteristics. Changes to the structure of the State have also led to the formation of indigenous governments in most of the country's municipalities, with concurrent competence to contribute to the protection of the environment, biodiversity, forest resources and wildlife according to their own rules and procedures, maintaining ecological balance and control of environmental pollution. This includes powers for conflict resolution at the local level.

Box 2.4 Sustainable Development Working Group of the Arctic Council[26]

The Arctic Council is a leader in the inclusion of indigenous peoples in strategic planning for sustainable development. Out of a total of 4 million inhabitants of the Arctic, approximately 500,000 are indigenous. Indigenous peoples' organisations have been granted Permanent Participants status in the Arctic Council, with full consultation rights in the Council's negotiations and decisions. The Permanent Participants represent a unique feature of the Arctic Council, making valuable contributions to its activities in all areas. The guiding tenet of the Arctic Council's Sustainable Development Working Group (SDWG) is to pursue initiatives that provide practical knowledge and contribute to building the capacity of indigenous peoples and Arctic communities to respond to the challenges, benefits and opportunities in the Arctic region. The SDWG also contributes to Arctic Council priority areas including Arctic human health, Arctic socio-economic issues, Arctic cultures and languages, adaptation to climate change, energy and Arctic communities, and management of natural resources, taking into account issues such as increases in shipping, petroleum activities, fishing and mining as well as external influences such as climate change and variability.

Intense interactions and binding relationships with reindeer are an integral aspect of the indigenous values associated with the Arctic environment, which are being transmitted across the generations in Saha-Yakutia, Russian Arctic Region. Courtesy Polina Shulbaeva

Contributions by Governments towards the target, in partnership with IPLCs

IPLCs have engaged with governments in all regions to adopt constitutional, legal and policy reforms and measures to address their rights and wellbeing, including the creation of policy spaces and mechanisms for their full and effective participation in planning and decision-making on matters affecting them. Examples include the following:

- The United States - Canada Joint Statement on Climate, Energy, and Arctic Leadership[22] pledged to build a sustainable Arctic economy. The two countries committed to embrace opportunities and confront challenges in the Arctic through indigenous and Northern partnerships and responsible, science-based leadership. They also committed to the incorporation of indigenous science and traditional knowledge into decision-making, including in relation to environmental assessments, resource management, and advancement of understanding of climate change and climate change mitigation.

- Governments in Latin America, many through their adoption of ILO Convention 169[ix], have accepted international obligations to uphold the rights of indigenous and tribal peoples in national development processes, including in relation to their land and natural resources. They have undertaken to collect data on the demographics and social and economic status of indigenous peoples.[x] The region has more than 800 distinct indigenous peoples with a total population of almost 45 million. They range from those living in voluntary isolation to large urban settlements.

- Governments in the Pacific have begun to develop indicators on the wellbeing of Melanesians. They include measures that are directly related to the valuing of biological and cultural diversity, such as access to and availability of customary land; the strength of social relationships and Melanesian values, and understanding of, and ability to participate in, customary practices.[23]

- In Russia, reindeer herding is practised by 16 officially recognised indigenous nations and is the only agricultural activity of the circumpolar Arctic region. The programme "Development of reindeer husbandry in Yamal", implemented in the Yamalo-Nenets Autonomous District, aims to boost the potential of reindeer pastures, improve the quality of life of the indigenous peoples, increase productivity of customary sustainable use and expand markets for indigenous products.[24]

Celebration of Diversity day at the Woljeongsa temple, South Korea, October 2014. Courtesy Polina Shulbaeva

ix *The following governments from Latin America and the Caribbean have ratified ILO Convention 169 on Indigenous Peoples and Tribal Peoples: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru and Venezuela. Countries from other regions that have ratified ILO Convention 169 include Central African Republic, Denmark, Fiji, Nepal, Netherlands, Norway and Spain.*

x *A report by the Economic Commission for Latin America and the Caribbean (ECLAC), which was prepared for the WCIP, acknowledges that "*indigenous peoples are the most disadvantaged groups*" and that "*one of the major challenges facing the region in the search for equality is to make the rights of indigenous peoples a policy priority.*"*

Opportunities and recommended actions to enhance progress towards the target

To mainstream biodiversity values, a range of measures at all levels need to be pursued, including:

- Governments, in collaboration with IPLCs, need to establish inclusive and robust participatory mechanisms for sustainable development planning and decision-making at all levels.
- Governments, in collaboration with IPLCs, need to adjudicate legal recognition of lands, territories and resources of IPLCs and to respect free, prior and informed consent (FPIC) in relation to policies, programmes and projects affecting their lands, territories and resources, as well as their human rights and wellbeing.
- Policy-makers and development planners need to integrate biodiversity and cultural values in planning and decision-making, consistent with the CBD's ecosystems-based approach.

Indigenous leaders sign the Kari-Oca II Declaration in Rio de Janeiro
Courtesy Cordillera Peoples Alliance

Incentives reformed

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.

Key message:

Positive incentives targeted directly at IPLCs and respecting their traditional knowledge, their customary resource and ecosystem management practices, and their livelihoods, have high potential for securing multiple biodiversity values and contributing to climate change mitigation as well as community wellbeing. For sustainable and effective outcomes, incentives need to be designed and implemented in collaboration with IPLCs. Both financial and non-financial incentives should be considered, and benefits should flow directly to communities. In addition, a stronger focus is needed on eliminating perverse incentives, including those awarded to extractive industries, which can have disproportionate impacts on IPLCs, their lands and ecosystems.

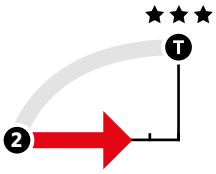
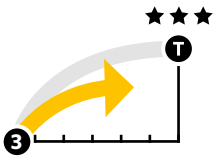
Why the target is important to IPLCs

GBO-4 reports a lack of progress in eliminating or phasing out incentives harmful to biodiversity.[5] This is important for IPLCs because harmful incentives, such as those awarded to extractive industries, can have catastrophic impacts not only on biodiversity but also on their lives and livelihoods. Because of their close inter-relationships with the environment, IPLCs can be particularly affected by governmental support for resource exploitation.[27-29] Phasing out incentives that cause harm should be a priority from both a biodiversity and a human rights perspective.

GBO-4 also concludes that insufficient progress has been made on the development and application of positive incentives.[5] A diversity of views exists amongst IPLCs on positive financial and non-financial incentives and in order to create fair and participatory positive incentive schemes, IPLCs should be consulted on what incentives, if any, would be most appropriate given their situation, customary rules and culture. For some communities, financial incentives can help to support their traditional lifestyles and enable them to remain connected to the land. However others see financial incentives as disruptive and encouraging the commodification of biodiversity. In contrast, most IPLCs have expressed strong support for fundamental non-monetary incentives such as land or access rights.

Positive incentive systems, such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) and Payments for Ecosystem Services (PES), can bring both challenges and possible benefits for IPLCs. The challenges include the risk that resources will become unavailable or inaccessible to IPLCs, as well the minimisation of the importance of non-economic values of biodiversity. On the other hand, PES can be beneficial if they provide opportunities for IPLCs to continue to live using their sustainable traditional practices.

Summary of progress towards the target

Target Elements (by 2020)	Status
Incentives, including subsidies, harmful to biodiversity, eliminated, phased out or reformed in order to minimize or avoid negative impacts	
Positive incentives for conservation and sustainable use of biodiversity developed and applied	

Contributions and experiences of IPLCs towards the target

The case studies in Boxes 3.1 and 3.2 illustrate some of the tensions and benefits that can exist in PES schemes. Box 3.1 relates a story from the Balngarra Clan in Australia, who have developed a Fire Abatement Project in collaboration with scientists. The income generated is making it possible for some families to return to the land. Box 3.2 highlights an initiative to pilot the development of financial incentives for forest protection with a focus on community actions. The aims were to secure community forest tenure and user rights, restore traditional knowledge and customary management of forests, and strengthen institutions and capacity. In this way, community-based models of reducing emissions from deforestation and forest degradation were developed, and acted as pilot learning sites to engage the government's national and sub-national REDD+ programmes.

Box 3.1 Story from the Northern Territory, Australia: *Dabboh*[xi] and smoke money: burning the bush for people and Country

Otto Bulmaniya Campion and Beau J. Austin[xii]

The Balngarra Clan is an indigenous Nawurrk[xiii] tribe from Arnhem Land in the Northern Territory of Australia. Our homeland covers around 250 km^2 of savanna, escarpment and wetlands. The Balngarra Clan's "ownership", "connection" or "belonging" to this land has never been broken. The Balngarra Clan uses many types of fire to look after people and Country.[xiv] Fire is used for hunting and gathering, cooking, keeping plants and animals healthy, and clearing paths for walking and is important for ceremonies.

In the cool part of the dry season, somewhere between April and August, in our language[xv] we call it *marluwurru*. When we see spear grass, *gardaykkah*[xvi] flowering, when we are touched by that wind feeling, cold weather is coming up – *gabekbek*. That means it is time to go and burn, to "smoke up" the Country. We never leave fuel load to build up because we know that the next season coming will be *warlirr* (hot weather) and more fuel of dry grass, leaves and branches will build up on the ground and we get unmanaged wildfires.

Our fire is like a treasure. When we do traditional fire management we always get rewarded; our Country gives us back animals, bush tucker[xvii], and we can collect spears from the jungle. Our Old People looked after it the proper way. Burning at the right time is not dangerous.

Then one time, these *Balanda*[xviii] scientists were watching *Bi*[xix] burning Country. They realised that our traditional fire management was not only good for biodiversity, but also reduced the greenhouse gases and carbon dioxide that get put into the atmosphere by unmanaged wildfires.[30–32] *Bi* started to make partnerships with fire scientists and worked together to measure all the trees and collect data from the monitoring sites. In the late 1990s we started the West Arnhem Land Fire Abatement (WALFA) project.[30,31] Today, we are negotiating agreements with all of the indigenous ranger groups in Arnhem Land to join the Arnhem Land Fire Abatement project (ALFA). This will cover an area of around 120,000 km^2, including hundreds of indigenous clan groups. Every year we bring all the rangers, scientists and knowledge holders together to plan for burning at the right time[xx]. ALFA has a board that watches over the project and we use a formula to split the income equally. However, boundaries do not worry us. We want to manage that country without lines. Because when you put lines, draw boundaries on a map, that is the *Balanda* way.

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xi *Fire that occurs in the countryside that has not been lit for any specific purpose. This is in contrast to* wurrk, *which is fire that has been lit to achieve something specific (e.g. using fire to hunt for kangaroos).*

xii *Otto Bulmaniya Campion is a member of the Balngarra Clan, Malnyangarnak (Northern Territory, Australia) and of the Arafura Swamp Rangers Aboriginal Corporation (ASRAC), Ramingining, and the Aboriginal Research Practitioners Network (ARPNet), Darwin, Northern Territory, Australia. Beau J. Austin is connected to the Research Institute for the Environment and Livelihoods, Charles Darwin University, Darwin, Northern Territory.*

xiii *Nawurrk tribes are experts in the use of many different types of fire to achieve particular outcomes on Country, especially for hunting animals.*

xiv *The English word Country is used to refer to Indigenous peoples' clan estates. In Rembarrnga, this is known as dawal.*

xv *The language spoken by the Balngarra Clan is Rembarrnga.*

xvi *Stringybark (*Eucalyptus tetradonta*).*

xvii *Bush tucker is an Australian term used to describe wild harvested foods.*

xviii Balanda *is the word used by indigenous people from the Arnhem Land region to refer to non-Indigenous people.*

xix *The word used by indigenous people who speak the Rembarrnga language to refer to themselves.*

xx *The income generated comes from a range of sources, including several market-based voluntary agreements with the private sector and the Australian Government's Emissions Reduction Fund.*

Box 3.1 continued...

As soon as the fire projects started to grow, all the rangers received training from "accredited trainers". They taught us how to *fight* fire. All the smoke money that we were creating was going back into rangers *fighting* fires. One time I was watching Traditional Owners using fire to do hunting and gathering on their Country. The rangers started to worry that this Traditional Owner fire might grow into a wildfire. So they got a helicopter, flew over and put it out. That is wrong. In Bi culture we never fight fire. That is not the way of Nawurrk tribes. We just make fire, not put him out. So this made me stop and think. Look back to that Country and to the Traditional Owners.

Bi did not work closely with scientists on developing the carbon accounting methodology. We only did field work with scientists. Just recording and measuring, and guiding scientists to different places. We did not get proper pay. All the science work we did out in the field, carrying all the equipment and tools with scientists, we only got CDEP[xxi] money. Scientists and politicians set up the carbon accounting methodology and gave us this rule saying we can only burn every year in May, June and July. 1st of August is the deadline to stop burning or we will get a penalty.[33]

Today, we are making some good money from fire work. We are making satellite ranger bases on each of the clan estates in the Arafura Swamp region in Arnhem Land. These satellite bases are not getting any funding from any government organisation. They are running on bushfire smoke money. Traditional Owners are being paid a salary and have equipment to support burning. This means that we can make sure that rangers are not acting like heroes by going and fighting fires, but that Traditional Owners are taking the lead in looking after their Country.

It is really important for Traditional Owners to have jobs on Country. Country is not a place for weekends, it is our home. The towns that the governments are trying to make us live in, "growth towns"[34] are making our people and our Country sick. They are overcrowded with lots of different clans, which creates social problems. It makes us worry. But the good news is that from smoke money some of our families are getting back to Country. Not only do carbon projects help us to stop global warming, if they include Traditional Owners properly, they can help us look after our health, our language, our ceremony, the biodiversity that lives with us on Country, and provide good jobs for our people.

Box 3.2 IPLCs making good use of REDD+ in Vietnam

Centre for Research and Development in the Upland Areas (CERDA) and Tebtebba

Can financial incentive systems be designed in a way that respects the rights, wishes and existing practices of IPLCs? This was the central question of a pilot project managed by the Tebtebba Foundation in Vietnam[xxii] in collaboration with the Centre of Research and Development in Upland Areas (CERDA),[xxiii] the Northern Vietnamese local authorities and grassroots organisations. The aim of the project was to provide legal standing for IPLCs in REDD+ and to integrate the principles of carbon sequestration and reductions in deforestation in a way that respects human rights, traditional knowledge, traditional monitoring systems, collective decision-making, and local social and environmental attitudes. Through the project, communities established cooperatives, which provided them with legal standing to use and manage forests that had previously been unallocated and consequently affected by illegal logging. A demarcation map of community forests was created by the communities and local forest experts developed tools for monitoring tree diversity and forest biomass through community-based monitoring.[35,36] Project funds were allocated for community projects linked to forest regeneration, conservation and sustainable use of biodiversity.

xxi CDEP stands for Community Development and Employment Programme, which was a former Australian Government welfare programme targeted specifically at employment and development for indigenous Australians.

xxii Funded by the Norwegian International Climate and Forests Initiative.

xxiii An independent research organisation and NGO accredited by the Vietnamese government.

Opportunities and recommended actions to enhance progress towards the target

- The use of non-monetary and monetary incentives should be guided by the context, needs and cultural perspectives of all parties interested in and affected by incentives. This requires greater international and national attention. Dialogue and collaboration with communities is essential.
- The negative social and cultural impacts, as well as the negative impacts on biodiversity, caused by incentives awarded to destructive industries, such as mining, logging and industrial fishing, must be acknowledged at all levels and greater efforts must be made to phase out perverse incentives.
- Governments and relevant actors should encourage the granting/recognition of land tenure and access rights to IPLCs as a form of positive non-monetary incentive.

Key resources

Fitzsimons, J., Russell-Smith, J., James, G., Vigilante, T., Lipsett-Moore, G., Morrison, J., & Looker, M. (2012). Insights into the biodiversity and social benchmarking components of the Northern Australian fire management and carbon abatement programmes. *Ecological Management and Restoration* 13(1), 51-57.

Tebtebba Foundation (2014). Pilot models of REDD+ implementation at grassroots level in Vietnam. NORAD website (last viewed on 5.10.16). https://www.norad.no/en/front/funding/climate-and-forest-initiative-support-scheme/grants-2013-2015/achievements/pilot-models-of-redd-implementation-at-grassroots-level-in-vietnam/

Anangu men and women looking after Country in the Watarru and Walalkara Indigenous Protected Areas, Australia. Courtesy Department of the Environment and Water Resources, Australia

TARGET 4

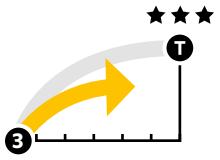
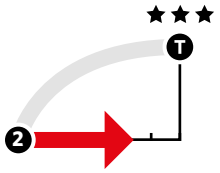
Sustainable production and consumption

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.

Key message:

IPLCs have much to contribute to this goal, offering many examples of how diverse local economies built on traditional and local knowledge, institutions, practices, cultures and values can achieve sustainable development. Through their community land use plans and territorial management plans (or "Life Plans"), many IPLCs work to ensure that the use of natural resources within their lands and territories is kept within safe ecological limits. Indigenous peoples' and community-based organisations are also playing an important role in the establishment, implementation and monitoring of compliance with sustainability standards in commodity supply chains.

Summary of progress towards the target

Target Elements (by 2020)	Status
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.	

Why this target is important for IPLCs

GBO-4 indicates that progress on this target has been insufficient in relation to plans for sustainable consumption and production in terms of limiting impacts of natural resource use.[5] This is of great concern to IPLCs: present unsustainable consumption and production patterns underlie direct pressures not only on biodiversity but also on IPLCs themselves. Many communities suffer from large-scale land acquisition and "land-grabbing" in this context, given their lack of tenurial security and unequal power relations.[37] When unsustainable extractive activities expand into or near to community lands they can threaten the ecological integrity of those lands, as well as the communities' food security, livelihoods, and even the survival of indigenous groups living in voluntary isolation.[38]

While voluntary certification standards for sustainable production of certain commodities (such as palm oil, rubber, soy and timber) have been adopted, available evidence suggests that current efforts are unlikely to suffice to keep ecosystems within safe ecological limits by 2020.[5] For example a recent meeting of the national human rights institutions of South-east Asia and concerned civil society representatives concluded that growing concern about agribusiness land grabs is not being matched with mandatory controls and enforceable standards. It was noted that large-scale land allocations for timber plantations and agribusiness continued to be given priority over communities' rights, livelihoods and local food security, further exacerbating the growing inequality in the region.[39]

In addition, demand-side measures which do not specifically integrate human rights concerns can in some circumstances marginalise communities. For example, none of the European Union's (EU) agreements with developing countries to prevent the import into the EU of illegally logged timber under the EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan incorporate human rights laws systematically. The result has been that, in some countries, community rights have not been taken into account in the agreement, and the "legal" timber proposed to be licensed under the agreement is produced in violation of community rights.[40]

Contributions and experiences of IPLCs towards the target

IPLCs around the world are working to promote and sustain low-impact forms of consumption and production, both at the international level and locally. Internationally, IPLCs have played and continue to play an important role in campaigns to reform unsustainable supply chains. Locally, many IPLCs have developed low-impact land use plans for their own territories, rooted in deep-seated belief systems concerning the spiritual links between land, life and nature. The following sections give further details on each of these kinds of contribution.

Community contributions to actions and pledges to improve the unsustainable commodity industry

Demand-side campaigns and consumer-driven boycotts have increased the pressure on producers to reform unsustainable supply chains, and by 2015, seven% of companies with the greatest influence over tropical deforestation had made full, cross-commodity commitments on deforestation.[41] For example, multinational organisations including Nestlé and Unilever have changed their palm oil sourcing policies to protect rainforests and peatlands.[42] Communities can play a central role in bringing about such pledges (see also Box 5.1 in Target 5).

In May 2016, for example a delegation of indigenous and community leaders gave testimonies on the impacts of the palm oil industry to the European Parliament and to relevant EU officials, emphasising the urgent need for strong binding regulations of supply chains.[43] A representative stated:

> *It is not enough to create voluntary certification schemes while we continue to suffer land grabs and the ongoing violation of human rights.*[xxiv]

Communities have also been working together with civil society allies to use grievance procedures related to existing sustainability standards in order to identify and challenge company violations. An example is the certification system for sustainable palm oil that serves to assure customers that its production has not caused harm to the environment or society. However, there are IPLCs who are reporting that these standards are not fully implemented and who experience unlawful land acquisition, negative impacts and escalating land conflicts over palm oil.[44]

Promotion and use of sustainable models of consumption and production and community land use plans

For some IPLCs, sustainable consumption and production is rooted in respect of the rights of Mother Earth. The **Universal Declaration on the Rights of Mother Earth**, adopted at the World People's Conference on Climate Change in Cochabamba in 2010, states:

> *We are all part of Mother Earth and Mother Earth has inherent rights such as the right to life, the right to regenerate its bio-capacity and continue its vital cycles, maintaining its integrity as a self-regulating and interrelated being.* [45]

The **Shillong Declaration**, an outcome of the Indigenous Terra Madre event in Shillong, Meghalaya, North-east India in 2015 (see also Box 1.1 under Target 1), has joined with a larger movement that aims to transform dominant production and consumption models and offer alternative or complementary solutions. It states:

> *Our initiatives on food sovereignty, tenurial security and knowledge safeguarding are part of a larger movement to fundamentally transform the nature of economic and political systems away from those dominated by the state or private corporations, and towards community-centred, ecologically sustainable, socially just, and economically equitable alternative models of human and planetary wellbeing.*[17]

xxiv Franky Samperante, founder-director of the indigenous peoples' organisation Pusaka.

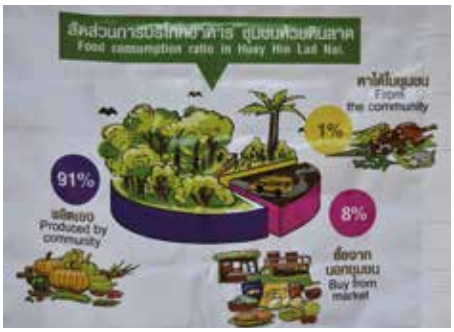
Some other examples of IPLC initiatives and approaches for sustainable consumption and production are as follows:

- In Latin America, the indigenous cosmovision of "living well" (*Buen vivir, Sumaq Kasway*) promotes the healthy flourishing of all in harmony with nature and calls for economic "de-growth" and increased environmental awareness.[46]

- For the Māori in Aotearoa/New Zealand, the reverence for creation as a whole, the kinship of all things and responsibility for all living things and natural resources are key principles driving the emergence of an alternative model of development and wellbeing.[47]

- In Canada, the Dehcho First Nations' Land Use Planning Committee oversees the development of a comprehensive land use plan, guided by respect for the land as understood by the Dehcho elders, and by the principles of sustainable development. Once approved, the Land Use Plan will provide legally binding directions to decision-makers and regulatory agencies.[48]

- In Colombia, the Misak people have created a "*Plan de Vida*" (Plan of Life) to protect all life in their territory, based on oral tradition and a deep spiritual link to Mother Nature (see box 4.1).



More than 90% of food consumed in Hin Lad Nai village (Thailand) is produced through organic agroforestry within the community. Courtesy Nutdanai Trakansuphakon

© Misak

© Misak

Box 4.1 Children of the water: *Plan de Vida* (Life Plan)[49] of the Misak people, Colombia

Liliana Pechene, coordinator Plan de Salvaguarda of the Misak people, and Jeremias Tunubala, ex-governor of the Misak people (photos by the Misak)

We, the Misak, are located in the South-west of the Republic of Colombia, and have a population of approximately 25,000 inhabitants, with ancestral and autonomous authorities managing and regulating the territory.

We created the "*Plan de Vida*" (Plan of Life), which is a political strategy to ensure the existence of community life and spirituality linked to Mother Nature and countervailing the country's own laws and regulations. The "*Plan de Vida*" is Mother Earth's path to a comprehensive life with the mission of preserving moors, water resources and wetlands, all of which are alive and enjoy their own natural rights with no economic attributions. But we humans cannot see them as living beings. The Plan of Life is ancient and was passed on through oral tradition until it was systemised in 1992.

We, the Misak People, based on our *Plan de Vida*, protect life in our territory. We safeguard the moors, which are sacred places, and plant trees to safeguard water sources, manage watersheds and riverbanks and avoid their contamination. Similarly, we restrict research activity and the collection of resources within our territories.

We, the Misak, are a people consisting physically of individuals, but we have a collective mind and conscience. This collectiveness gives us the necessary measures to protect Mother Earth and its biological diversity. We, the Misak, have lived with Mother Nature wisely without looking at economic, commercial or industrial benefits, with the conviction that exercising the right to live is not only a human right but also the fundamental right of our Mother Earth. Only then can we live well. We are not against what the Western world call "*development*". But we are against dispossession, a model of extractive development, mining, or any kind of human action that threatens the life of our Mother. We support a *minga*[xxv] for the life of our Mother; we want to work as brothers with all the peoples who work to protect environmental rights. We want to unify our physical and spiritual strengths to protect a sustainable life. This is the only way to stop the illness of the economic and political models that fail to ensure the life of the planet and humanity.

Opportunities and recommended actions to enhance progress towards the target

- Governments and relevant actors should enhance communication about and mainstreaming of IPLCs' low-impact development models in their programmes, guidelines and partnerships.
- Governments and relevant actors should provide greater support for the effective participation of IPLCs in developing plans for sustainable production and consumption, and step up engagement and dialogues with IPLCs to better understand their development aspirations and frameworks.
- Governments, private sector and other relevant stakeholders should create partnerships with IPLCs to implement and monitor compliance with economic, environmental, social, and cultural sustainability standards.
- IPLCs should continue developing and implementing community life plans and holistic territorial management and land use plans, and share and promote their models and visions for sustainable, diverse local economies.

Key resources

Toolkit on developing Life Plans: http://www.lifemosaic.net/eng/tol/life-plan/

COMPAS (2007). *Learning Endogenous Development. Building on Bio-cultural Diversity:* http://www.bibalex.org/Search4Dev/files/416867/362431.pdf

xxv "Minga" is a traditional Quechua term for collaborative work that is in common use throughout the Andean countries [212]

TARGET 5

Habitat loss halved or reduced

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.

Key message:

Shrinking forests and reduced access to resources have led to severe hardship among IPLCs, many of whom obtain their daily needs from the world's forests. IPLCs are contributing to progress on this target through responsible management and conservation of their own forests, which recent studies show can be more effective in reducing deforestation than conventional protected areas, and also through activism at all levels to combat habitat loss and degradation caused by others. Respecting customary land and forest tenures and human rights are fundamental to enable upscaling of community conservation of habitats, complemented by regulatory and voluntary measures.

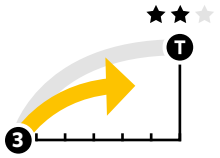
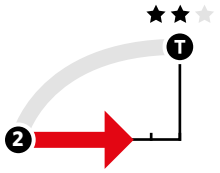
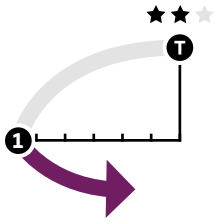
Why this target is important for IPLCs

The GBO-4 indicates that whilst there has been some progress in reducing the rate of loss of forests, it has been insufficient. There has been no progress on the other elements of this target.[5]

This lack of progress is of profound concern to IPLCs. There are an estimated 1.5 billion forest-dependent people that obtain direct and indirect livelihood and environmental benefits from the world's forests[38], 370 million of whom are estimated to be indigenous and tribal peoples[50]. Habitat loss and degradation have already affected large numbers of forest people in different parts of the world.[38]

Many of the world's remaining forests and other biodiverse habitats are on IPLCs' lands and territories, and this means that IPLCs have a potentially substantial part to play in boosting progress towards the target.[51] Various mapping and research projects have shown an overlap between indigenous presence and areas of exceptionally high biodiversity.[51,52] As languages, cultures and ecosystems are interdependent, these areas are also home to much of the world's cultural and linguistic diversity (see also Target 18).[53]

Summary of progress towards the target

Target Elements (by 2020)	Status
The rate of loss of forests is at least halved and where feasible brought close to zero	
The loss of all habitats is at least halved and where feasible brought close to zero	
Degradation and fragmentation are significantly reduced	

IPLCs' systems of territorial management (including community forest management) have been essential in conserving forests and other habitats over long periods of time, while also providing sustainable livelihoods.[38] However, in spite of this, communities have secure land tenure over less than one-fifth of their traditional lands and in recent years there has been an increase in the expropriation of customarily owned forests and other habitats.[1] The combination of weak governmental regulation and limited recognition of indigenous peoples' and local communities' land and forest tenure has created a situation of land and resource conflicts and human rights violations against communities.[1] For example in 2015, 45% of human rights defenders' assassinations were linked to the defence of environmental, land and indigenous peoples' rights.[54]

More positively, as part of the development of "zero deforestation" pledges, an increasing proportion of producers of commodities such as palm oil have adopted land use planning methods that involve setting aside areas identified as "High Carbon Stock" (HCS) forests in concession areas. However, a recent review of the HCS approach and pilot studies in Indonesia and Cameroon have confirmed that many HCS forests are on the territories and lands of IPLCs[55] (for an example, see Box 5.2). If HCS zoning is imposed on community lands without IPLCs' free, prior and informed consent (FPIC) this can create "green land grabs" and can lead to an escalation of land conflicts. Voluntary mechanisms need to respect IPLCs' rights and accommodate their livelihoods in order to enable continuing conservation by communities of their forests.[55]

It is estimated that as much as 90% of logging in DRC is illegal. A large proportion of logging operations overlap community lands and land conflict between loggers and forest communities are common. The traditional livelihood strategies of indigenous and local communities show a capacity to coexist with forests sustainably, and these communities need support to protect their lands and sustain their livelihoods. Courtesy Patrick Kipalu, FPP

Contributions and experiences of IPLCs towards the target

IPLCs are contributing to progress on this target both through responsible management and conservation of their own forests on their lands (see also Targets 7 and 11), and also through activism at all levels to combat habitat loss and degradation caused by others. For example:

- Analysis of annual deforestation rates across 73 sites in the tropics found that deforestation is significantly lower in community-managed forests than in protected areas.[56]
- A study of forest loss by the World Bank Independent Evaluation Group comes to similar conclusions about the effectiveness of community-managed forests, in particular forest areas managed and controlled by indigenous peoples.[57]
- A recent study by the World Resources Institute found that deforestation rates in the Bolivian, Brazilian and Colombian Amazon were significantly lower between 2000 and 2012 within tenure-secure indigenous lands than on other lands.[58] (See Figure 5.1)
- With the support of civil society, the indigenous Amazonian Kayapo in Brazil have successfully conserved 105,000 km^2 of tropical forests in a frontier zone characterised by heavy deforestation, through decades of fighting encroachment by illegal gold miners, mahogany loggers and ranchers (see Figure 5.2). They also led an environmental movement to pressure the World Bank to stop loans for the construction of a mega-dam project on the Rio Xingu, which would have flooded and destroyed parts of their territory. This is an example of how building alliances with indigenous peoples and investing in the capacity building and empowerment of the rightful indigenous owners of the forest can result in large-scale conservation of the world's richest ecosystems.[60]

Figure 5.1

Community land in Sinoe County, Liberia, including grave sites and sacred forest areas, have been cleared and planted without the communities' free, prior and informed consent. Courtesy Justin Kenrick, FPP

Activism at local, national and international levels to stop habitat loss and degradation caused by large-scale commodity production

- On the island of Palawan in the Philippines, the Coalition Against Land Grabbing (CALG), a network of indigenous peoples and farmers, successfully mobilised 4,200 affected people to call for a province-wide moratorium on palm oil expansion. This appeal was backed by the Philippines Commission on Human Rights, triggering a Commission-led investigation into legally binding standards for agribusiness in the Philippines.[61]
- Box 5.1 gives another example of a local action against palm oil expansion, from West Kalimantan in Indonesia.

Across the world, IPLCs have linked up efforts such as these to conserve the world's habitats. For example, a global coalition of indigenous peoples from the Amazon, Central America, the Congo Basin and Indonesia have pledged to protect 400 million hectares (ha) of forests in these regions in support of the New York Declaration on Forests.[63] The Palangka Raya Declaration on Deforestation and Rights of Forest Peoples is another example of how IPLCs' organisations across the globe are working together to curb deforestation and provide concrete policy recommendations to address the underlying drivers of habitat loss and degradation[64] (see Box 5.2).

Figure 5.2: This Google Earth satellite image from May 2016 shows how deforestation (light green) stops at the boundaries of the Kayapo's indigenous territory (black line), an area bigger than Scotland and Wales combined, located in the South-eastern Amazon of Brazil. The forested area south of the Kayapo territory (dark green) is the Xingu Indigenous Park, an indigenous territory of 2.8 million ha, which is home to 14 ethnic indigenous groups.[60]

Box 5.1 Kapuas Hulu, West Kalimantan, Indonesia: indigenous Dayak try to save forest, river and lake habitats under threat from palm oil expansion[56,62]

Community members from Kapuas Hulu and Dico Luckyharto, Forest Peoples Programme

Protecting forests and food resources from degradation due to land use change is an important issue in Kapuas Hulu district, West Kalimantan. Although it is home to two big national parks (Danau Sentarum and Betung Kerihun National Parks), at least five oil palm plantation companies are active in the area. Due to oil palm expansion, the area has lost several significant ecosystems such as forest, river or lake ecosystems. These ecosystems are customarily managed by indigenous peoples (Dayak) or Malay descendants that have lived in the area for centuries.

Seberuang sub-district has the biggest intact forest in the area (some of it protected) and is therefore key to preventing further degradation from oil palm plantations, which are growing significantly in this district.

Alongside three neighbouring villages, Bati village has rejected plans for oil palm expansion in the area. The villagers heard about an oil palm company seeking a survey permit in their area. Concerned that this would threaten forests vital to them, the communities found themselves in a race against time to prevent the oil palm expansion. In March 2015, letters were sent to the District Head (Bupati) of Kapuas Hulu rejecting the proposed expansion plan. As a young man from Bati village explained:

> *We have seen the impacts of oil palm in neighbouring areas that are devastating. We are concerned that our culture will disappear with the arrival of oil palm plantations.*

Community member providing evidence on an agribusiness land grab in Palawan during the fact-finding mission of the 5th Regional Conference on Human Rights and Agribusiness in South-east Asia. Courtesy Viola Belohrad, FPP

Dayak communities in other parts of Kapuas Hulu have already been affected by oil palm expansion. Since the start of the operation of Golden Agri Resources' (GAR) subsidiary PT KPC in 2007, unclear processes of land acquisition and non-compliance with social and environmental standards have caused protests and demonstrations and resulted in major rifts in almost all the affected communities. Following an international campaign, GAR developed a Forest Conservation Policy related to the zoning of High Carbon Stocks (HCS) forests as a tool to achieve "zero deforestation" in palm oil production. The site of PT KPC's operations was selected as a pilot area.

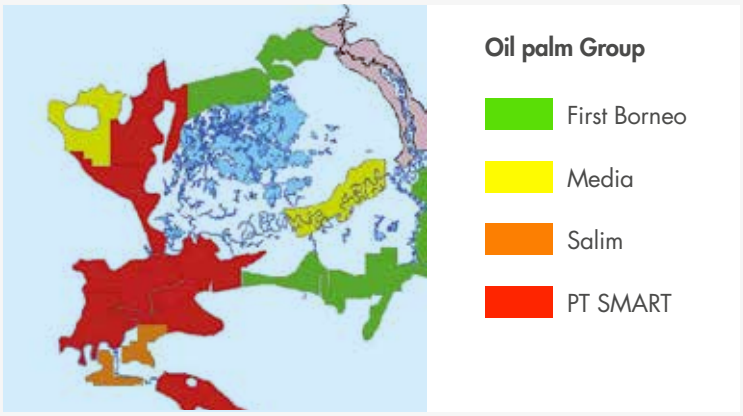


Figure 5.3: Palm oil concessions are issued in a ring around Danau Sentarum National Park[13]

Box 5.1 Continued...

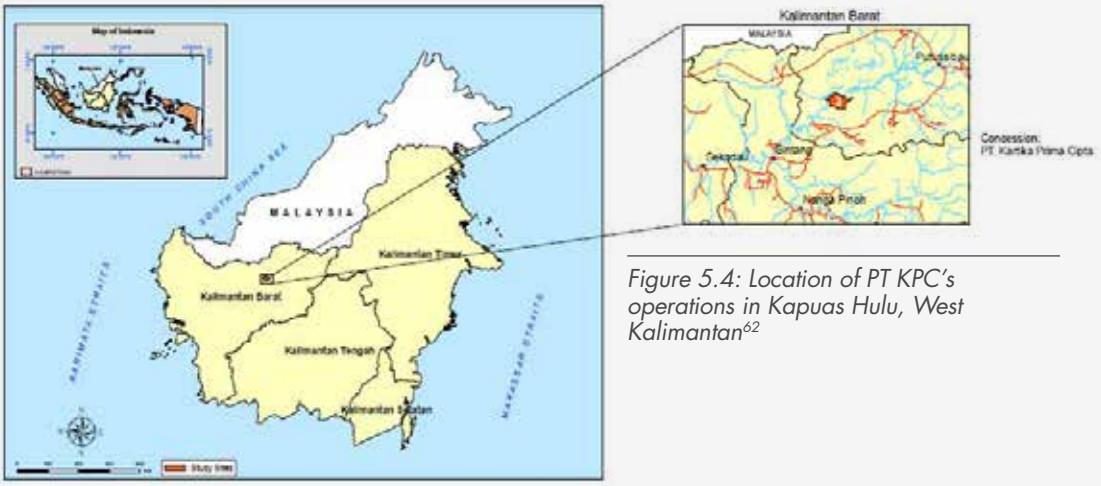


Figure 5.4: Location of PT KPC's operations in Kapuas Hulu, West Kalimantan[62]

Several of the affected communities undertook participatory mapping exercises and action research to develop community land use plans. This allowed them to identify how much land each family will need to sustain their ways of life, and to take an informed decision on whether to lease or sell their land for oil palm development. As the head of custom of the hamlet of Kenabak Hulu said:

> *We need to explain where our customary lands and forests are, which are ours because of certain conditions and events of the past. For example sacred sites and untouchable areas are guarded by us and we make the decision to look after such areas collectively and make them a sacred site. When we do this we also invite the neighbouring villages to witness the agreement and make the area a customary forest. This is because it is not just our own beliefs [that matter] but these need to be transferred with our traditional knowledge and culture to the coming generations. This is how we came up with an agreement about which areas should not be used commercially or cultivated*[62].

Several villages rejected the proposed palm oil expansion plans (including Kenabak Hulu) and the lands of these communities were excised from the concession area. Because of this, as much as 90% of the HCS forests identified in GAR's provisional concession ended up outside the company's permit and jurisdiction. The communities emphasised that it has been they who have maintained these forests up to now and who value them and can look after them in the future. Nevertheless, their customary rights to these lands are still not recognised by district and national governments.

Box 5.2 The Palangka Raya Declaration[64]

"Global efforts to curb deforestation are failing as forests are cleared... for agribusiness, timber and other land development schemes. We, forest peoples, are being pushed to the limits of our endurance just to survive. Checking deforestation requires respect for our basic rights, which are the rights of all peoples and all human beings. Deforestation is unleashed when our rights are not protected and our lands and forests are taken over by industrial interests without our consent. The evidence is compelling that when our peoples' rights are secured then deforestation can be halted and even reversed. We call for a change in policy to put rights and justice at the centre of deforestation efforts. The world cannot afford further delays… We will work in solidarity together to form a global grassroots accountability network to independently monitor, document, challenge and denounce forest destruction and associated violations of forest peoples' rights[xxvi]*".*

Opportunities and recommended actions to enhance progress towards the target

- Greater support for community-based monitoring of forests and other natural habitats is needed from governments and relevant actors.[65]
- Governments and relevant actors should evaluate and improve national mechanisms and institutions for land use planning and forest governance, with the aim of supporting IPLCs' initiatives to conserve habitats.
- Governments and relevant actors should support communities' initiatives for moratoria on oil palm, extractive industries and logging, to stop land-grabbing and unsustainable land conversion.
- Governments and relevant actors should protect community activists, environmental and human rights defenders.
- Private sector actors should ensure that zero deforestation commitments safeguard communities' livelihoods and secure communities' rights to their lands and territories.

Key resources

The Palangka Raya Declaration on Deforestation and the Rights of Forest Peoples (2014).
http://www.forestpeoples.org/sites/fpp/files/news/2014/03/declaration_english.pdf

Porter-Bolland, L. et al. (2012). Community managed forests and forest protected areas:
An assessment of their conservation effectiveness across the tropics. *Forest Ecology and Management* 268: 6-17.
http://www.cifor.org/publications/pdf_files/articles/AGuariguata1101.pdf

FAO (2012). Voluntary Guidelines on the Responsible Governance of Tenure at a glance.
http://www.fao.org/docrep/016/i3016e/i3016e.pdf

xxvi The Palangka Raya Declaration on Deforestation and the Rights of Forest Peoples. 2014. page 5.[64]

Members of the Wet'suwet'en nation, hereditary chiefs, elected chiefs, representatives of local governments and residents of the valley gather in Moricetown, Canada, to celebrate the return of the salmon in the river and to express their opposition to the proposed Enbridge tar sands/bitumen pipelines. Photo by Leah Macknak / Courtesy Office of the Wet'suwet'en

TARGET

Sustainable management of aquatic living resources

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.

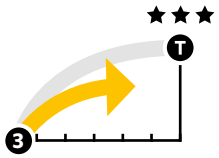
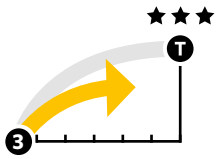
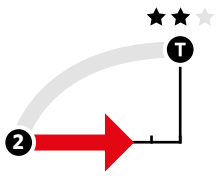
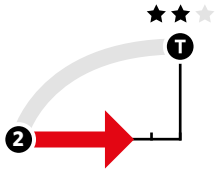
Key message:

The continuation of unsustainable fishing practices threatens not only fish stocks, threatened species and vulnerable ecosystems but also the survival of the many IPLCs around the world who rely on fish and other aquatic resources for their livelihoods. Many fisher people have customary sustainable fishery systems to ensure that resources can continue to be used by future generations, and these traditional fishing practices have the potential to contribute to national and international marine biodiversity policies.

Why this target is important for IPLCs

GBO-4 reported that, while there has been some progress on the management and sustainable harvesting of aquatic species, the application of ecosystem-based approaches, and the creation of recovery plans for depleted species, there has been little to no progress on reducing the adverse effect of fisheries or on reducing overfishing (see dashboard).[5]

Summary of progress towards the target

Target Elements (by 2020)	Status
All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches	
Recovery plans and measures are in place for all depleted species	
Fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems	
The impacts of fisheries on stocks, species and ecosystems are within safe ecological limits, i.e. overfishing avoided	

IPLCs are among the people who are most reliant on marine ecosystems, including aquatic animals and plants, for food and cultural purposes, and are consequently disproportionately affected by unsustainable fishing practices. Women are particularly negatively impacted by the effects of overfishing. According to the International Collective in Support of Fishworkers (ICSF) women constitute nearly 90% of the post-harvest labour sector'[66,67], and are generally those responsible for the food security of their families. Due to women's unacknowledged role in the fishing sector, they tend to be overlooked when assistance is offered to community fisher people impacted by the effects of overfishing.[68]

Insecurity of tenure rights further increases the vulnerability of small-scale fisher workers. As pointed out by the ICSF, small-scale fisher workers have consistently demanded secure rights to access, use, manage and benefit from resources in the sea, intertidal zones and inland waters. However, in many fisheries these rights are not clearly established or recognised. Securing tenure rights to aquatic ecosystems customarily owned and used by IPLCs is therefore an important step to enable IPLCs to upscale their efforts to achieve Target 6.

Contributions and experiences of IPLCs towards the target

Many IPLCs utilise complex traditional marine management systems that limit harvest levels and impacts. They offer useful lessons for more sustainable, ecosystem-focused fishing practices at wider scales. Therefore encouraging the continuation and transmission of these often threatened traditional practices is important for the achievement of this target. This section gives some examples (see also Target 10).

Traditional fishing practices can increase the sustainability of the management and harvesting of aquatic species

The *haenyeo*[xxvii] are female divers from a local community on the South Korean Island of Jeju who have been harvesting seaweed and shellfish sustainably since the 17th century. In addition to providing employment and economic opportunities for women on the island, their traditional methods of collection represent a form of low-impact, sustainable marine harvesting. Typically, *haenyeo* work in spring and winter, as they observe seasonal prohibitions to preserve marine stocks.[69] The divers also "clean the sea" by collecting rubbish one day a month and help to maintain the biodiversity of the marine life through re-seeding programmes and exercising controls on the quantity of marine products harvested. These methods benefit both the community and the ecosystems they depend upon.[70] Respect for nature is an intrinsic part of the unique shamanistic religion[xxviii] practised on Jeju Island and feeds into the interactions between the *haenyeo* and the sea they harvest.

Enhancing the conservation of aquatic ecosystems through community-based marine sanctuaries and protected areas

In the Philippines, community-based marine sanctuaries and Marine Protected Areas (MPAs) control fish catch and harvest and promote traditional fishing practices, in order to ensure long-term marine health and food security. However, the experiences of the small community-based marine sanctuaries on Balicasag and Pamilacan Islands demonstrate that it is not realistic for scattered, small no-take areas to try to maintain fish abundance and diversity on surrounding reefs when intensive fishing is occurring immediately adjacent to them.[71] This highlights the limitations of small and isolated MPAs[72] and emphasises the importance of nesting individual MPAs within broader management regimes, with an ultimate focus on national policies supporting overall reductions in fishing quotas and increased networking between MPAs.

Examples of national policy decisions supporting the rights of indigenous fishers to sustainably manage aquatic resources include the recent affirmation of commercial fishing rights to Torres Strait Islanders[73], and increased support for and recognition of the *satoumi* approach in Japan. *Satoumi*, a concept encompassing ocean stewardship and traditional local fisheries management and coastal resource use, has been utilised by small communities in Japan over hundreds of years. In addition to mechanisms for the sustainable use of marine and coastal resources, *satoumi* also includes mechanisms for preserving aquatic ecosystems; in fact it is thought that 30% of the MPAs in Japan are community-based self-imposed no-take zones. The Japanese Government supports *satoumi* initiatives by awarding exclusive harvest rights to local fishers over specific areas. There is also increasing recognition of the importance of these community initiatives for meeting biodiversity targets, mainstreaming and promoting ecosystem approaches to aquatic resource management.[74,75]

xxvii Meaning 'sea women' in the dialect of Jeju.

*xxviii Hilty and Hong (2013, page 20) state that "*One of the features that renders Jeju shamanism unique is the familial, almost casual attitude of devotees toward their gods. Most deities in the extensive pantheon of this 'Island of 18,000 Gods' were either once human, elevated to deity after death, or are otherwise perceived as ancestors and as members of the village in which a shrine is located and rituals are based.*"*[213]

Box 6.1 History of the Ngati Hine pilot program for the monitoring, recovery, and protection of eels

Tui Shortland, Coordinator, Pacific Indigenous and Local Knowledge Centre of Distinction and Nga Tirairaka o Ngati Hine Special Projects

Ngati Hine is a fishing nation in Aotearoa/New Zealand which cultivates a day-to-day relationship with eels. We maintain a high level of traditional knowledge and customary use, including on how to transfer and hold eels in boxes for up to 12 months. There is much concern over elvers (baby eels, *tangariki* in Maori) due tō the man-made and natural obstructions within our catchments. Local environmental guardians (*kaitiaki*)[xxix] have historically helped transfer the elvers above waterfalls and continue this practice today. This is embodied in the local story of a supernatural being *taniwha*[xxx], Rangiriri, who saw young children using a *kete* (tightly woven flax basket) to help elvers up the waterfall at Otiria more than 400 years ago.

In the 1980s a study was carried out on Ngati Hine eel harvesting that found that customary harvest practices producing approximately 30,000 kg of food were sustainable over a seven year period. Over the past ten years, Ngati Hine, alongside other customary and commercial fishers, have expressed concerns over declining eel populations. In 2011, we completed an eel population survey with the support of the National Institute of Water and Atmospheric Research, peer reviewed by the Ministry of Fisheries. The report confirmed the following: long fin female numbers are low in the upper catchments; there are several eel passage obstructions; significant habitats are degraded; there are lakes with the potential for stocking where eels can mature within four years, and there is potential to establish a nationally significant reserve area on the lower Taumarere River. A pilot project was subsequently designed to address these issues. The project vision was to enhance the relationship of local people with the eel population within Ngati Hine catchments as a pilot strategy that can be implemented across the North Island. The project is called "*Kete Tangariki*" and its main objectives are to:

- Improve eel populations for customary and commercial interests;
- Improve habitat appropriate for eels;
- Support local, established and new, customary and commercial fishermen;
- Advocate for laws and policies to improve eel management, engaging the local and central government, industry and the public.

Snapshot of outcomes and successes from the project are as follows:

- The ideal eel habitat and methods of improvement, such as riparian planting (a traditional method of water management) were discussed. Underground wetlands were identified as important unique habitats which Ngati Hine must maintain.
- Impacts of farming and pine forestry were identified as having harmful effects on elvers and eel habitats. Following these discussions, priority sites for enhancing this work were identified.

The pilot project brought together customary and commercial fishers from around the country who built stronger relationships with each other through improved respect and understanding. There is a strong desire to continue this journey of assessing the on-going health and management of eels.

Ngati Hine provided information to the international panel reviewing the state of eels, which assessed its monitoring information. Since the review, the Ministry for Primary Industries has contracted Ngati Hine to carry out a national inventory of indigenous communities' monitoring of eel stocks and has discussed whether we would be interested in adapting a common methodology so that we can contribute to national reports on the status of eels. The results and any future work on this inventory will ultimately influence regulations surrounding sustainable fishing in Aotearoa.

xxix Kaitiaki *means environmental guardian.*

xxx Taniwha *means supernatural creature.*

Box 6.1 Continued...

Young Ngati Hine fishermen being shown how to set up ropes to assist elver recruitment (photo by Doug Jones).

Elvers are transported and transferred upstream (photo by Doug Jones).

The long fin management research involved a "customary catch approach" with fishers who continue to fish during the eels' migration run. In Ngati Hine, whanau *(means community or extended familiy) use traditional ways of catching the eel migrators, such as eel weirs (left photo by Doug Jones; right photo by Cilla Brown).*

Ngati Hine actively monitored their waterways during rainfall periods and kept records of the eels caught (photo by Cilla Brown).

Opportunities and recommended actions to enhance progress towards the target

- Governments to increase respect and recognition of customary tenure and rights to aquatic resources for IPLC fisher folk.
- Governments and NGOS to strengthen and learn from traditional sustainable fishing practices to increase the effectiveness of the wider management of aquatic ecosystems.
- Governments and NGOs to provide institutional and funding support to upscale community-based marine sanctuaries and marine protected areas.
- Governments and relevant actors to give IPLCs a greater stake and role in the management of fisheries and coastal resources, which will also require outside linkages and support at national, regional and international levels.

Key resources

The International Collective in Support of Fishworkers (ICSF) http://www.icsf.net/index.php

Small Scale Fisheries Guidelines. http://igssf.icsf.net/

Seaweed farming represents a sustainable use of marine resources which also enhances local communities' livelihoods in Sabah, Malaysia. Courtesy Maurizio Farhan Ferrari, FPP

TARGET

Sustainable agriculture, aquaculture and forestry

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

Key message:

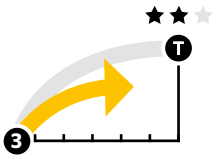
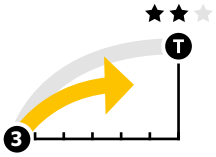
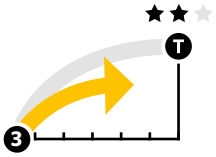
IPLCs' customary sustainable use practices and management systems, including community-based innovations, are increasingly recognised as effective ecosystem-based conservation approaches and have a very valuable role to play in achieving this target. The translation of the CBD's Plan of Action on Customary Sustainable Use of Biological Diversity[xxxi] into national and local plans and targets, and the implementation of these, provide a framework for increased recognition and support for such approaches.

Why this target is important for IPLCs

GBO-4 indicates that progress on this target has been insufficient to reach the target on time. This is of great concern to IPLCs, large numbers of whom are reliant on the continued availability of local natural resources for their daily needs.

GBO-4 also recognises that support for customary sustainable use, including through delegation of governance and responsibility for land management to IPLCs, is an effective measure that can contribute to attainment of the target. This is consistent with the priorities of communities, who are making valuable contributions to sustainable use but are facing difficulties in enforcing customary rules and countering external pressures due to lack of formal authority and decision-making power.

Summary of progress towards the target

Target Elements (by 2020)	Status
Areas under agriculture are managed sustainably, ensuring conservation of biodiversity.	
Areas under aquaculture are managed sustainably, ensuring conservation of biodiversity.	
Areas under forestry are managed sustainably, ensuring conservation of biodiversity.	

xxxi The objective of the Plan, which was endorsed by the Conference of the Parties to the CBD in 2014 (Decision XII/12), is to promote a just implementation of Article 10(c) ("Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements") and to ensure the full and effective participation of IPLCs.[124]

Contributions and experiences of IPLCs towards the target

Customary sustainable management practices of IPLCs related to biodiversity can often offer lessons of wider applicability, including for Aichi Target 7.[6] This section includes information on community forest management (see also Targets 5 and 11), shifting cultivation and agroforestry, traditional fire management, and traditional agricultural systems. For examples on traditional management of marine resources see Target 6.

In relation to the conservation of forest areas, growing and diverse sources of evidence highlight the positive contributions from community based-forest management:

- **CIFOR** reports that community forestry is highly effective and that "*the worlds' best-kept forest and ecosystems tend to be in indigenous peoples' territories.*" Analysis of 73 case studies in the tropics found that annual deforestation rates are significantly lower in community-managed forests than in strict protected forests. The findings also underscore that greater rule-making autonomy at the local level is associated with better forest management and livelihood benefits.[56]

- A study on forest loss by the World Bank Independent Evaluation Group comes to similar conclusions about the effectiveness of community-managed forests, in particular forest areas managed and controlled by indigenous peoples.[57]

Shifting cultivation and agroforestry

Many IPLCs across South and South-east Asia depend directly on shifting cultivation for their livelihoods and food security, but this practice continues to be one of the most misunderstood and controversial forms of land use. What has been overstressed is the destructive "slash and burn" component, whilst in fact overall, traditional systems of rotating cultivation, with fallow periods, can be good for biodiversity, as well as for the food security and sustainable livelihoods of millions of IPLCs. Many IPLCs practise highly sophisticated agro-forestry systems (for an example, see Box 7.1). However, in many Asian countries, there are policies on land use that consider all shifting cultivation to be destructive, casting it as a major driver of deforestation. These policies are damaging indigenous land use systems and are resulting in food insecurity and the loss of biodiversity and traditional knowledge.

40 traditional rice varieties are grown by shifting cultivation in Tinangol, Sabah (Malaysia), contributing both to agricultural biodiversity, food security and cultural identity. Courtesy Maurizio Farhan Ferrari, FPP

Box 7.1 The traditional land use system of the Lua (La-weu) peoples in northern Thailand[76]

The traditional land use system of the Lua (La-weu) peoples in northern Thailand includes different categories of conservation forests whose management and use is guided by various rules and agreements. They range from sacred forests, which can only be used for performing rituals, to forests where no trees are cut, and the only forms of harvest are gathering of timber and food. The Lua also practise rotational farming or shifting cultivation in areas which are unsuitable for rice paddy farming; each area is used for one year according to what is agreed in community meetings. The main crop is rice but many other plants are also grown in the fields. Land is cleared and dried for two months and then burned, but before burning, fire-break lines are cut near the fire protection forests to prevent spreading. When cutting the trees, the community members leave the stumps at a height of 60-100 cm and, after harvesting, trees sprout again from these stumps. This allows the forest to regenerate quickly. Land is left fallow for at least nine years. As a local leader explained: "*If you farm like this, the soil will remain healthy and the rice is good*".

In this context, the FAO Regional Office in Asia and the Pacific (FAO-RAP) and the Asia Indigenous Peoples Pact (AIPP) initiated a project on shifting cultivation titled "Regional Support to Indigenous Peoples for Livelihood and Food Security (2014)". Seven case studies were conducted (in Bangladesh, Cambodia, India, Indonesia, Laos, Nepal and Thailand) and the study concluded that shifting cultivation plays a significant role in providing livelihoods and ensuring food security for the indigenous communities; that their lives and cultures are intrinsically linked to shifting cultivation, and that the traditional shifting cultivation fallow cycle of seven to ten years is sustainable and does not lead to deforestation unless restrictions on land use compel farmers to clear new land in forest areas. The findings were presented and discussed in a multi-stakeholder consultation in Chiang Mai, Thailand, with active participation of government, UN agencies, regional NGOs, IPLC organisations and leaders, and local governments. Discussions affirmed that sustainably managed shifting cultivation requires protection and promotion. The consultations raised awareness about the importance of shifting cultivation and fostered collaborations between the different stakeholders involved, building on the principle of equal partnership between states and IPLCs and adherence to the right to free, prior and informed consent (FPIC). Many of the recommendations highlighted provision of support services for indigenous peoples by governments, with support from FAO, other UN agencies and CSOs, to enhance their livelihoods.[77]

Customary practices and knowledge of fire management

IPLCs around the world use controlled fires to regenerate pastures, fertilise land, shape landscapes and control undesirable insects, plants and animals (see Box 7.2 for an example from Spain). Many traditional natural commons under the control of specific communities are associated with multiple and wise uses of fire. Restoring and promoting traditional fire management patterns, which are linked to wider governance and management structures, can have significant benefits for biodiversity because they help to prevent large, uncontrolled and destructive fires associated with ineffective fire-fighting models (see Box 3.1 under Target 3 for an example from Australia). Similarly, a fire learning network has emerged in the USA so that people can re-learn forgotten fire management skills and restore the social and ecological diversity of forest systems.[78] A persistent challenge, however, is that many countries' budgets prioritise fire-fighting equipment over prevention.

Box 7.2 Traditional fire management in Spain[79]

In most areas of Spain, traditional fire management was closely related with communal grazing of cows, horses, sheep, goats, and pigs (often several of these in rotation on the same land during different seasons). As a result, a number of local breeds developed over the centuries that were well adapted to the diverse Iberian Mediterranean forest ecosystems, which range from sea level to over 2,300m in altitude. However, under the influence of EU agrarian policies traditional communal and family flocks and transhumance have diminished, resulting in a sharp decrease of forest grazing and the loss of several traditional breeds. Fires are a persistent yearly threat in southern Europe and traditional grazing has proved to be one of the most effective and economic prevention strategies. Local groups from Spain are lobbying for animal grazing to be supported as a fire prevention method. There have been positive experiences on the ground over several years in several Spanish regions (Castilla y León, Catalonia and Andalucia). A measure of fire prevention through grazing was admitted in the latest Spanish Rural Development Programmes. In Catalonia, awareness of the need to restore traditional fire management resulted in the creation in 1999 of a specialised team of fire-fighters (**Grup de Recolzament en Actuacions Forestals, GRAF**), who are committed to the creation of small strategic fires during the winter in order to prevent large-scale wild fires in the summer.

Agricultural heritage systems

An important international initiative that recognises and supports communities and local knowledge systems in agricultural biodiversity is the FAO initiative "Globally Important Agricultural Heritage Systems (GIAHS)". This initiative emphasises that, worldwide, specific agricultural systems and landscapes have been created, shaped and maintained by generations of farmers and herders using diverse natural resources and locally adapted management practices, and building on local knowledge and experience. In 2002 FAO started the initiative to safeguard and support these "agricultural heritage systems" and to promote public understanding, awareness, and national and international recognition of these systems. Over the past decade, the GIAHS Initiative has designated 32 sites around the world and has many success stories to share. Currently China has the most GIAHS sites, including various rice culture systems (such as rice-fish culture, Hani rice terraces, Dong's rice-fish-duck system); Pu'er traditional tea agrosystem; Xuanhua traditional vineyards system; Jiaxian traditional date gardens; Xinghua Duotian agrosystem, and Fuzhou jasmine and tea culture systems.[80]

A second international initiative is a labelling system for "biocultural heritage-based products" (see Box 7.3). Several labelling and certification schemes exist for ecological and fair trade products, but as yet there is no such scheme aiming specifically to protect biological and cultural diversity. The aim of this project is to fill this gap and to develop a non-bureaucratic and inexpensive scheme that can easily be used by IPLCs around the world. Concrete initiatives like this hold the potential to promote continued and enhanced sustainable community-based agriculture, forestry and aquaculture while providing a source of income and incentives to sustain these practices.

Karen people clearing fires break lines to protect the forest from fires during the dry season on the border of the Ob Luang National Park, Thailand. Courtesy IMPECT Association

Box 7.3 Exploring a labelling scheme for biocultural heritage-based products[ff]

Biocultural products of the Potato Park in Peru. Courtesy ANDES

The International Institute for Environment and Development (IIED), the University of Leeds and the *Asociación ANDES* from Peru are exploring the development of a new labelling or indication scheme for "biocultural, heritage-based products". An informal collective trademark developed by the Potato Park in Peru (described under Target 13) increased revenues and strengthened social cohesion and environmental stewardship, but the communities were not able to register formal trademarks for their products due to bureaucratic difficulties. The proposed scheme will emphasise and authenticate the way that cultural and spiritual values, local knowledge, innovations and practices, and the local environment are all linked closely together, giving products a unique character. The scheme aims to ensure that as much of the market value as possible is captured locally, through "full benefit capture", rather than through the benefit-sharing approach developed by others (the access and benefit-sharing (ABS) model). Consultations on the design of the scheme and investigation into similar schemes are currently taking place. A number of key design questions around issues including accessibility, local language, certification versus labelling, and enforcement still need to be addressed. However, concrete initiatives like this hold the potential to promote continued and enhanced sustainable community-based agriculture, forestry and aquaculture while providing a source of income and incentives to sustain these practices.[81]

Opportunities and recommended actions to enhance progress towards the target

The following measures are recommended to strengthen customary sustainable use practices and traditional management systems:

- Governments, donors and relevant organisations should support the effective implementation of the Plan of Action on Customary Sustainable Use by developing and implementing national and local plans and targets, and promote innovative, collaborative initiatives based on customary use and traditional practices.
- Governments, in collaboration with IPLCs, should explore options for devolving management and decision-making authority over agricultural, aquacultural and forestry areas that are located in IPLCs' lands and territories.

Key resources

Forest Peoples Programme (2011). Customary sustainable use of biodiversity by IPLCs: Examples, challenges, community initiatives and recommendations relating to CBD Article 10(c). Case studies and synthesis paper. http://www.forestpeoples.org/customary-sustainable-use-studies

Asia Indigenous Peoples Climate Change Monitoring and Information Network (CCMIN) (2016). Briefing paper on shifting cultivation and indigenous peoples. http://aippnet.org/briefing-paper-on-shifting-cultivation-livelihood-and-food-security-new-and-old-challenges-for-indigenous-peoples-in-asia/

Traditional sustainable cockle harvesting in Japan.
Courtesy Maurizio Farhan Ferrari, FPP.

TARGET

Pollution reduced

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

Key message:

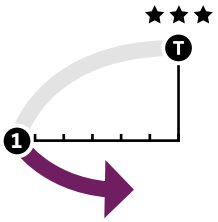
IPLCs have made important contributions to reductions in nutrient pollution by promoting agricultural practices with no or minimal use of chemicals, including traditional systems. They have also contributed to reductions in heavy metal pollution through community-based monitoring and reporting, and through campaigns and litigation to hold polluters to account. Further action is urgently required to protect ecosystems, biodiversity and also IPLCs from the effects of pollution.

Why this target is important for IPLCs

GBO-4 reported that environmental pollution continues to worsen in many regions of the world. For example while nutrient pollution (such as nitrogen pollution from agricultural fertilisers) has levelled off in Europe and North America, it remains at harmful levels and continues to increase in many other regions of the world. Trends in other pollutants such as mercury and lead are highly variable and no clear global evaluation was possible when GBO-4 was published.[5]

Environmental pollution directly affects the health and wellbeing of many IPLCs, who rely on water from natural streams and/or on hunting, fishing, gathering and local agriculture for their food and daily needs. In many cases the presence of mineral and hydrocarbon extraction, chemical plants or landfill on or near IPLC's lands[82] have polluted their natural resource base, often without any compensation. Heavy metal pollution is particularly problematic because heavy metals can accumulate in the body and in food chains, affecting both biodiversity and people.

Summary of progress towards the target

Target Elements (by 2020)	Status
Pollutants (of all types) have been brought to levels that are not detrimental to ecosystem function and biodiversity.	*No clear evaluation—highly variable between pollutants*
Pollution from excess nutrients has been brought to levels that are not detrimental to ecosystem function and biodiversity.	

Protracted legal battles and delayed payments have meant that many communities are still waiting for urgently needed actions to remediate pollution in their lands and territories. Meanwhile, IPLCs without access to or the means to buy clean food and water are forced to continue consuming contaminated resources, with serious effects on their health and wellbeing. Therefore this target is of vital importance to IPLCs.

Contributions and experiences of IPLCs towards the target

Two ways in which IPLCs are making substantial contributions to the reduction of pollution are through actions to counter pollution related to mineral and hydrocarbon extraction, and through actions to sustain and improve traditional agricultural practices that have no or minimal chemical inputs. This section gives examples of each of these kinds of action.

Actions to counter pollution from mineral and hydrocarbon extraction

Communities have made important contributions to reducing environmental pollution from unsustainable mining practices and hydrocarbon extraction. For example:

- In Guyana, mining encroachment on Amerindian customary lands, forests and waters and the uncontrolled use of mercury and other toxic chemicals has resulted in violation of community rights, severe environmental pollution, land degradation and declines in game and fish abundance. The indigenous Kako villagers in the Upper Mazaruni District (Region 7) have taken action to stop the ongoing environmental destruction by blocking miners from accessing mining claims on their traditional lands and river corridors (which are the subject of a longstanding land claim in the High Court of Guyana).[83]
- Many communities have filed legal cases to ensure that polluters are held accountable. For example, legal battles are ongoing against Chevron (formerly Texaco) for the environmental impacts of its operations in the Oriente region of Ecuador. Catastrophic environmental damage was caused across a large area, including indigenous peoples' ancestral lands, and was linked to serious health problems, including an increased risk of cancer. Over 20 years after the original incidents Chevron has yet to pay for the damages and clean-up, and the company has been implicated in the intimidation of judges in Ecuador, bribing of others and falsification of evidence.[84]
- Box 8.1 gives an account of a case from the Peruvian Amazon where indigenous peoples have implemented their own programme to monitor oil-related pollution.

Gold mining is not only linked to deforestation and mercury pollution but can also threaten the wellbeing and livelihoods of IPLCs. Courtesy Oda Almas, FPP

FECONACO's environmental monitors (photo by FECONACO)

Numerous oil spills have been documented and reported by indigenous monitors (photo by FECONACO)

Box 8 Linking community-based monitoring and reporting of oil pollution to environmental enforcement: FECONACO's Territorial Monitoring Programme[85]

Wilson Sandi Hualinga, Coordinator, Territorial Monitoring Programme of the Federation of Native Communities of the River Corrientes (FECONACO), Peru

Oil exploitation in the Corrientes river basin in northern Peru was started by Oxy [Occidental Petroleum Corporation] and Petroperu [Petróleos del Perú S.A.] more than forty years ago, in the territory of the Achuar and Urarina indigenous peoples, without their consent. The resulting pollution has affected the health of native communities, animals and fisheries. There are, for example, lakes that are totally contaminated, where all the fish are dead. Contamination occurs because the pipe valves or pipes used in the exploitation process break, or because waste-water wells overflow. Communities have suffered from many illnesses but did not know why. In September 2013[86] the situation was declared an environmental emergency, partly due to the advocacy of FECONACO [the representative political organisation of the native communities of the River Corrientes] and its environmental monitoring programme. Today, we still continue our fight against oil pollution.

Activities of the Territorial Monitoring Programme

The Territorial Monitoring Programme documents environmental incidents and reports the companies who are responsible to the State. There are currently 19 environmental monitors, who are elected by the communities.

I myself am an Achuar (from the Achuar people), from a community located in Lot Eight. As coordinator of the Territorial Monitoring Programme, I am responsible for planning the work and coordinating which areas are to be visited each month. Indigenous monitors identify contaminated sites (e.g. lagoons, ravines) and write down the GPS coordinates. With this information a report is prepared and submitted to the OEFA [Peruvian government's Agency for Environmental Assessment and Enforcement]. OEFA sends investigators, who are guided to the contaminated areas by the environmental monitors in order to take samples for laboratory analysis.

Box 8 **Continued...**

Challenges and successes of the programme

Since 2004 we have been able to identify numerous spills and incidents [for example pipeline spills, leakage from storage wells, dumping of waste water]. The situation has been declared an environmental emergency, partly due to the support of our Territorial Monitoring Programme.

A big challenge to the programme has been the lack of resources for training environmental monitors. Future plans for the programme are to have indigenous environmental monitors collect soil and water samples directly, and for the programme to create its own office with internet access so that it is easier to report contamination issues. Indigenous environmental monitoring has been essential in generating evidence and highlighting our demands, which are as follows:

- Safe water for communities: If communities do not have wells with treated water they are forced to continue drinking contaminated water and they will continue dying.
- Implementation of best practices to prevent environmental pollution. For example changing the old pipes (many sections are from the seventies), improvement of waste-water wells, and so on.
- Restoration of contaminated sites: The State has committed to do this but so far there has been no restoration.
- Compensation payments to FECONACO for all damages and for use of the land.

The communities participate in the territorial monitoring programme and help identify polluted areas (photo by FECONACO)

Reducing nutrient pollution through the promotion of traditional agricultural practices

Promoting traditional, sustainable agricultural practices is a second way in which IPLCs are supporting progress towards this target. For example:

- The Māori of Aotearoa/New Zealand have initiated and driven the development of Hua Parakore, which is an indigenous food sovereignty initiative and verification and validation system for food products and production. The initiative is aligned with the Slow Food Movement.[87] Food, wool and traditional medicines are produced according to cultural practices in a closed system, with zero or minimal inputs, and free from industrial fertilisers, pesticides and genetic modification.

There are three stages to becoming a *Hua Parakore* producer[88]:

1. In the *Kakano* (seed) stage, interested members of *Te Waka Kai Ora* (National Māori Organics Authority of Aotearoa/New Zealand) receive information and resources introducing the frameworks and principles of *Hua Parakore*.

2. In the *Tipu Ranga* (the growing seedling) stage, members develop and implement their *Hua Parakore* management plan, supported by community elders, *Hua Parakore* planning resources, farmers and regional officers.

3. In the *Hua Parakore* stage, the *Hua Parakore* mark is awarded collectively at a formal gathering of the community and the *Te Waka Kai Ora* representatives, when all present are satisfied that *Hua Parakore* has been achieved.

Hua Parakore has been essential for linking indigenous knowledge and practices with non-indigenous organic certification schemes. This initiative has contributed to the development of a partnership between Maori and non-Maori organic interests, focusing on conserving ecosystems, biodiversity, soil and people's health.[88]

- The Andean Project for Peasant Technologies (PRATEC) promotes traditional, sustainable agricultural practices and agrobiodiversity. Founded in 1986, PRATEC carries out and coordinates training programmes alongside local universities to revitalise Andean culture and agriculture in Peru and Bolivia. This has not only reduced nutrient pollution but also increased the diversity of cultivated plants, and has contributed to the revitalisation of Andean indigenous culture.[89]

Collecting organic matter from the forest floor to fertilise fields in mixed productive landscape in Khumbu Valley, (see photo on page 71) Nepal. Courtesy Maurizio Farhan Ferrari, FPP

Opportunities and recommended actions to enhance progress towards the target

- Governments should increase support for IPLCs' initiatives to strengthen traditional sustainable agricultural practices and reduce nutrient pollution.
- Governments and relevant actors should explore and facilitate mechanisms for community-based environmental monitoring of pollution, and also community-based monitoring of business compliance with environmental regulations.
- Governments and the private sector should address the lack of clean food and water suffered by many communities affected by environmental pollution.
- Governments and the private sector should work with affected communities to restore polluted areas, recognising that traditional ecological knowledge can make important contributions to ecosystem restoration.

Key resources

PUINAMUDT (*Pueblos Indígenas Amazónicos Unidos en Defensa de sus Territorios*). Indigenous environmental monitoring in the northern Peruvian Amazon. http://observatoriopetrolero.org/reportes-ambientales/

Hua Parakore initiative and certification system. www.tewakakaiora.wordpress.com

PRATEC (*Proyecto Andino de Tecnologías Campesinas*). www.pratecnet.org/wpress/

TARGET

Invasive alien species prevented and controlled

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.

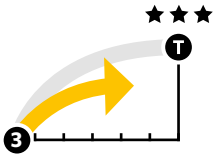
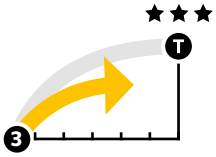
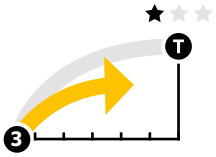
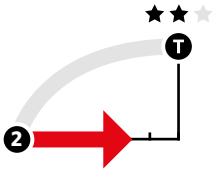
Key message:

Invasive Alien Species (IAS) pose serious threats to IPLCs' cultural, environmental and food systems, and many IPLCs are contributing to, and in some cases initiating, programmes to address this growing problem. The actions of IPLCs, building on their traditional knowledge, can complement scientific solutions and strengthen holistic, ecosystem-based approaches to the identification, assessment, monitoring, and control or eradication of IAS.

Why this target is important for IPLCs

The number of IAS continues to increase globally, as do their impacts on biodiversity,[5] jeopardising the wellbeing and livelihoods of many IPLCs. For example, this can happen through the impact of invasive plants on vital water sources; threats to food security; time and resource loss; damage to sacred areas, and disruption of burning patterns.[90] IAS are a particularly pressing issue for IPLCs inhabiting islands. However, conventional concepts of "weeds" or "pests" do not exist in all IPLC cultural lexicons and some situations have arisen where IAS have come to be valued by IPLCs. For example, there is evidence that the Spinifex People of the Western Desert in Australia have adopted cats as part of their spiritual and cultural history, known as "The Dreaming"[xxxii], giving them similar totemic value to native plants and animals.[91] In such situations, engagement with and recognition of the cultural or subsistence value of IAS to IPLCs is an important aspect of dealing with IAS and their long-term negative effects on ecosystems.[92]

Summary of progress towards the target

Target Elements (by 2020)	Status
Invasive alien species identified and prioritized	
Pathways identified and prioritized	
Priority species controlled or eradicated	
Introduction and establishment of IAS prevented	

xxxii "The Dreaming" in Aboriginal culture refers to the past, present and future environment in which Aboriginal people live, as well as spiritual and cultural concepts within the environment, including knowledge of plants and animals.[214]

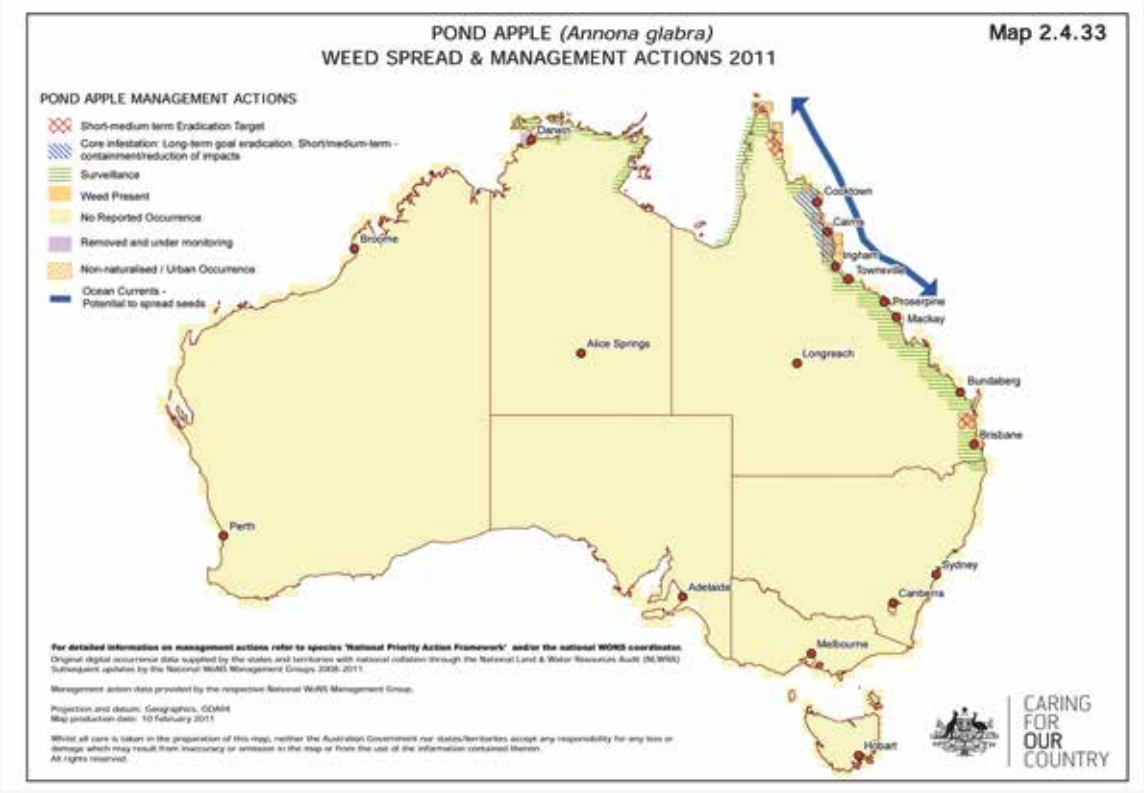
Contributions and experiences of IPLCs towards the target

The connection many IPLCs have with their lands and territories enhances their ability to notice small changes in the ecosystem through on-the-ground monitoring, and thus they can respond to change more rapidly than external actors.[93] This means that they are ideally placed to raise the alert to the presence of new invasives, and to monitor their spread or their control. IPLCs are also taking part in the production of management plans for the active control of IAS, and for the prevention or minimisation of their effects on cultures and livelihoods. The boxes in this section give some examples.

Box 9.1 Control of invasive pond apple infestations by indigenous rangers in a World Heritage Area, North-east Queensland, Australia

Chrissy Grant, Jabalbina Yalanji Aboriginal Corporation[94]

The Pond Apple (*Annona glabra*) is an invasive plant that is listed as a Weed of National Significance[xxxiii] in Australia. It originated in America and West Africa and was introduced to Australia in about 1912. It behaves like a mangrove, thriving in brackish and fresh water, and produces dense growth which crowds out native vegetation. It now extends from far northern New South Wales along most of the Queensland and Northern Territory coastlines. It transforms coastal wetlands, replacing native mangrove forest, paperbark tree swamp and nationally-endangered coastal littoral forest species[xxxiv], and forming monocultural thickets.



Source: Australian Government, Department of the Environment

*xxxiii Australian governments have agreed a list of 32 Weeds of National Significance (WoNS), based on "*their invasiveness, potential for spread and environmental, social and economic impacts".[215]

xxxiv Littoral forests are a type of coastal forest which differs from mangrove forest.

Box 9.1 Continued...

The traditional owners of the Eastern Kuku Yalanji (EKY) Indigenous Protected Area (IPA) in Queensland manage more than 20,000 ha of *Bubu* (Land/Country), either solely or in collaboration with local or national government. Invasive species represent a particular challenge to the implementation of their management plan. The pond apple is one of more than 125 species of introduced weeds (IAS) that are present in the IPA. Since 2014, the Jabalbina Yalanji Rangers of the IPA have collaborated with non-profit groups[7] and the local government to complete pond apple surveys and carry out control and follow-up monitoring of pond apple infestations in different parts of the EKY territory. Jabalbina rangers, Traditional Owners and indigenous students have been trained to identify/detect and control pond apple, including hand-pulling very small seedlings and using basal barking for larger trees, which involves spraying a small amount of herbicide directly onto the bark at the base of the tree. Indigenous communities are generally against the use of chemical controls on weeds, but, after seeing the successful effects of using glyphosate on pond apple, they are more accepting of herbicide use.

Many of the smaller infestations along rivers and creeks are now under control, but there is still the major challenge of eradicating pond apple from low-lying areas to which access is restricted by tides, *melaleuca* (tea trees) and mangrove swamps, and which are home to saltwater crocodiles. Jabalbina Rangers have conducted follow up monitoring and control trips during 2016 and will continue into 2017 and possibly beyond, with the hope of removing pond apple from EKY Bubu (Land/Country) altogether.

> *"None of us really saw the pond apple work as a hard thing to do. It was enjoyable, really, camping out on our Bubu and getting rid of this weed. We're excited to get rid of pond apple from our* Bubu*".*
>
> Jabalbina Ranger Team Leader Bradley Creek

Cape York Catchment worker conduct training to eradicate young Pond Apple trees (photo by Jabalbina Yalanji Aboriginal Corporation).

Thomas Houghton, Jabalbina Ranger cutting small Pond Apple trees (photo by Jabalbina Yalanji Aboriginal Corporation).

Jabalbina Ranger Terrence Solomon using a different method of eradicating Pond Apple trees (photo by Jabalbina Yalanji Aboriginal Corporation).

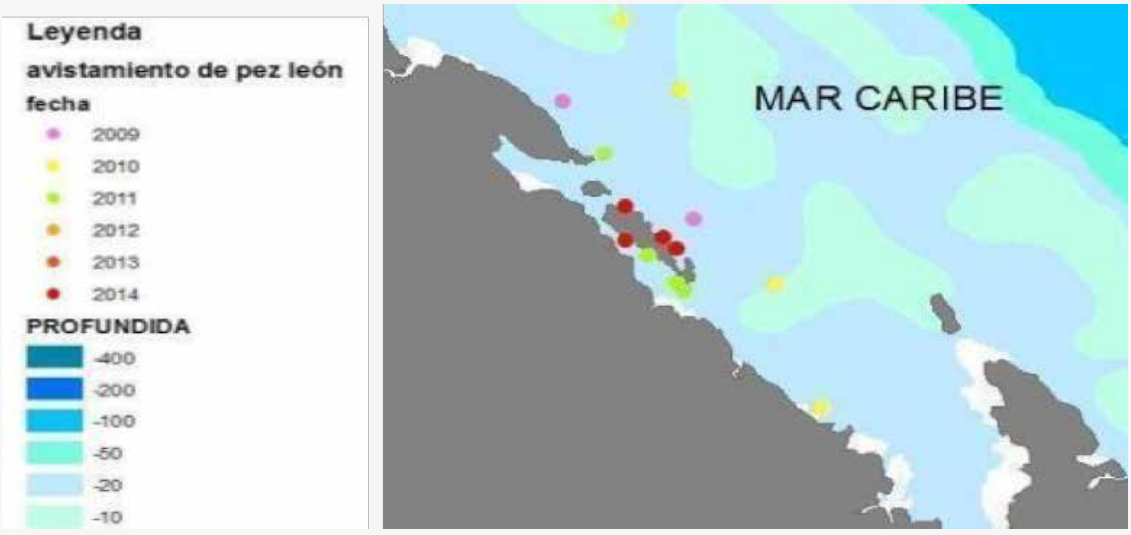
Box 9.2 An invader in our waters: actions of Guna People (Panama) in relation to the lionfish

Jorge Luis Andreve, PhD student at Seville University, Spain; Research Associate at the Fundación para la Promoción del Conocimiento Indígena (FPCI); Regional Director of the Ministry of the Environment in the Guna Yala region, Panama

Lionfish project:
1) Field trip to count lionfish;
2) Lionfish captured with a fishing line;
3) Fillet cut for human consumption and for stomach analysis

(Photos by Jorge Luis Andreve and FPCI).

The lionfish is a priority invasive alien species that was first recorded on the East Coast of the United States in 1992, but since then it has spread down the coast to MesoAmerica. Although lionfish were first recorded in the Guna Yala region, Panama, in 2009, it wasn't until early 2010 that the communities became aware of the danger posed by the species. In that year several local fishermen and divers and three young children were stung by the fish and had to be transferred from Guna Yala to Panama city because of a lack of local medication and knowledge about how to mitigate the pain and injuries.



Map of sightings of lionfish in the sea of Usdub, Guna Yala region

In order to address the lack of information, the Guna initiated a project to investigate the possible effects of this fish on the natural dynamics of communities and on their culture. It is important for the Guna Yala indigenous communities to seek viable ways to manage the lionfish which do not undermine their cultural, environmental and food systems, given their reliance on the sea and coral reef systems.

One of the first objectives was to develop a participatory map of places where the fish had been seen. In addition, interviews were held with community members, lobstermen and fishermen and a review of the literature took place to gather knowledge and information about the lionfish.

Box 9.3 Development of cultural indicators to monitor kauri dieback disease in Aotearoa/New Zealand

Based on Shortland (2011)[95] *and Roopu (2013)*[96]

Kauri dieback is a deadly, fungus-like disease specific to Aortearoa/New Zealand which has killed thousands of kauri trees over the past ten years. Kauri dieback was formally identified in April 2008. Its origin and time of arrival in Aortearoa/New Zealand are still unknown, but evidence suggests that it was introduced from overseas. This assumption is based on the narrow genetic variation found in the disease population and on its preference for high soil temperatures, which suggests a more tropical origin.[97] There is no known treatment as yet.

Kauri trees are considered a *taonga* species by many Māori: a species valued as a means of connection to the spiritual beliefs and way of life of their ancestors. A collective of representatives from Māori entities with kauri forests have formed the *Tangata Whenua Roopu* (TWR), part of a joint Kauri Dieback Programme that encompasses research on detection of kauri dieback, methods to control it and public awareness campaigns to help arrest its spread. The programme has developed a culturally-based methodological framework for monitoring Kauri *ngahere* (forest) health.

The framework uses a holistic kauri ecosystem approach ("*ngahere*") which takes into account factors beyond the kauri alone. A key application of the methodology is the development of cultural health indicators, including both qualitative and measurable (quantitative) indicators that were repeatable and duplicable. The indicators were designed to determine the state of health of kauri forests in different areas; to anticipate or predict the presence of kauri dieback, and to identify resilient kauri trees or forests that were not susceptible to kauri dieback. The indicators were created using a *mātauranga* Māori approach[xxxv] within a complementary scientific framework.

Extensive interviews with experts in *ngahere* kauri (kauri forests) were held in order to develop a set of values, which guided the development of indicators and recommendations for the monitoring programme. A site record form and mobile data collection application template were also developed. In addition, a research project based on how *Matauranga* Māori *rongoa* (medicinal use of plants) may be useful for either individual kauri trees or kauri forest health was also developed. If successful it could provide knowledge and/or tools for use in future research and potentially in the fight against kauri dieback, either through use of a bio-control or by building the resilience and enhancing the health of kauri forests.

Guna Yala village. Courtesy Caroline de Jong, FPP

xxxv Matauranga *Maori can be defined as "*the knowledge, comprehension, or understanding of everything visible and invisible existing in the universe*", and is often used synonymously with wisdom. In the contemporary world, the definition is usually extended to include present–day, historic, local, and traditional knowledge; systems of knowledge transfer and storage; and the goals, aspirations and issues from an indigenous perspective.*[216]

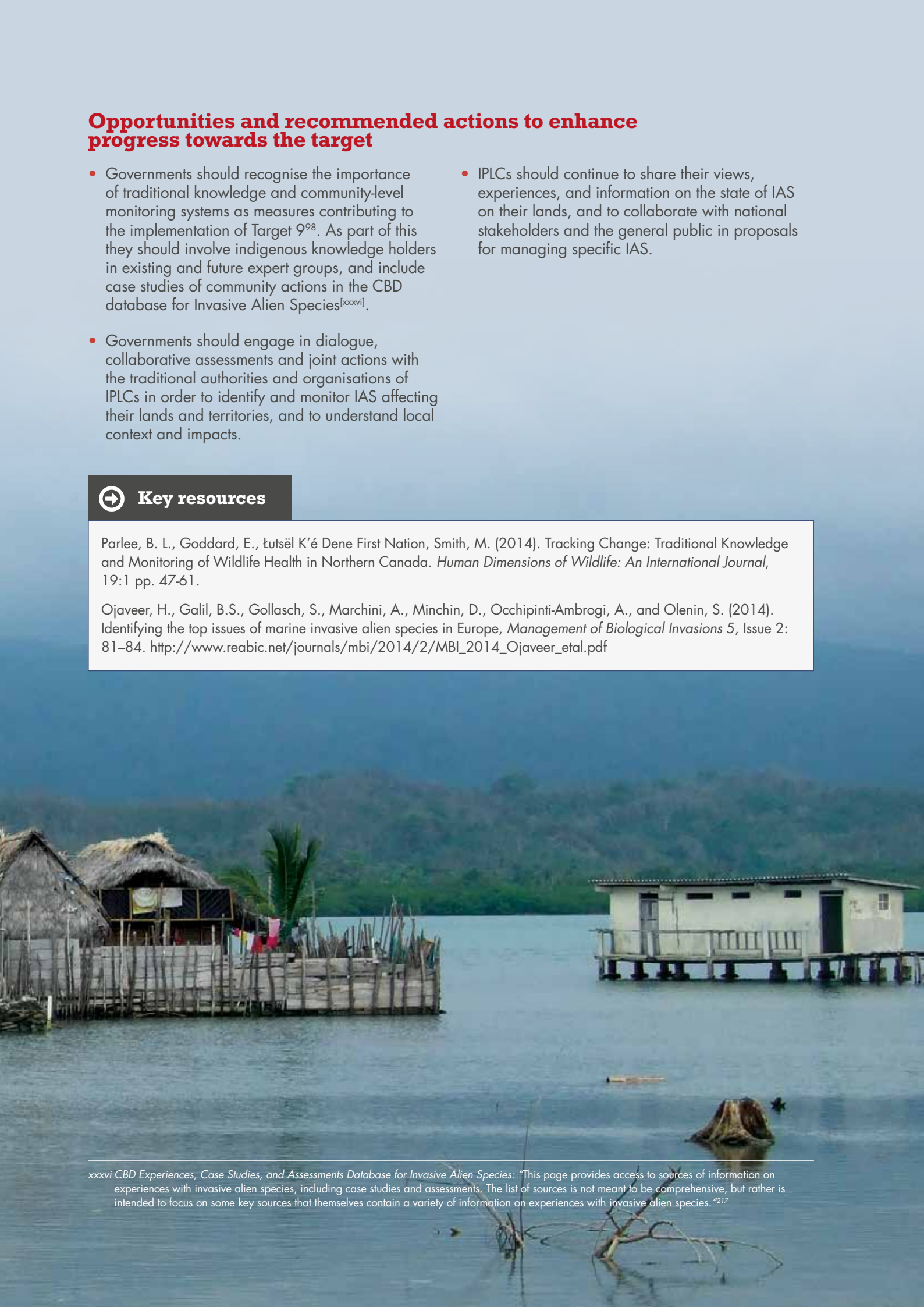
Opportunities and recommended actions to enhance progress towards the target

- Governments should recognise the importance of traditional knowledge and community-level monitoring systems as measures contributing to the implementation of Target 9[98]. As part of this they should involve indigenous knowledge holders in existing and future expert groups, and include case studies of community actions in the CBD database for Invasive Alien Species[xxxvi].
- Governments should engage in dialogue, collaborative assessments and joint actions with the traditional authorities and organisations of IPLCs in order to identify and monitor IAS affecting their lands and territories, and to understand local context and impacts.
- IPLCs should continue to share their views, experiences, and information on the state of IAS on their lands, and to collaborate with national stakeholders and the general public in proposals for managing specific IAS.

Key resources

Parlee, B. L., Goddard, E., Łutsël K'é Dene First Nation, Smith, M. (2014). Tracking Change: Traditional Knowledge and Monitoring of Wildlife Health in Northern Canada. *Human Dimensions of Wildlife: An International Journal*, 19:1 pp. 47-61.

Ojaveer, H., Galil, B.S., Gollasch, S., Marchini, A., Minchin, D., Occhipinti-Ambrogi, A., and Olenin, S. (2014). Identifying the top issues of marine invasive alien species in Europe, *Management of Biological Invasions 5*, Issue 2: 81–84. http://www.reabic.net/journals/mbi/2014/2/MBI_2014_Ojaveer_etal.pdf



xxxvi CBD Experiences, Case Studies, and Assessments Database for Invasive Alien Species: "This page provides access to sources of information on experiences with invasive alien species, including case studies and assessments. The list of sources is not meant to be comprehensive, but rather is intended to focus on some key sources that themselves contain a variety of information on experiences with invasive alien species."[217]

TARGET 10

Ecosystems vulnerable to climate change

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.

Key message:

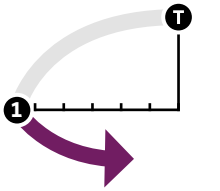
IPLCs, particularly those in small islands, coastal and high-altitude areas, deserts and the Arctic are already experiencing the impacts of climate change. Natural resource management systems of IPLCs and ICCAs[xxxvii] play an important role in reducing anthropogenic pressures on coral reefs and other vulnerable ecosystems. Concerted action on this target is needed to bolster IPLCs' abilities to maintain ecosystem integrity and to cope with climate change impacts, including reform of climate mitigation and adaptation policies that stand to increase IPLCs' vulnerability.

Why this target is important for IPLCs

Coral reefs, mangroves, mountain ecosystems and low-lying ecosystems are particularly vulnerable to climate change. They also face increasing threats from other anthropogenic pressures such as overfishing, destructive fishing methods, coastal development, habitat loss and pollution. The GBO-4 indicates that rather than progressing to address these threats, the situation has continued to get worse.[5] Non-achievement of this target is of great concern to IPLCs, because IPLCs across the world are disproportionally impacted by climate change.[99] Maintaining the integrity and functioning of vulnerable ecosystems is an urgent priority for many communities.

A recent participatory assessment on risks, vulnerabilities and priorities in 50 indigenous communities in five Asian countries concluded that many indigenous communities are at risk of severe impacts of climate change from linked extreme events, such as increasing frequency and intensity of typhoons and whirlwinds; changes in weather patterns such as floods, extended dry periods and droughts, and landslides. These can cause food shortages, scarcity of drinking water, soil erosion and destruction in the communities.[100]

Summary of progress towards the target

Target Elements (by 2020)	Status
Multiple anthropogenic pressures on coral reefs are minimized, so as to maintain their integrity and functioning.	★★★ 
Multiple anthropogenic pressures on other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	*Not evaluated — Insufficient information available to evaluate the target for other vulnerable ecosystems including seagrass habitats, mangroves and mountains*

Participatory research with farming and fishing communities in Timor-Leste and Solomon Islands suggests that existing livelihood activities will need to be adapted frequently and on an ongoing basis to respond to climate change, and that more fundamental changes to their aquatic agricultural systems are likely to be needed.[101] Many communities in Small Island Developing States and the Arctic have already suffered serious crises linked to climate change in the form of forced relocations caused by melting permafrost and rising sea levels.[99]

xxxvii Indigenous Peoples' and Community Conserved Territories and Areas. See Target 11 and http://www.iccaconsortium.org[79]

Contributions and experiences of IPLCs towards the target

Progress towards Aichi Target 10 is being made both through the direct efforts of IPLCs on the ground and through their contributions at the international level. On the ground, IPLCs are working to reduce anthropogenic pressures on vulnerable ecosystems through sustainable management and through the protection of community conserved areas. Internationally, they are pressing for measures to enable the implementation of key climate change mitigation and adaptation actions.

Customary rules and strategies to conserve and sustainably manage vulnerable ecosystems

There is growing international recognition that communities' traditional knowledge and customary sustainable use practices not only increase ecosystems' resilience to climate change[102] (see also Target 15), but also protect the integrity and functioning of vulnerable ecosystems:

Traditional aquatic resource management systems: The Pagu and Gua communities in Indonesia practise *Sasi* (customary aquatic resource management) to protect and maintain mangroves through zoning and implementation of "no-access zones" based on traditional knowledge. They also use marine biodiversity and traditional resource-harvesting inventories to avoid over-exploitation and to monitor overharvesting by fishing companies and pollution from mining. Similar traditional water resource management systems are practised by other indigenous communities. These include *Tagal* by indigenous Kadazan and Dusun communities in Sabah, Malaysia; *Lue Tee* by the Karen in northern Thailand, and *Achaluwa* by the Lisu communities, also in northern Thailand. [xxxviii],100

Enhancing the resilience of vulnerable ecosystems through traditional cultivation practices: Traditional cultivation practices can serve as natural barriers and shields against climate change-induced natural disasters. For example, Dusun communities, indigenous to Sabah, Malaysia, use mixed planting of cassava and bamboo species to stabilise areas that are prone to landslide, and systematic planting of banana trees as natural fire breaks to reduce risks from droughts. Similarly, Gura communities in Indonesia increase the resilience of coastal areas by means of systematic mangrove cultivation, and through restoration work, building drainage systems and *Talud* wave breakers, based upon their traditional knowledge.[100]

The important role of Locally-Managed Marine Areas (LMMAs) in conserving coral reefs and other vulnerable ecosystems

Empowering IPLCs to manage fisheries sustainably is a key action to enhance progress towards this target. A comparison between marine national parks and co-managed reserves and traditionally managed coral reefs in Indonesia and Papua New Guinea found that traditional management regimes, none of which involved permanent reef closure, were more effective at conserving reef fish. The research suggested that management regimes designed to meet community goals achieved greater compliance and conservation success than regimes primarily designed for biodiversity conservation.[103]

Many communities enforce Locally-Managed Marine Areas (LMMAs), which enable community-based adaptive management based on traditional knowledge[104] (see Box 10.1 for an example). Communities also take actions to engage in monitoring and addressing external pressures, such as overfishing in coral reefs and coastal areas. For example in many Pacific Small Island Developing States, local communities practising traditional management of coastal resources have been instrumental in improving coastal fisheries by restricting the access of outsiders seeking to exploit coastal resources commercially.[105]

Tagbanwa people of Coron Island, Philippines, have strict regulations to protect the marine environment as part of their ancestral domain management plan. Courtesy Maurizio Farhan Ferrari, FPP

xxxviii For further examples, see Target 6.

Box 10.1 Vueti Navakavu: A success story from Fiji

Based on ICCA Registry (2010)[106]

Vueti Navakavu, an LMMA and registered ICCA on Fiji's main island of Viti Levu, is a community conserved marine area. Designated in 2002 to address the decline of fish populations observed by the communities in their traditional fishing ground (locally known as *qoliqoli* and covering an area of 19.1 km^2), this area is managed by the Yavusa Navakaavu clan to improve the management and protection of their marine area. Its aim is to conserve a healthy ecosystem that can support abundant and diverse marine life as a source of food and income. Following the creation of the *Qoliqoli* Committee and several consultations with the wider community, a system of community fish wardens was introduced to stop illegal fishing, and a no-take area constituting 20% of the total area was created. Following the establishment of the reserve, the condition of the coral reefs has stabilised and fish catches and invertebrate populations have increased. This in turn has reduced the time and effort required for catching fish and increased the income of the fishermen in the local community.

Healthy reef in community-managed Namena Marine Reserve, Fiji. Courtesy Michael Webster, Coral Reef Alliance.

Tools for community-based impact assessments and adaptation strategies to ensure sustainable management of vulnerable ecosystems in the face of climate change

Because of climate change, many IPLCs will have to adapt their strategies for management and conservation of vulnerable ecosystems. Box 10.2 describes an initiative by the Guna in Panama to better understand climate change impacts on their territory. Some wider initiatives providing tools to help IPLCs manage vulnerable ecosystems in the face of climate change are as follows:

- A toolkit developed by the Indigenous Peoples' Biocultural Climate Change Assessment Initiative (IPCCA) for IPLCs to perform local assessments of climate change impacts and develop strategies for enhancing resilience (see also Target 15).[107]
- LEAP (Local Early Action Planning) tools, such as the LEAP guide developed by the Coral Triangle Initiative[108], can provide guidance on the use of information on the local climate history, climate change projections, and information from field-based threat and vulnerability assessments in order to mobilise communities to develop and implement adaptation action plans in order to increase socio-ecological resilience.[109]

Box 10.2 Identifying impacts and threats to vulnerable ecosystems in Guna Yala, Panama[xxxix]

Onel Masardule, FPCI (Fundación para el Conocimiento Indígena)

The Guna people live in Guna Yala, an archipelago in which most inhabited islands are threatened by rising sea level caused by climate change. Guna Yala contains 81% of Panama's reefs and has high levels of biodiversity.[110] The Guna undertake fieldwork to analyse and diagnose problems associated with climate change, both in relation to the ecosystem and in relation to their own socio-cultural and economic systems. Through their research, the Guna have been able to identify and monitor several impacts, including increased mortality of coral reefs, drying up of mangroves and erosion of sandy island ecosystems. These have negative impacts not only on biodiversity, but also on the traditional management of the islands by the Guna.

Guna people in Panama collecting data on the impacts of climate change on their territories and livelihoods. They have started to produce vulnerability maps to address those impacts, including increased flooding. Courtesy FPCI

xxxix See also Box 9.2 under Target 9 for more information from the Guna people.

Traditional early warning, risk prevention, and monitoring systems

Monitoring of vulnerable ecosystems and the early identification of risks and problems is vital in order for timely action to be taken to protect and restore the integrity and functioning of ecosystems. For example the Tangkuhl community in North-east India is able to predict droughts and types of rain based on their traditional knowledge of specific weather patterns and animal behaviour. Similarly in Laos, K'Hmu and Puan communities have developed their own flood monitoring systems based on their traditional knowledge.[100]

Communities' monitoring systems based on traditional ecological knowledge also contribute to understanding of climate change impacts and improving climate change projections.[111] The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) considers the integration of indigenous and local knowledge in participatory scenario development as a critical foundation for explorations of future scenarios.[112]

International IPLC actions to reduce pressures on vulnerable ecosystems impacted by climate change

Inappropriate climate mitigation and adaptation policies stand to increase communities' vulnerability to climate change, and effective safeguards need to be in place to ensure that adaptation and mitigation actions respect the knowledge and rights of IPLCs.[111] The International Indigenous Peoples' Forum on Climate Change (IIPFCC), a caucus of IPLC representatives, has been raising these issues through their contributions to the United Nations Framework Convention on Climate Change (UNFCCC).[99] Other key issues raised by the IIPFCC at the international level include the need to keep reserves of oil and gas on communities' lands and territories in the ground, and the important role that traditional knowledge plays in adapting to climate change.[99]

People's Summit on Climate Change at UNFCCC COP20 in Lima, Peru: Indigenous peoples are advocating changing the system, not the climate. Courtesy Viola Belohrad, FPP).

Opportunities and recommended actions to enhance progress towards the target

- Governments and relevant organisations should learn from and increase support for community strategies and institutions for sustainably managing anthropogenic pressures on vulnerable ecosystems.
- Governments and NGOs should increase outreach and awareness-raising activities to communicate projected climate change impacts to communities.
- Governments and NGOs should provide technical and financial support for participatory community risk and vulnerability assessments, and for the development and implementation of community-based adaptation action plans.
- Governments and conservation organisations should provide greater recognition and support for the creation and implementation of locally managed marine areas (LMMAs).
- IPLCs should enhance and further develop adaptation capacities, vulnerability assessments and community-based monitoring of vulnerable ecosystems.
- All parties should work to enhance collaboration between traditional knowledge holders and scientists to improve understanding of climate change impacts.

Key resources

Govan, H., Aalbersberg, W., Tawake, A. and Parks, J. E. (2008). Locally Managed Marine Areas : A guide to supporting Community-Based Adaptive Management. The Locally-Managed Marine Area Network. http://www.reefresilience.org/wp-content/uploads/LMMA-Guide-2008.pdf

Asia Indigenous Peoples Pact (2015). Local Actions: Solutions to Global Challenges. Initiatives of Indigenous Peoples in Climate Change Adaptation and Disaster Risk Reduction Based on Traditional Knowledge. http://aippnet.org/local-actions-solutions-to-global-challenges/

Biocultural Climate Change Assessment Initiative (IPCCA) (2015). IPCCA Methodological Toolkit. http://ipcca.info/toolkits-en

TARGET

Protected areas

By 2020, at least 17% of terrestrial and inland water areas and 10% 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 landscape and seascape.

Key message:

Many IPLCs actively manage their customary lands and waters in ways that conserve them effectively. Their actions in doing so contribute to progress on this target and merit greater recognition and support. One mechanism towards this is the concept of Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs), which are among the most effective of all area-based conservation measures and contribute to both conservation coverage and connectivity. To achieve the target by 2020, actions are also needed to improve the equitable governance and management of protected areas, including through recognition of the rights of IPLCs and the adoption of mechanisms to address conflicts and human rights abuses.

Why this target is important for IPLCs

Across the world progress has been made to increase the coverage of protected areas, and as GBO-4 states, at current rates of growth the target of protecting 17% of the planet's land area is on course to be met by 2020. However, GBO-4 also recognises that only a minority of protected areas enjoy effective and equitable management. Further actions are needed to this end, including through enhanced cooperation with IPLCs.[5]

This target is important for IPLCs for both positive and negative reasons. On the positive side, in cases where protected areas are created with IPLCs' prior, fully informed consent and managed in accordance with their needs, or where protected areas created by IPLCs themselves are recognised, protected areas status can offer much-needed protection for IPLCs' lands and resources. This approach is in line with current international conservation policy[xl] and is reflected particularly in the increasing focus on expanded and complementary governance models, including ICCAs and other area-based conservation measures.

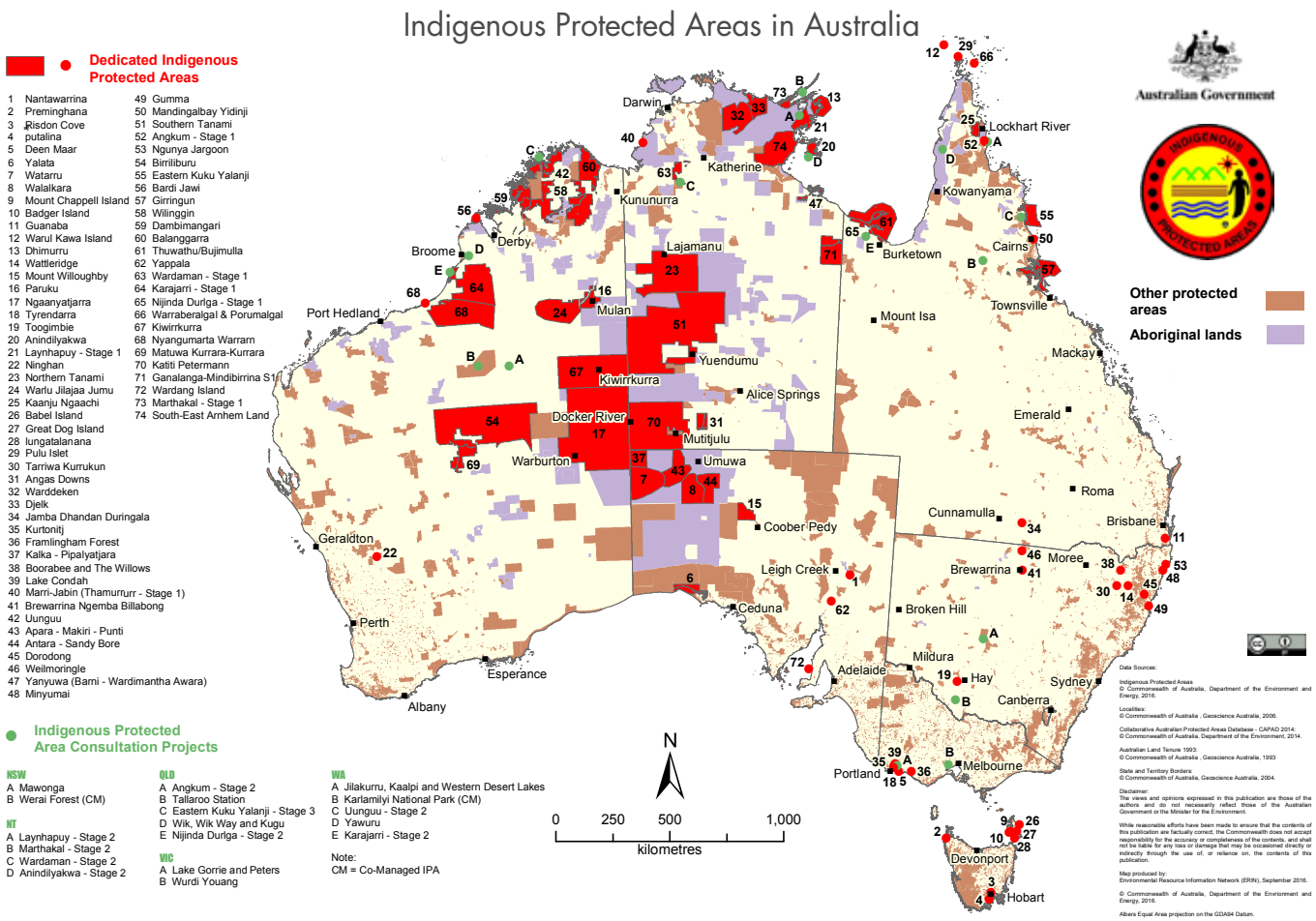
Summary of progress towards the target

Target Elements (by 2020)	Status
At least 17% of terrestrial and inland water areas are protected.	★★★ T 4
At least 10% of coastal and marine areas are protected	★★★ T 3
Areas of particular importance for biodiversity and ecosystem services protected	BIODIVERSITY ★★★ ECOSYSTEM SERVICES ★☆☆ T 3
Protected areas are ecologically representative	TERRESTRIAL AND MARINE ★★★ INLAND WATERS ★☆☆ T 3
Protected areas are effectively and equitably managed	★☆☆ T 3
Protected areas are well connected and integrated into the wider landscape and seascape	★☆☆ T 3

More negatively, state protected areas in many parts of the world continue to forcibly displace IPLCs from their traditional lands and resources in direct contravention of international law, causing extreme suffering. A recent report by the Special Rapporteur of the UN Human Rights Council on the rights of indigenous peoples highlighted that about 50% of the planet's protected areas have been established on indigenous peoples' lands and that in many cases this has been associated with violations of their human rights.[113] For IPLCs, therefore, it is vital and urgent that practice is brought in line with policy and with international law and that issues of equity are fully addressed.[xli] If this is done, the attainment of this target will bring welcome support to IPLCs in their efforts to maintain their lands and territories, many of which are of high biodiversity value.[2] In addition, current tensions between conservation organisations and IPLCs will be substantially reduced.

> *Issues of land tenure, sustainability and biodiversity are connected and very important for communities. Secure land tenure enables communities to look at their lands on the long-term and gives them rights to act against those who want to extract for the short term. We need to remove this idea from our heads that protected areas can only be taken care of by governments and recognise the rights of communities to own and protect their lands.*

Source: Peter Kitelo, Ogiek community member and Strategic Director of Chepkitale Indigenous Peoples' Development Project (CIPDP)



Latest map of Australia's Indigenous Protected Areas, Australian Government, Department of the Environment and Energy

xl *This approach is supported by the International Union for the Conservation of Nature (IUCN) and is reflected in the 2004 CBD Programme of Work on Protected Areas and subsequent CBD decisions.*

xli *A recent review of new legislation since the 2003 World Parks Congress found that only around a third of analysed countries had enacted or reformed their protected-area legislation related to community lands and resource rights.*[218]

Contributions and experiences of IPLCs towards the target

IPLCs are contributing substantially to increased geographic coverage, diversity and connectedness of protected or conserved areas through the protection and maintenance of their lands and territories. As part of the process to recognise this contribution, during the past decade the concept of ICCAs has been integrated into international conservation policy, both by the International Union for the Conservation of Nature (IUCN) and also within CBD processes.[xlii] This offers a powerful mechanism by which IPLCs' contributions to Target 11 can be recognised. ICCAs are estimated to cover as much land as government-designated protected areas, or about 12% of terrestrial surface.[114] Some examples are as follows[xliii]:

***Kawanana* in Casamance (Senegal):** *Kawanana* means "*Our patrimony, for us all to conserve*". The indigenous Djola villagers have successfully conserved 9,665 hectares of coastal and marine resources by returning to a traditional system of governance and management of local marine resources. This has prevented unsustainable exploitation by external fishermen, and has improved habitat conditions. As a result, since this ICCA was put in place fish species that had disappeared locally have returned, fish catches have more than doubled, and there has been a marked improvement in the communities' food security.[115]

Sacred groves in Meghalaya, North-east India: Meghalaya is a key area for biodiversity conservation and is part of the Indo-Burma biodiversity hotspot. More than 90% of the total forest area is under the control of indigenous tribes, who have a long tradition of conserving virgin forest patches as sacred groves. Most of the sacred groves are located in the catchment areas of important rivers and streams, thus playing a crucial role in soil and water conservation. Traditionally, it is sacrilege to even touch the leaves of trees in many of these sacred groves, as they are believed to be the abode of deities who bestow welfare on the people and lands. Such a belief underpins a powerful conservation ethic.[116]

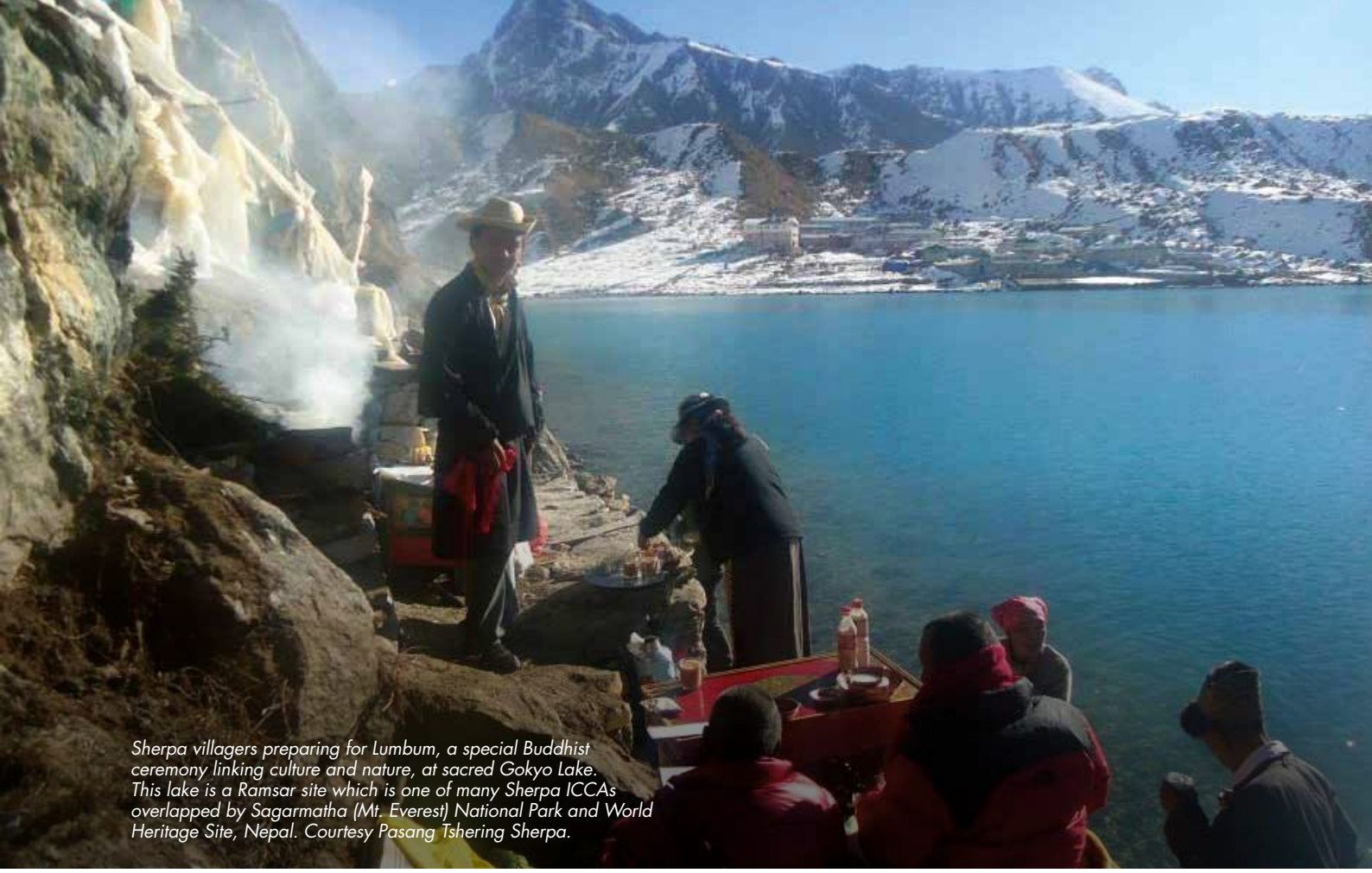
The **Australian Indigenous Protected Area (IPA) programme** has supported indigenous communities to manage and conserve their lands as part of Australia's National Reserve System. To date, there are 72 declared IPAs covering more than 64 million hectares and making up 45% of the National Reserve Network. Through recognition of community conservation and of diverse forms of conservation governance, Australia has been able to reach Aichi Target 11 five years ahead of schedule, while at the same time realising multiple benefits for indigenous Australians and the Australian Nation as a whole.[117] (See map at page 87)

The signpost designed, prepared and set in place by the community for the area of the Bolon Mitij (red zone in the management plan of the Kawawana Community Conserved Area). Courtesy Courtesy Grazia Borrini-Feyerabend

Facing the Bolon Mitij, a spiritual place now restored to its original status—immense respect and no entry for any reason. Courtesy Grazia Borrini-Feyerabend

xlii For more information see ICCA Consortium[79] and ICCA registry, an online platform where communities themselves provide data and case studies of registered ICCAs: http://www.iccaregistry.org/

xliii See Target 10 for marine examples. Many more examples can be found on the website of the ICCA Consortium.[79]



Sherpa villagers preparing for Lumbum, a special Buddhist ceremony linking culture and nature, at sacred Gokyo Lake. This lake is a Ramsar site which is one of many Sherpa ICCAs overlapped by Sagarmatha (Mt. Everest) National Park and World Heritage Site, Nepal. Courtesy Pasang Tshering Sherpa.

IPLCs are also contributing to improved effectiveness of state protected areas through participation in co-management regimes.[113,118–120] There is increasing evidence that ICCAs and co-management are more effective than non-collaborative state protected areas (see also Targets 5 and 7). For example:

- A recent global assessment of 40 protected areas and 33 community-managed forests in the tropics showed that community-managed tropical forests have lower and less variable annual deforestation rates than state protected areas.[56]

- Similarly, a recent global assessment of 165 protected areas concludes that positive conservation outcomes are more likely to occur when protected areas adopt co-management regimes, empower local people, reduce economic inequalities, and maintain cultural and livelihood benefits.[121]

Equity and rights issues

Action is needed urgently to address equity issues in protected areas across the world and ensure full recognition and respect for human rights in line with international law and policy. IPLCs play an important monitoring role in relation to equity issues, thereby contributing to the development of policies and tools[xliv] that also ensure the effectiveness and sustainability of protected areas. Box 11.1 presents an account of a case in Kenya where indigenous peoples have been forcibly evicted from their lands, and through application of the Whakatane mechanism[xlv], were able to bring attention to the underlying equity and justice issues and work with other stakeholders towards a solution.

There are still too many cases where IPLCs suffer human rights violations, including loss of homes and livelihoods, due to conservation imposed from above without due respect for rights and participation. Mt Elgon on 21st June, 2016. Courtesy CIPDP.

xliv For example, IIED has published a protected areas equity framework consisting of elements relating to (i) recognition and respect for people's rights, values, interests and priorities; (ii) procedures for effective participation of all actors in decision-making; (iii) distribution of costs and benefits between actors; and (iv) enabling conditions.[219]

xlv The Whatakane mechanism is a tool to assess and address historic and current injustices against indigenous peoples related to the establishment, governance or management of protected areas. It was adopted by IUCN at the 4th World Conservation Congress in 2008. See http://whakatane-mechanism.org [220]

Box 11.1 The Ogiek's experience with protected areas in Mount Elgon, Kenya: Ways towards rights-based conservation

Peter Kitelo, Ogiek community member, Strategic Director Chepkitale Indigenous Peoples' Development Project (CIPDP) and convener of Kenya Forest Indigenous Peoples Network (FIPN)

The population of the Ogiek of Mount Elgon is about 18,000 and about 3,000 Ogiek still live on our ancestral lands in Chepkitale on Mount Elgon, which supports a rich variety of vegetation ranging from montane forest to high open moorland. As hunter gatherers indigenous to this area, our rights to our lands are recognised by Article 63(2)(d)(ii) of the Kenyan Constitution. But the fact is that the Government has not put this into practice, and this is a bone of contention for all forest communities in Kenya, not just for the Ogiek.

The Ogiek's struggle and impacts of evictions

In the 1930s the effects of land dispossession and colonialism really started to be felt by the Ogiek. The communities were first evicted from their lower lands and restricted to the higher mountain forest areas when the lower lands were taken by British colonialists for farming. The forests were then gazetted as protected areas and a tiny part up on the moorlands was set aside as a native reserve. From 2000 onwards, the community's struggles have become more urgent, especially after the final part of the community lands in the native reserve was gazetted as Chepkitale Game Reserve, following the conversion of other parts as Mount Elgon National Park in 1968. Communities have been evicted from all these areas except Chepkitale, to where we have kept returning after every eviction. Every community member has been a victim of evictions; I doubt that there is a single Ogiek family that has not faced evictions. I have experienced evictions four times myself; others have been evicted many more times.

These evictions have broken communities and families. Many acts of violence have been committed, such as burning of our houses and confiscating or burning of our belongings. Impacts have included restrictions on harvesting of forest resources, which has threatened our food security. This was very pronounced in the fifties and seventies, when it exposed the community to unimaginable hunger. Another negative impact has been the lack of access to medicinal plants.

Some of those who have been completely evicted from the forests were forced to change their livelihoods and become farmers. These evictions have not only had negative impacts on communities' livelihoods but also on the forest itself.

Corruption amongst government officials has had a negative impact in many of these supposedly protected areas, not only through facilitating the establishment of timber plantations but also through encouraging charcoal burning, elephant poaching and so on, all of which the Ogiek community opposes.

Application of the Whakatane assessment: a way to facilitate conflict resolution

In 2011, International Union for Conservation of Nature (IUCN) agreed to pilot rights-based assessments of protected areas as part of the "Whakatane Mechanism" to address the injustices that have been inflicted on indigenous peoples through the creation of protected areas. One of the pilot assessments took place at Mount Elgon. It focused especially on the Ogiek land that had been turned into the Chepkitale Game Reserve in 2000 without our consent.

The assessment took place in three stages: a first stakeholder roundtable discussion, a scoping study, and then another roundtable discussion. The discussions took place in Nairobi and involved the Ogiek communities, Kenya Forestry Service (KFS), Kenya Wildlife Service (KWS), the Ministry of Environment, the IUCN country office and the local government.

The Whakatane Mechanism really helped us to have amicable discussions with the different actors and it became clear that the different interests could indeed be consolidated and that a win-win situation could be achieved. It became clear to all stakeholders that the communities were not interested in destroying the forest; if they were, they would already have done so long ago.

One outcome of the assessment was the recommendation that the land should revert back to the Ogiek community. The County Council declared in a resolution that they would not oppose this and from 2012 until June 2016 we have had amicable discussions to achieve an out-of-court settlement, only disrupted very occasionally (e.g. in 2016) by the Kenya Forestry Service burning our homes as some people find it very hard to let go of the colonial approach and embrace the win-win potential of the new conservation paradigm.

Opportunities and recommended actions to enhance progress towards the target

- Governments and other actors should formally recognise and support IPLC initiatives related to area-based conservation, including ICCAs and sacred sites, including those overlapped by state protected areas.[122]
- Governments and other actors should provide greater support to IPLCs to protect and enforce their conservation practices, including through formal recognition of customary rights under national law.
- Displacement of IPLCs from their lands and resources in the name of protected areas and conservation, and all other infringements of their rights in contravention of international law, should cease immediately.
- Governments, conservation organisations and others should urgently address all issues associated with equity and human rights in protected areas, including by reviewing national institutional and legal frameworks on protected area governance and management.
- Governments and other actors should promote transparency and the development of national monitoring and conflict resolution mechanisms. These should complement existing international mechanisms, including the International Union for the Conservation of Nature's (IUCN) Whakatane Mechanism.[123]
- Governments and relevant actors should enhance implementation of the CBD Programme of Work on Protected Areas, with a focus on Element 2 on Participation, Governance, Equity and Benefit Sharing, and of the Plan of Action on Customary Sustainable Use.[124]

Fishers continue to play an important role in co-management of the Galapagos Marine Reserve, Ecuador. Courtesy Pippa Heylings

Key resources

Stevens, S. (ed) (2014). *Indigenous Peoples, National Parks, and Protected Areas: a New Paradigm Linking Conservation, Culture, and Rights.* Tucson, Arizona: University of Arizona Press.

Oldekop et al. (2015). A global assessment of the social and conservation outcomes of protected areas. http://onlinelibrary.wiley.com/doi/10.1111/cobi.12568/epdf

ICCA Consortium. http://www.iccaconsortium.org

Rights and Resources Initiative (RRI) (2015). Protected Areas and the Land Rights of Indigenous Peoples and Local Communities. http://www.rightsandresources.org/publication/protected-areas-and-the-land-rights-of-indigenous-peoples-and-local-communities-current-issues-and-future-agenda/

Franks, P. and Schreckenberg, K. (2016). Advancing equity in protected area conservation. http://pubs.iied.org/17344IIED.html?c=biodiv

Tauli-Corpuz, V. (2016). Report of the Special Rapporteur of the Human Rights Council on the Rights of Indigenous Peoples. http://unsr.vtaulicorpuz.org/site/index.php/en/documents/annual-reports/149-report-ga-2016.

TARGET 12

Reducing risk of extinction

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.

Key message:

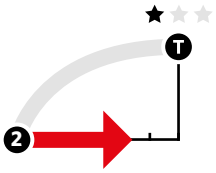
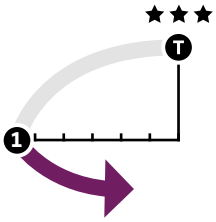
IPLCs' traditional knowledge, conservation actions and expertise on the status and trends in abundance of threatened species will be invaluable for achieving this target, in particular through the use of community-based monitoring for early identification and signalling of problems or threats. Many threatened species, including emblematic species, have been actively conserved by communities through totem restrictions, hunting/harvest taboos, sacred groves, or use restrictions.

Why this target is important for IPLCs

Despite some successes in preventing the extinction of several species, GBO-4 reports that progress overall is extremely poor and it is unlikely that this target will be achieved by 2020 (see dashboard).[5] This is important for IPLCs because many threatened species can be found on their lands[2], and some of them have strong cultural and/or spiritual significance ("sacred species") or are very important for communities' wellbeing (e.g. medicinal plants). Thus in many cases they are actively conserved by communities.[125]

However, top-down initiatives to conserve threatened species can have negative impacts on communities, including their exclusion or eviction from traditional lands (see chapter on Target 11) and the criminalisation of traditional hunting/harvesting practices. The conservation of threatened large and/or dangerous mammals (such as tigers and elephants) can be particularly problematic due to their complex relationships with people[126] (see Box 12.1 for an example). For example in India attacks by the endangered Asian Elephant result in about 400 deaths each year. In contrast, humans kill around 100 elephants each year, and half of these deaths are linked to the defence of crops.[127] Compensation payments for crop damage, loss of livestock, injury or fatalities have been part of a widespread mitigation strategy to reduce the economic impacts of "problem species" but they do not always address all the impacts on communities' wellbeing, and are sometimes linked to increasing social inequity due to their high transaction costs.[128]

Summary of progress towards the target

Target Elements (by 2020)	Status
Extinction of known threatened species has been prevented	
The conservation status of those species most in decline has been improved and sustained.	

Communities can contribute many solutions to address human-wildlife conflicts, because many of them have a long history of living alongside the species concerned. For example, research in Sagala in Kenya showed that indigenous practices could be effective in mitigating human-wildlife conflicts and that integrating traditional knowledge with western science has the potential to improve the effectiveness of strategies for managing human-wildlife conflicts.[129]

African elephant in Maasai Mara National Reserve, Kenya. Courtesy Gina Hamilton

Box 12.1 **Are "conventional" conservation practices increasing human-wildlife conflicts while disenfranchising local communities?**

Daniel Ole Sapit, Maasai indigenous leader from Kenya

Protected areas set aside for conservation are premised on animals being confined to that area, but animals naturally do not understand whether a particular place or point is the end or the beginning of a protected area. Wildlife have migratory routes across recently converted agricultural lands and settlements, and in the process of migration, conflicts emerge between humans and wildlife. A typical example is the elephant, which is said to pass on memories of its migratory route to its offspring genetically. As a result, a herd will always use the same route, almost always at the same time of the year. We are now grappling with wildlife outside protected areas because that is where the animals go to breed and graze, especially during the dry seasons. This is despite the flow of revenue from conservation hardly trickling down to the communities around the protected areas, who have to bear the brunt of the impacts of the animals.

Contributions and experiences of IPLCs towards the target

Extinctions can directly affect the cultures and livelihoods of IPLCs, and amongst many IPLCs there is a strong desire to conserve threatened species. Sacred groves or other community-conserved areas are important habitats for many threatened species[4,125], and communities' conservation of these areas is an important contribution to achieving this target.

Also, communities are often the first to notice when a species is in decline and are able to implement urgent conservation actions through their customary governance institutions,[130] such as hunting and harvest taboos or other use restrictions. This section gives examples that illustrate these points.

By shifting from chemical to organic rice production and nurturing habitats for insects and other small creatures, local communities in several locations in Japan have facilitated the return of the threatened white stork to their environment. Courtesy Photo library of Toyooka City, Hyogo Prefecture.

Box 12.2 Traditional knowledge and customary sustainable practices to conserve the endangered red panda in Ilam, Nepal

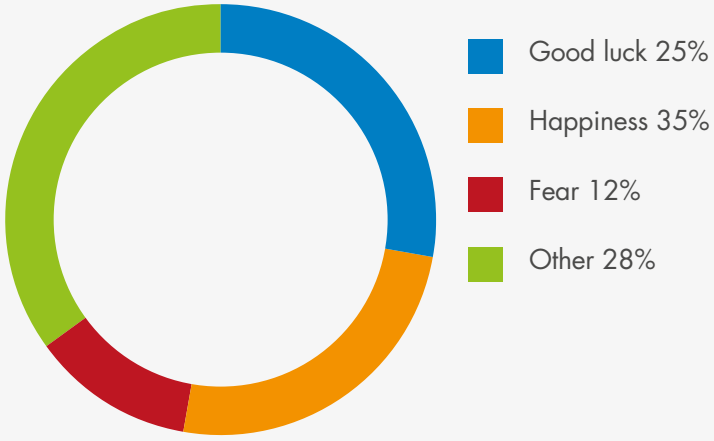
Kamal Kumar Rai, Indigenous Peoples' Society for Wetland Biodiversity Conservation, Nepal
(Photos courtesy of Krishna Bantawa and Finju)

The indigenous peoples of Ilam, East Nepal, include the Kirant (encompassing the Rai and Limbu peoples), Lepcha, Tamang, Sherpa, Sunuwar, Gurung, Magar and Thangmi. East Nepal is the historical domain of Kirant, with Kirant kingship running from 600 BC in Kathmandu. Kirant kings have ruled for over 1,000 years, using customary practices.

The indigenous peoples of Ilam are making important contributions towards conserving the endangered red panda (*Ailurus fulgens*) through their traditional knowledge and customary sustainable practices. Under the Nepal National Parks and Wildlife Conservation Act (1973), the red panda is recognised as a protected priority species, designated as vulnerable in 1994 and as endangered in 2004 because of habitat loss.[131] People do not hunt red pandas because religion and customary systems have prohibited it, even before they were known to be endangered.

> *"Tamang culture has a "Choho" traditional institution of Tamang, to help take care of the forest, red panda habitat, historical areas and resources; and the head Lama (Buddhist) plays a valuable role in decision-making for the use and protection of red panda habitats.*
>
> *Tamang community member*

Indigenous beliefs associated with the Red Panda

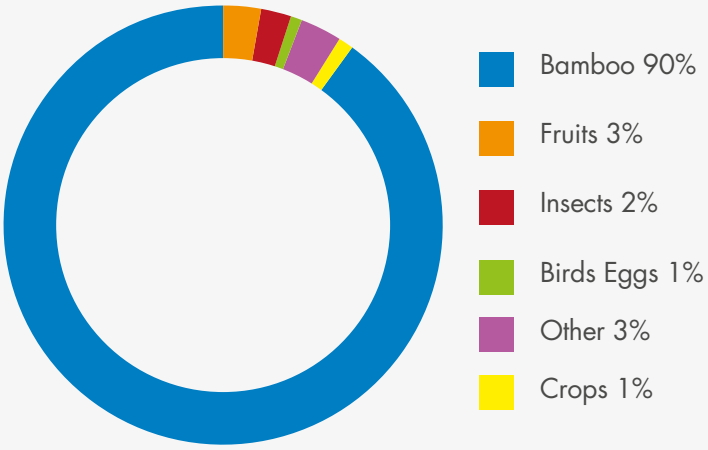


Courtesy Kamal Kumar Rai

Indigenous peoples know that red pandas in the wild rely mostly on bamboo for food (90%), followed by fruits (3%), insects (2%), crops (1%) and other sources (3%). Communities have observed that the existing bamboo forests in the area are experiencing poor growth. They are damaged by wildfire, drought and the disappearance of water sources in the boreal forest, and other disturbances such as over-collection of non-timber forest products, local development including road construction, and human encroachment. Consequently, the indigenous communities have increased actions to protect the bamboo forest ecosystem inside the boreal forest through controlling wild fires and restoring water sources.

Box 12.2 Continued...

Food for Red Panda



Courtesy Kamal Kumar Rai

As two community members explained:

> *We make a fire break line and check it for further burning. People keep a rotation to watch the fire and inform everyone to control the fire. They are also protecting water sources with planting and restoring natural ponds that can help to preserve the bamboo forest for red pandas.*

Traditional practices and institutions for conserving the red panda: the "*Kipatiya Pratha*" of the Kirant.

The *Kipatiya Pratha* is the customary system of the Kirant. It is a local authorised body which uses traditional governance practices for conservation and sustainable management, for the use of natural resources and for the protection of biodiversity and the habitats of red pandas.

Kirant priests (*Phedangba* and *Nuwagire*), elders, women and traditional healers play important roles in collective decision-making to declare the forest patches that should be protected, ensuring that water sources and bamboo forests provide a good habitat for red pandas. In the *Kipatiya Pratha*, the individual obeys the collective decision to care for the red panda's habitat (*Pudekudo ko Basthan*) and natural resources. If any member of the society tries to disobey the decision or misuse it, he or she will be punished. *Kipatiya Pratha* maintains a good governance system for red panda habitat conservation, controlling poaching, hunting, fire control, use of resources; and it has its own punishment tradition. If somebody acts in a way that disobeys tradition or hunts the red panda, then they call him or her into a meeting and inform the person not to do this, because it is important for society. If the person continues hunting or disobeying, or ignores the decision, then they will receive further punishment, such as a fine or becoming a social outcast (the person will not be allowed into any kinds of social functions). It is these social norms and values that create a good governance system.

This bird conservation area, an ICCA established by Sherpa villagers in Khumjung village, Sagarmatha (Mt Everest) National Park, protects ground-nesting pheasants and their nests from grazing, wood gathering, and stone gathering.
Courtesy Stan Stevens

Some other examples of community initiatives and contributions to conserve species are as follows:

- **White-eared pheasant (*Crossoptilon crossoptilon*), in Western Sichuan, China:** Because of its white colour, which is of spiritual significance in Buddhism, local communities consider it a sin to kill a white-eared pheasant. Much of its habitat is conserved in the form of sacred sites that are protected by nearby villages or Buddhist monasteries. Globally, 25% of all gamebird species (*Galliformes*) are threatened with extinction, but the IUCN status of the white-eared pheasant is currently "near threatened".[132]

- **Inuit "conservation hunting" of polar bears:** Inuit hunters play an important role in achieving sustainable management of polar bears in Canada. For example, they work with biologists to increase knowledge and understanding of polar bears through monitoring bear populations within their territories, and through the collection of samples and data from polar bear kills. Increasing the economic value of potentially dangerous species such as polar bears through hunting has been linked to low numbers of so-called "nuisance kills" of polar bears, and therefore it is known as "conservation hunting".[133] Communities allocate and enforce hunting quotas among both subsistence hunters and non-resident hunters. Increasingly, Inuit hunters are able to obtain greater economic returns from outfitting and guiding non-resident hunters than from their own subsistence hunting. Traditional values and conservation of local wildlife resources remain guiding principles for non-resident hunting.[133]

- **Torra Conservancy, Namibia:** Community conservancies are a vital link towards re-establishing thriving wildlife numbers outside state protected areas in Namibia, and ensuring the safe passage of migrating animals throughout the year. The Equator Prize winner Torra Conservancy has successfully brought about an improvement in the conservation status of endangered species such as the black rhino and Hartmann's mountain zebra. They did so through a wildlife guard system in which traditional elders conferred authority on Riemvasmaak community members to combat poaching and monitor endemic animals. At the same time a successful community-private sector partnership for ecotourism, quota-based hunting and live game sales created sustainable livelihood opportunities for local communities.[134]

- **The Kinabatangan Orangutan conservation project in Borneo and the Tree Kangaroo Conservation Program in Papua New Guinea** are other examples of species-focused community-based conservation.[135]

The Himalayan Monal (or Himalayan Impeyan pheasant), Nepal's national bird and a threatened and nationally protected species, thrives in the bird conservation area.
Courtesy Dibyendu Ash/https://creativecommons.org/licenses/by-sa/3.0/legalcode

Opportunities and recommended actions to enhance progress towards the target

- Conservation organisations and governments should increase engagement with traditional knowledge holders to close knowledge gaps concerning threatened species; increase effectiveness and efficiency of conservation actions, and better address human-wildlife conflicts.
- Conservation organisations and governments should increase training opportunities for IPLCs on the identification and monitoring of threatened species, including those on the IUCN Red List, and on the collection of GIS data and mapping.
- IPLCS should continue to raise awareness of the cultural and spiritual values of many threatened species and the importance of customary sustainable use practices for their conservation.
- Increased financial support should be provided for community-based monitoring and community conservation actions.

Key resource

Pungetti, G., Oviedo, G. and Hooke, D. (Eds.) (2012) *Sacred species and sites: Advances in biocultural conservation*. Cambridge University Press.

Local indigenous fisherfolks in Hormuz Island, Iran, carefully releasing an endangered green turtle (Chelonia mydas) caught in their fishing gear.
Courtesy Koosha Dab, Cenesta.

TARGET 13

Safeguarding genetic diversity

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.

Key message:

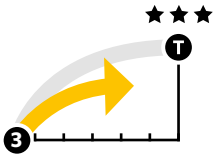
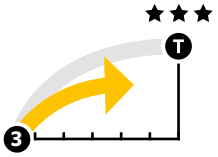
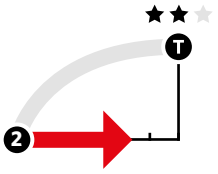
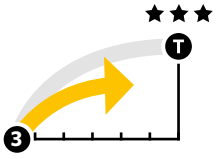
IPLCs, through their traditional agricultural practices and innovations, are helping to maintain the genetic diversity of wild relatives and of species with particular cultural and socio-economic values. In many cases this also provides important lessons for the wider implementation strategies for the protection of genetic diversity. Indigenous women play particularly important roles in the maintenance of genetic diversity, including by making key decisions about which seed varieties to maintain, propagate or discard. Maintenance of crop diversity on farms goes hand in hand with the fostering of livelihoods, benefits, and income generation from microenterprises.

Why this target is important for IPLCs

As is stated in GBO-4, genetic diversity is an important component of cultural heritage. In addition, genetic diversity of cultivated plants and domesticated animals underlies the livelihoods and food security of IPLCs around the world. However, as GBO-4 shows, progress towards this target has been insufficient overall, and it has been minimal in relation to maintaining the genetic diversity of wild relatives[xlvi].[5]

GBO-4 concludes that there is insufficient knowledge and data on the on-the-ground initiatives of local farmers and livestock keepers in relation to genetic diversity, in particular for species that have significant cultural or socio-economic value such as traditional medicines and non-timber forest products. It recommends promoting public policies and incentives to maintain local varieties of crops and indigenous breeds in food production systems, including through increased collaboration with IPLCs for the *in situ*[xlvii] maintenance of genetic diversity.[5] Thus it is indisputable that IPLCs have a central role to play in the achievement of this target and a strong interest in its attainment.

Summary of progress towards the target

Target Elements (by 2020)	Status
The genetic diversity of cultivated plants is maintained	
The genetic diversity of farmed and domesticated animals is maintained	
The genetic diversity of wild relatives is maintained	
The genetic diversity of socio-economically as well as culturally valuable species is maintained	*Insufficient data to evaluate this component*
Strategies have been developed and implemented for minimizing genetic erosion and safeguarding genetic diversity	

xlvi *Crop wild relatives (CWR) are wild plant species that are genetically related to cultivated crops. Untended by humans, they continue to evolve in the wild, developing traits – such as drought tolerance or pest resistance – that farmers and breeders can cross with domesticated crops to produce new varieties. CWR have been used to improve the yields and nutritional quality of crops since the beginnings of agriculture.*[221]

xlvii In situ *conservation is conservation that takes place on the ground, where the species or race concerned occurred naturally.*

Contributions and experiences of IPLCs towards the target

Around the globe, IPLCs are contributing to the maintenance of genetic diversity through their agricultural practices (for one example, see Box 13.1).

Box 13.1 The story of the Potato Park

Walter Quispe Huilcca, Paru-Paru Community, Potato park, Cusco, Peru; Quechua farmer and Coordinator of the Potato Park's Participatory Plant Breeding Program

We are potato farmers and *papa arariwa* (guardians of the native potato), passionate in the conservation of our native potato diversity now and for future generations. I live in the Community of Paru Paru. My community is one of the six that make up the Potato Park, established in the year 2000 in collaboration with *Asociación* ANDES.[xlviii] Our home is near Pisaq, Cusco, in the heart of the Sacred Valley of the Incas.

The Potato Park is an Indigenous Biocultural Territory. We call it "*Papa Ayllu*" because it is modelled on the Andean *Ayllu* system[xlix], which is a holistic community where humans (and domesticated species), the wild, and the sacred, live together in harmonious and reciprocal co-existence. This model is key for maintaining the habitats and the evolutionary processes that have created the potato germplasm. The *Ayllu* model helps us to maintain potato genetic diversity along with other domesticated and wild species and the diverse habitats where they thrive. In turn this helps to maintain healthy wildlife and pollinators, and we have better decomposition of organic matter and soil fertility.

My land, Peru, is a territory blessed with diversity. Our mountains have marked variations in elevation and microclimates. The efforts of our ancestors have made this land one of the world's most important centres of plant domestication and diversification. We have adapted and farmed diverse crops in all altitudes[l]. For us, however, the potato is the most important food crop. More than 2,000 different varieties are known to our peoples in Southern Peru alone. At the outset of the Potato Park initiative we collected 778 varieties from our own and surrounding communities; later we added 85 varieties through community to community exchanges and donations. The Park now has a total collection of 1,430 potato cultivars, 410 of which were incorporated through a Repatriation Agreement signed with the International Potato Center (CIP) in 2004. This agreement led to the restitution of the diversity of the Park and also to recognition of indigenous peoples' rights relevant to the conservation and sustainable use of biodiversity.

Other crops in the collection include unique Andean tubers and grains. The Park harbours six of the nine existing cultivated potato species, two semi-cultivated species and six wild relatives. We farmers recognise and name all these potatoes as distinct units. I myself farm around 150 cultivars of native potato in my community, all different in shape, colour, texture and flavour. They are beautiful. My brothers and sisters do the same in their communities. Our indigenous knowledge, particularly of the women, is responsible for the high number of varieties we have in the pool of species used in our fields and kitchens. Women ultimately make the decisions about what variety to maintain, incorporate or discard from the repertoire of varieties we keep in our households.

Biocultural heritage improves our food security, our local economy, the resilience of the agro-ecosystems and thus the wellbeing of the Potato Park communities. Diversity helps us to continue to adapt our potato varieties to the heterogeneous and fast changing environment and makes them less vulnerable to pests, diseases and severe weather conditions that we face in the Andes.

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xlviii *Association for Nature and Sustainable Development (ANDES) strives towards sustainable indigenous communities in the Peruvian Andes by building local capacity for the protection of biocultural resources, knowledge and rights.*

xlix *The Ayllu's three elements,* auqi *(the sacred),* sallqa *(the wild) and* runa *(the domesticated) are bound together through reciprocal relationships known as* ayni. Ayllu *and* ayni *celebrate ecological systems that support agricultural activity.*

l *International Treaty on Plant Genetic Resources for Food and Agriculture*

Box 13.1 Continued...

In managing this great diversity, we have merged *in-situ* and *ex-situ* conservation strategies. Our *in-situ* conservation approach combines community seed banks (which are probably more dynamic than conventional gene banks because they are actively used by all community members) with the conservation of wild relatives within genetic reserves[li], and the continued cultivation of potato genetic resources in our indigenous farms. This approach has minimised genetic erosion as well as generating endogenous plans[lii] based on traditional knowledge, which ensure that genetic variation is secure for the future.

The repatriation process has fostered a dynamic horizontal partnership with other scientists, creating exemplary collaborative partnerships based on written agreements and mutual respect with research centres, including national and international universities. These collaborations focus on complementarities and on producing new ideas and innovations from the cross-fertilisation of indigenous knowledge and science that benefits our communities.

The Potato Park is managed collectively by a decision-making body called the Association of Communities of the Potato Park. This leadership is an inter-community institution working for the collective. Local institutions function and coordinate with the leadership at various different levels of governance. These institutions have been effective in fostering local innovations based on their deep knowledge of the local environment and the application of customary rules, norms and protocols. Livelihood and income generation from crop diversity has been achieved by fostering local microenterprises, and the generation of benefits through these microenterprises has gone hand in hand with the promotion of the maintenance of crop diversity on farms. Government support, through the Peruvian Biodiversity and Biosafety Unit of the Environment Ministry, has been essential for both *ex-situ* and *in-situ* conservation at the Potato Park.[136]

Community-led research in action in the Potato Park. Courtesy Asociación ANDES

Many communities also contribute to reversing declines in the genetic diversity of traditional or native crops through programmes for the recovery of these crops, or through the restoration of the ecosystems on which their cultivation depends. Examples of crop recovery programmes include the following:

- The Puruha people's recovery of native plants in Ecuador.
- The recovery of local banana varieties and related knowledge and the creation of seed banks for local banana varieties in Sri Lanka.
- The recovery of cocoa plants in Panama. Cocoa has special ritual and cultural values for the Guna people of Panama, and it is used for ceremonies, medicine, and food. According to the Guna worldview, cocoa was one of the first plants the creator sent to earth, and has great powers. The cocoa plant has been decreasing in abundance due to diseases and pests, and the Guna people are setting up an experimental recovery and cultivation programme for cocoa seed in community-designated sacred sites called *Galus*.[liii]

The role of women

In many indigenous and local communities, women act as collectors, savers and managers of seeds. For example in the department of Huehuetenango in Guatemala, Maya women play a crucial role in the selection of different types of maize (species and sub-species), both as material to be sown and as grain to be used in food. The women involved in this work continue to transmit their knowledge of the uses and culinary qualities of specific genetic materials.[liv]

li *Genetic Reserve Conservation is defined as "*the location, management and monitoring of genetic diversity in natural wild populations within defined areas designated for active, long-term conservation*". (Maxted et al. 1997, p340)* [222]

lii *"Endogenous development is based on local peoples' own criteria of development, and takes into account the material, social and spiritual well-being of peoples".* [223,224]

liii *Based on information shared by Yolanda Téran (Ecuador), Onel Masardule (FPCI Panama) and Nimal Hewanila (Niemanee Development Foundation, Sri Lanka).*

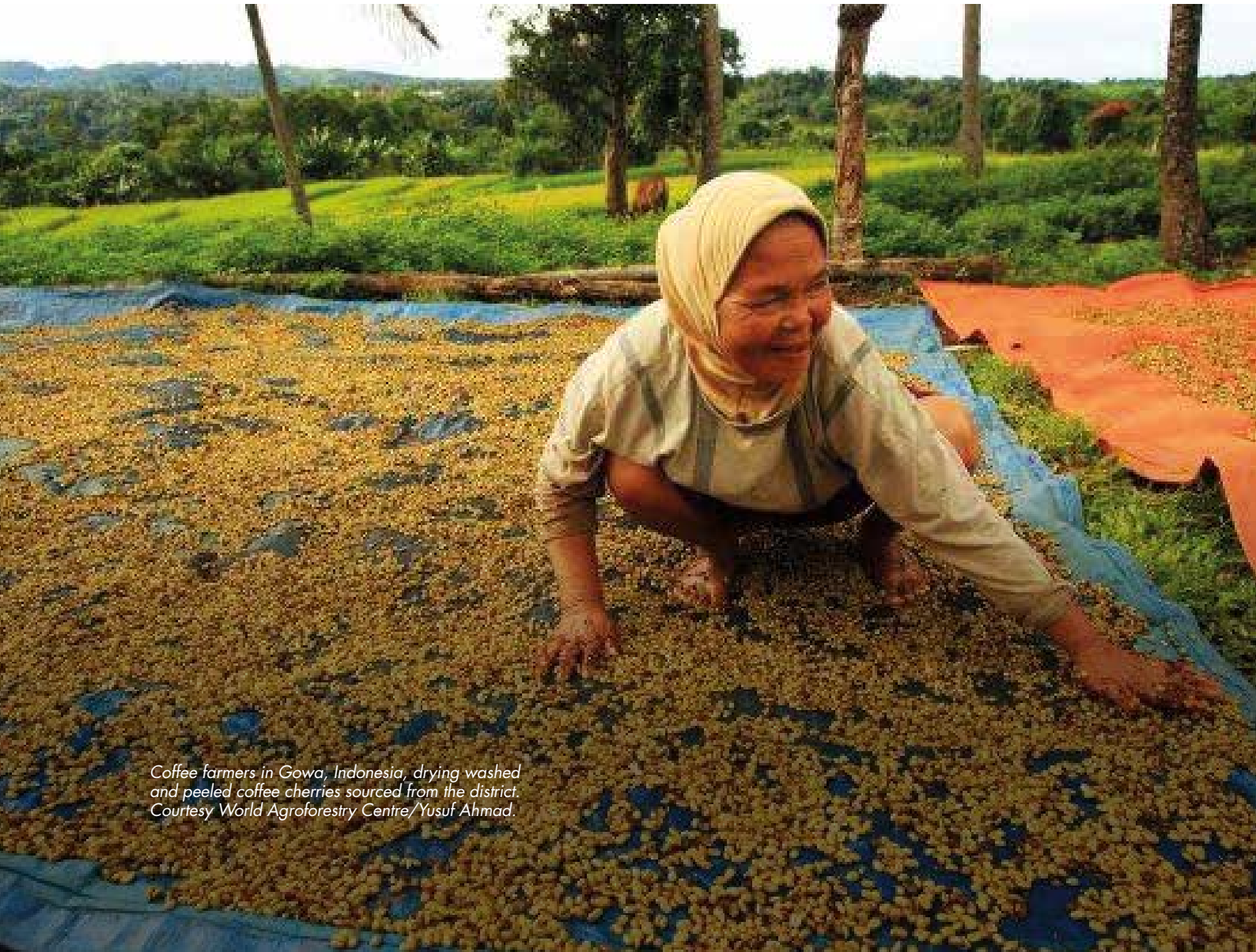
liv *See also AIPP 2014, p2* [225]

Courtesy Potato park centre economic collective.
Credit: © Khanh Tran-Thanh

Opportunities and recommended actions to enhance progress towards the target

One existing initiative for the recognition and restoration of traditional agriculture is the FAO's Globally Important Agricultural Heritage Systems Project[80] (GIAHS: for a description see Target 7). However, much more needs to be done. The following actions are recommended:

- State Ministries of Agriculture should ensure greater involvement of IPLCs in discussions on national food production, and on national and regional strategies for food security and biodiversity preservation.
- Governments and NGOs should enhance on-farm *in-situ* conservation by IPLCs through support for community seed banks and exchange networks; livestock fairs and other indigenous and community-run systems, and local microenterprises and innovations, with a special focus on women's contributions to agricultural systems and on the role of traditional knowledge.
- Governments should promote awareness and education about the role of IPLCs in agricultural biodiversity.
- Governments should work to enhance the knowledge base on genetic diversity of socio-economically and culturally valuable species, including through facilitated communication and knowledge-sharing between IPLCs, policy-makers, and scientists/researchers, and through the use of community-based data.



Coffee farmers in Gowa, Indonesia, drying washed and peeled coffee cherries sourced from the district. Courtesy World Agroforestry Centre/Yusuf Ahmad.

A sample of traditional seeds used in rotational farming in Mae Umphai, Thailand. Courtesy Maurizio Farhan Ferrari, FPP

Key resources

The Southeast Asia Regional Initiatives for Community Empowerment (SEARICE). http://searice.org.ph/

Rucha Chitnis (2016). In Photos: The Seed-Saving Farmers Who Pass Down Their Land to Their Daughters. *YES! Magazine*. http://www.yesmagazine.org/people-power/in-photos-the-seed-saving-farmers-who-pass-down-land-to-their-daughters-20160108.

FAO (2007). Sustainable Agriculture and Rural Development (SARD). Policy Brief 16.

Parque de la Papa (Potato Park). http://www.parquedelapapa.org/esp/03parke_01.html

GIAHS. Globally Important Agricultural Heritage Systems. http://www.fao.org/giahs/giahs-home/en/

TARGET 14

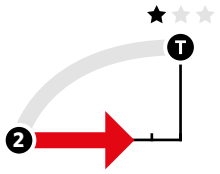
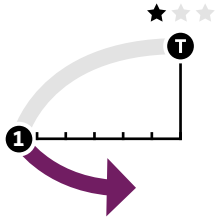
Ecosystem services

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.

Key message:

IPLCs understand "ecosystems and habitats that provide essential services" as their customary lands, territories, waters and resources, which provide for their multiple livelihoods and spiritual and cultural needs and also provide ecosystem services not only for themselves but also for others. However, these territories are often exploited unsustainably to capture services and products for others, causing loss and degradation of resources with negative impacts on IPLCs. Progress towards this target will be greatly facilitated if issues related to the customary rights of IPLCs over their lands, waters, and resources are addressed. IPLCs around the world are working to safeguard, conserve and restore their territories and resources, especially through community mapping and development of plans to care for their territories, and greater recognition and support for these efforts will accelerate progress on this target.

Summary of progress towards the target

Target Elements (by 2020)	Status
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.	

Why this target is important for IPLCs

The concept of ecosystem services is specific to western cultures, but from the perspective of IPLCs concern for ecosystem services is equivalent to concern for their customary lands, territories and resources, where their multiple inter-connected needs are served, and where their institutions and social systems are closely linked to natural systems.[137] Therefore this target is vitally important for IPLCs. However GBO-4 reported that habitats important for ecosystem services continue to be lost and degraded and that there is little sign of progress towards meeting this target. More specifically and worryingly, measures related to the needs of women, IPLCs and the poor and vulnerable appear to be moving in the wrong direction.[5]

Recognition of customary tenure rights, and in particular, of access to and control of resources, reduces deforestation (see Target 5) and is also critical for sustainable livelihoods and for reducing poverty and vulnerability, especially now that many customary territories are shared with other populations.[6,[lv]] The FAO sub-programme on access to natural resources, under the Livelihood Support Programme that is aimed at integrating sustainable livelihoods principles in FAO's work, states that: "*access of the poor to natural assets is essential for sustainable poverty reduction. The livelihoods of rural people with limited or no access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating assets, and recuperating after shocks or misfortunes*".[138]

lv The new post-2015 Sustainable Development Goals include an indicator consisting of the percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) the percentage with documented or recognised evidence of tenure, and (ii) the percentage who perceive their rights are recognised and protected. For more information, including on rationale, definition, disaggregation, see http://indicators.report/indicators/i-5/ [226]

Contributions and experiences of IPLCs towards the target

Community mapping and land use plans

IPLCs around the world are working to secure their lands, territories and resources through community cultural mapping and action research, and are also developing plans to care for their lands and resources. Some examples are as follows:

- The North-west Arctic Borough's Subsistence Mapping Project in Rural Alaska will produce an atlas documenting subsistence-use areas where people hunt, fish and gather by season. The atlas will also include important ecological areas, such as areas where animals feed, breed, raise young and migrate. The atlas will provide a tool to assist decision-makers in balancing conservation, community needs and economic development, particularly in the light of the growing effects of climate change, increased shipping traffic in the area and a wide array of proposed developments.[139]

> *Eco-cultural mapping is a community-driven process that can make joint problem definition and analysis easier. Also, maps manifest the knowledge and understanding of territory and enable community-based ecosystems assessments, and enable articulation of a set of rights and responsibilities for communities which are reflected in the actions. Eco-cultural calendars support community research to revive socio-ecological systems as they embrace the whole universe. The eco-cultural calendars support plans towards revival of socio-ecological systems, and highlight cross-gender collaboration areas. The eco-cultural calendars are very important for the revival of culture, rituals, and cosmovision.*

Source: Gathuru Mburu of the Institute for Culture and Ecology in Kenya[140]

- Communities around the Kathita River in the Tharaka district of Kenya initiated the production of eco-cultural maps and seasonal eco-cultural calendars, focusing on the practical and sacred role of the Kathita River in the lives of the communities living alongside it. One of the objectives of this initiative was to present local knowledge and experiences related to the governance of the river in the communities' own terms, and to support initial dialogues between different knowledge systems. The participation process involved different clans who have different management responsibilities; the National Museum, which documented stories of the river; and lawyers and social scientists, who documented traditional ecological law relevant for the governance of the river. An important outcome has been the development of present and future maps of the river, which can be added to national data. The river may be gazetted as a sacred river in the future.[140]

- Box 14.1 details an initiative of the Wapichan people in Guyana, who have developed a detailed territorial management plan and a community monitoring system to track external pressures, ecosystem health and land use change, and are working towards legal recognition of their territory.

- The Dehcho First Nations' Land Use Plan in Canada and the Misak people's "*Plan de Vida*" (Plan of Life) in Colombia are additional examples (see Target 4).

Eco-cultural mapping for mobilisation of knowledge to recover the Kathita River ecosystem. Credit: Maurizio Farhan Ferrari, FPP

Box 14.1 Wapichan people's plan to secure and care for their lands, Guyana

South Central Peoples' Development Association (SCPDA)[lvi]

The Wapichan have organised more than 80 community consultations, workshops and public meetings in order to draw up and agree their innovative territorial plan. Courtesy SCPDA

The Wapichan people live in the South Rupununi District of Guyana. The "*Wapichan wiizi*" (territory) is home to many animals, reptiles, plants, insects, birds, fishes and other water creatures, many of which are globally rare or endangered.[lvii] The Wapichan territory contains many important cultural heritage sites for the communities, where stone axes, arrow heads, beads, pottery and rock carvings and burial grounds are found. The Wapichan have compiled a plan for the sustainable community-based use and development of their ancestral territory, which covers about 2.8 million ha, for the benefit of present and future generations.[141] The plan describes the multiple services, values and meanings that the territory provides. For instance, respect for spirit beings and their homes is essential for the wellbeing of the communities and the health and abundance of the fishes and game. The territorial management plan sets out common principles, goals, and customary laws on the responsible use of the land, forest, mountain, grassland and wetland ecosystems. It includes more than one hundred inter-community agreements on collective actions for sustainable land use, customary sharing of resources, community development and livelihood initiatives. It also details hundreds of local wildlife sites for community protection, including proposals to establish an extensive 1.4 million ha Wapichan Conserved Forest covering old-growth rainforest in the eastern part of the territory.

Securing the Wapichan territory by obtaining its legal recognition is a major goal for the Wapichan and a prerequisite for fully realising and implementing their plans. The existing land titles are fragmented and do not cover the full extent of the areas traditionally used and occupied by the Wapichan people. Further the Wapichan territory is facing serious external pressures from illegal mining, cattle rustling, logging and encroachment from commercial hunting. To address these, the Wapichan have developed a community-based system to detect and document such pressures as well as to monitor ecosystem health (for example water quality) and land use change.[142,143]

The Wapichan have initiated active dialogue with relevant government departments, agencies and commissions to explain their plans for continued community-based care of their ancestral areas. The Wapichan use their own maps and photographic and geo-referenced information, and data on traditional use of the land, to support their land claims and to point out where the tenure gaps are. These initiatives have led to formal talks between the communities and the government about actions to secure their land and forests legally, and to prevent and suspend industrial logging and mining concessions on Wapichan land.

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lvi *SCPDA is a community-based development organisation with a mandate to reduce poverty and to empower and uplift the lives of the people of South and South Central Rupununi, Guyana. SCPDA is dedicated to securing and sustainably managing Wapichan traditional lands in Guyana and improving the livelihoods of the people in these communities.*

lvii *E.g.* kitanaaru *(jaguar),* saaro *(giant river otter), wichaa waru (bush dog), crested eagle,* kawanaru *(cock-of-the-rock),* udaru'o kokoi *(harpy eagle) and* dyuwudan uzu *(red siskin)*

Livestock keepers' contributions and initiatives

Livestock keeping is significant to the livelihoods of many rural households, and also to the sustainable use of marginal areas. Large parts of the globe such as drylands, mountainous and high- altitude zones can be used for food production only in the form of livestock that are adapted to local conditions. Pastoralists and smallholder farmers have developed an array of strategies for the sustainable use of these areas, including sophisticated herd movements and grazing strategies. Agro-ecosystem services provided by livestock keepers and their animals include the creation of mosaic landscapes and mini-habitats that sustain biodiversity, connection of ecosystems by means of the transportation of seeds, improvement of the water-holding capacity of grassland, reduction in the risk of forest fires, restoration and maintenance of soil fertility from manure, and substitution for the grazing activities of large wild herbivores.[144]

Many livestock keepers are highly mobile. Among their key needs are the need for secure access to grazing areas and water, and the need for support for their mobile lifestyles. For example a major problem for nomadic pastoralists in Iran is the destruction of the migratory routes they use with their cattle. Sedentarisation, the nationalisation and privatisation of land, and invasion by settled farmers are posing challenges to their traditional lifestyle. However, nomadic tribes in Iran are taking initiatives to create "bio-cultural indigenous territories" or ICCAs (see also Target 11). They are mapping customary boundaries and restoring customary governance systems. For example the Confederation of the Shahsevan tribe has gained government recognition following registration with the Iranian Ministry of Justice. They are taking further steps towards recognition of their territory as a basis for participatory planning.[145,146]

Migratory camp of the indigenous Qashqai Tribal Confederacy in the Zagros Mountains in southern Iran. Courtesy Cenesta

Wapichan community mapping employed GPS technology to map land use and forest sites. Courtesy Tom Griffiths, FPP

Opportunities and recommended actions to enhance progress towards the target

- Governments and relevant organisations should continue to support and build on the work of existing initiatives that address issues of community land tenure and promote recognition of community land rights, including:
  - The World Resources Institute (WRI) portal[147];
  - The forest tenure database of the Rights and Resources Initiative (RRI[lviii];
  - The Global Call to Action on Indigenous and Community Land Rights[50] (see also Target 18);
  - The FAO Voluntary Guidelines on the Governance of Tenure of Land, Forests and Agriculture[148];
  - The Satoyama Initiative. The Initiative is a process that has taken an inclusive approach and offers useful tools to better understand and support "socio-ecological production landscapes and seascapes".[149]
- All actors should strive for greater dialogue on cultural differences in understandings of "ecosystems/habitats that are essential for human wellbeing".
- Governments and relevant actors should provide greater support for relevant community initiatives, such as those for mapping and documentation and proposals for restoration and safeguarding of their lands, territories and resources.
- Governments should give legal recognition to customary tenure of IPLCs over their territories, lands, waters and resources.

Key resources

Pearce, F. (2015). "Where they stand". Details how Wapichan people in South America use modern technologies in their struggle to secure land rights. Forest Peoples Programme.

Pearce, F. (2016). Common Ground. Securing Land Rights and Safeguarding the Earth. Oxfam, International Land Coalition, Rights and Resources Initiative. Oxford: Oxfam.

Satoyama Initiative (IPSI). www.satoyama-initiative.org

lviii *RRI continuously updates and expands the data from both methodologies. RRI's forest tenure database is now accessible through the Tenure Data Tool (http://rightsandresources.org/en/resources/tenure-data/tenure-data-tool/#.V_tMcST22Uk). This interactive tool makes it easy to compare changes in legal forest ownership from 2002 to 2013 between countries, regions, and lower- and middle-income countries.*[227]

TARGET

Ecosystem restoration and resilience

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% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Key message:

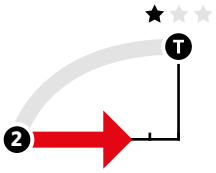
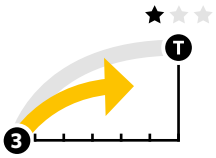
Through their natural resource management systems, IPLCs have made major contributions towards conserving carbon stocks and increasing socio-ecological resilience of ecosystems to climate change. Traditional knowledge can increase the effectiveness of ecosystem restoration and carbon sequestration. Supporting relevant IPLC initiatives not only contributes to the achievement of this target but can also provide multiple benefits (including livelihood benefits) to communities.

Why this target is important for IPLCs

GBO-4 concluded that some progress has been made towards restoring degraded ecosystems. However, there continues to be a net loss of forests, a major global carbon stock.[5] This is of immense concern to IPLCs: environmental degradation and the failure to restore degraded areas on or near IPLC lands can threaten the very lives of those who obtain water and food directly from the surrounding ecosystems.

Top-down initiatives for carbon sequestration or strict forest protection that limit communities' access to and use of their lands can pose a significant threat to communities' wellbeing, as well as acting against ecosystem resilience. IPLCs' capacity to adapt to climate change is reliant on maintaining a diversity of livelihoods and resilient ecosystems[150] (see also Target 10), and in turn, resilient ecosystems are often reliant on resilient communities.[151,152] Therefore a holistic approach is needed to ecosystem restoration and resilience, encompassing all elements of complex socio-ecological systems.

Summary of progress towards the target

Target Elements (by 2020)	Status
Ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced through conservation and restoration	
At least 15% of degraded ecosystems are restored, contributing to climate change mitigation and adaptation, and to combating desertification	

Contributions and experiences of IPLCs towards the target

Through their traditional knowledge and natural resource management systems, IPLCs are making important contributions to the enhancement of ecosystem resilience, to ecosystem restoration and to carbon sequestration. This section illustrates some of these contributions.

Enhancing ecosystem resilience through IPLCs' traditional knowledge and resource management systems

Socio-ecological resilience can be enhanced through strengthening traditional strategies for buffering against environmental variability. For example, many IPLCs vary the diversity of crops and the makeup of livestock herds in response to climatic variation, and reserve the use of certain pastures or fallows for years when conditions are extreme.[111] With increasing understanding of complex system dynamics, several of these practices are now being rediscovered by scientists[153] and can inform wider practices.

Around the world, IPLCs are also increasing climate change resilience at various scales through their management of biodiversity:

- In Rajasthan, India, the degradation of sacred groves and associated water management schemes has severely reduced water availability. A local initiative started two decades ago with the aim of reinstating traditional rainwater-harvesting systems in the Alwar district of Rajasthan, and has catalysed the rebuilding of thousands of small-scale irrigation systems. This has contributed to improved water availability for irrigation and to watershed restoration at the landscape scale. These actions have helped the community and the ecosystem to withstand recurrent drought and other stresses.[154]
- In Ethiopia, communities of the Bale Mountains, Sheka forest, Foata Mountain Complex and Wechecha Mountain Complex have been using participatory mapping to mobilise knowledge related to their territories and lands in order to strengthen socio-ecological resilience and better understand environmental change. Creating eco-cultural maps of their lands has not only served communities as a basis for revitalising traditional ecological knowledge and facilitating intergenerational learning between elders and youth, but has also reaffirmed connectedness between people and land, and has led to plans for rehabilitating degraded ecosystems. Thus social cohesion has been strengthened around a common purpose, and the communities' resilience and capacity to respond to environmental change have been improved.[155,156]
- Box 15.1 gives an example of community-based resilience mapping and adaptation practices from Bangladesh.
- More information on and examples of community-based adaptation to climate change can be found under Target 10.

Traditional crops from rotational farming contribute to both environmental and IPLCs' resilience

Box 15.1 Community-based vulnerability and resilience mapping and adaptation practices in the mangrove forests of the Sundarbans, Bangladesh

Unnayan Onneshan[157] *(an NGO working in close collaboration with traditional resources users)*

The communities around the Sundarbans are continuously struggling to sustain their livelihoods. Most of the community members are entirely dependent on the Sundarbans' mangrove ecosystem but forest degradation (caused by overwhelming pressure on its resources), recurring cyclones[158], salinity intrusion, floods and other factors are contributing to increased vulnerability of the traditional resource users. With the support of the NGO *Unnayan Onneshan*, a local research team and the communities worked together to identify areas of vulnerability of traditional resource users and to map the current and potential threats. Elders and experienced honey collectors, fishermen, and collectors of *golpata* (Nypa palm fronds) collaborated to point out the areas that are most vulnerable to flooding and other threats. Resource collection areas were grouped into three zones: a green zone where resources are abundant, a blue zone where resources are decreasing, and a red zone where resources have decreased considerably. Factors were also identified relating to the drivers of resource degradation. The research data gathered were used to prepare vulnerability maps to indicate which areas need special conservation attention and which areas can be used for resource collection (and to what extent). These maps are used for advocacy with the forest departments, who often have a different view on the vulnerable areas and therefore implement inappropriate action.

The same research initiative also investigated community-based adaptations and listed their main features, limitations and opportunities. The study documented 47 adaptation practices that respond to livelihood and water scarcity and structural scarcity. The practices enhanced resilience to tropical cyclones, storm surges and salinity intrusion. For example, communities affected by natural disasters and climate change in coastal areas in Khulna, Satkhira and Bagerhat districts have attempted to cultivate mangrove species in swampy lands with brackish water, which are suffering from increased salinity and have become unproductive for food crop production. In their community-based mangrove forestry practices, which combine traditional knowledge and innovation, mangrove species are grown alongside production of fish, ducks and vegetables, leading to reduced pressure on the Sundarbans while also securing livelihoods through the generation of multiple incomes. Following small-scale advocacy programmes at the local level to popularise this agro-silvo-aquaculture model, many *Bawalis* (traditional woodcutters) have started similar practices in their private or leased land and have been able to improve their livelihood conditions.

Agro-silvo-aquaculture in villages adjoining the Sundarbans. Courtesy Unnayan Onneshan

Planting Nypa palms after hydrological restoration by a community-based ecological mangrove restoration (CBEMR) team, Tale Nok Village, Ranong, Thailand. Courtesy Mangrove Action Project - Asia Office

The role of traditional knowledge in ecosystem restoration

Traditional knowledge can provide many contributions to ecological restoration, including through the construction of reference ecosystems (particularly when historical information is not available)[lix]; input into species and site selection for restoration activities; knowledge of historical land management practices; input into management of invasive species, and post-restoration monitoring. A recent review of the applications of traditional knowledge in ecological restoration found that incorporating traditional knowledge not only contributes to strong partnership-building for the successful implementation of restoration projects, but also increases their ecological viability, social acceptability and economic feasibility.[159]

A concrete example of this can be found in Thailand, where it has been recognised that the Karen and Lawa's traditional knowledge of swidden cultivation and their deep understanding of fallow dynamics can inform and increase the effectiveness of national plans for assisted natural regeneration of degraded areas.[160]

Communities' contributions towards enhancing carbon storage

Increased legal recognition and government support for community forest tenure enhances carbon storage benefits by enabling communities to exclude loggers, extractive companies, and settlers from destroying their forests and releasing carbon into the atmosphere. It has also been shown that communities restrict their consumption of forest products when they own forest commons, thereby increasing carbon storage.[161–163] In addition, there is evidence that rotational farming can be a very effective way of enhancing carbon sequestration[76,164] (for an example, see Box 15.2). Many other forms of forest protection and sustainable forest use by IPLCs that contribute to carbon sequestration are described elsewhere in this report (see particularly Targets 3, 4, 5, 7, 11, 14, 18 and 19).

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lix The construction of reference ecosystems is a standard approach to ecosystem reconstruction and involves identifying intact ecosystems that then act as models for restoration of other sites. See p. 13 in van Andel and Aronson (2012).[228]

Box 15.2 Community-based documentation of positive contributions of traditional rotational farming to carbon sequestration and ecosystem resilience, Thailand

Prasert Trakansuphakon, *Indigenous Knowledge and Peoples network (IKAP)*

The Indigenous Knowledge and Peoples network (IKAP), a regional network of indigenous communities throughout mainland montane South-east Asia, and the Inter Mountain Peoples' Education and Culture in Thailand Association (IMPECT), a network of indigenous peoples in northern Thailand, have carried out detailed research during the past two decades in three areas in Chiang Mai province where rotational farming is practised. Rotational farming is an agroforestry practice where a selected patch of land is cleared and the vegetation is dried and then carefully burned. The land is then cultivated and, after harvesting, left fallow for a long period (generally seven to ten years) to regenerate. This practice is based on deep cultural and spiritual relationships between the people and the environment and follows many customary rules and regulations. The research done by IKAP and IMPECT involved community monitoring of Karen farming areas in Ban Mae Lan Kham[164] and Hin Lad Nai[165] using a stock-based approach to analyse above-ground carbon. The net carbon storage from fallow fields covering 236 hectares that were left to recover for up to ten years accounted for 17,348 tonnes of carbon, while CO^2 emissions from the burning of fields amounted to only 480 tonnes of carbon. Thus the overall effect of rotational farming was a reduction in carbon emissions.

Courtesy Maurizio Farhan Ferrari,FPP

The research also documented a large number of edible plant species that grow naturally or are planted in each successive year during the seven to ten year fallow period, all of which contribute significantly to food security and sustainable livelihoods. In addition, various wild animal species were attracted to the fallow plots for food. Overall the research concluded that rotational farming stores much more carbon than it emits and contributes to sustainable livelihoods, food security, the resilience of agroforestry systems and increased biodiversity.[166]

The research led to a change in government and media perspectives on rotational farming. In 2010 the Thai Government passed a Cabinet Resolution for the Revitalisation of the Karen Way of Life, thereby providing policy support for the maintenance and revitalisation of these important customary practices in northern Thailand.

Large tracts of wetlands across the tropics have been converted to unsustainable shrimp farming during the past three decades. Affected local communities have been requesting action to stop the expansion of the industry in order to protect their livelihoods and secure the vital ecological services, including carbon sequestration and climate change mitigation and adaptation, provided by these coastal ecosystems. Photos by Jorge Varela / Courtesy Mangrove Action Project.

Opportunities and recommended actions to enhance progress towards the target

Governments and relevant organisations should:

- Ensure that strategies for carbon sequestration and restoration do not curtail communities' access to and sustainable use of biodiversity.
- Increase support for traditional practices that contribute to ecosystem resilience, restoration of degraded ecosystems and carbon sequestration, in order to enhance the effectiveness of national strategies for mitigating climate change.
- Support IPLCs' actions to identify opportunities and priorities for restoration and to undertake ecosystem restoration, which can also provide important livelihood benefits to IPLCs.
- Support IPLCs' networking and sharing of experiences and information relevant to ecosystem restoration, resilience and carbon storage.

Key resources

Uprety, Y., Asselin, H., Bergeron, Y., Doyon, F. and Boucher, J. (2012). Contribution of traditional knowledge to ecological restoration : Practices and applications. *Ecoscience* 19(3), 225–237.

Trakansuphakon, P. (2015). Changing strategies of shifting cultivators to match a changing climate. Ch. 17 (pp. 335-356) in Cairns, M.F. (ed)., *Shifting cultivation and environmental change: Indigenous people, agriculture and forest conservation*. Earthscan / Routledge.

TARGET

16

Access to and sharing benefits from genetic resources

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.

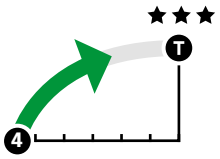
Key message:

The successful implementation of the Nagoya Protocol can provide opportunities for the recognition of traditional knowledge and the provision of a range of benefits for IPLCs, including fair compensation. However, positive outcomes require full recognition of IPLC rights as well as extensive capacity-building, guidance on free, prior and informed consent (FPIC), education, and provision of financial and legal resources in order to ensure the effective participation of IPLCs. Experiences from early implementation of the Protocol provide important lessons to enhance progress towards meeting this target.

Why this target is important for IPLCs

The Nagoya Protocol, which entered into force in October 2014[167], is a binding international framework that affirms the rights of IPLCs in relation to access to genetic resources and related traditional knowledge. It has implications for benefit-sharing, the recognition of customary law and local governance, and respect for free, prior and informed consent.[168] The Nagoya Protocol is still at an early stage of implementation and a variety of compliance issues remain to be addressed.

Summary of progress towards the target

Target Elements (by 2020)	Status
The Nagoya Protocol is in force	
The Nagoya Protocol is operational, consistent with national legislation.	

Genetic resources and traditional knowledge are recognised as interrelated and inseparable in the Nagoya Protocol.

Contributions and experiences of IPLCs towards the target

IPLCs, including the Khoi-San in South Africa, the Guna in Panama and some indigenous groups in Peru, have already begun to use the Nagoya Protocol for the recognition of their traditional knowledge associated with genetic resources. For example:

- The National Khoi-San Council (NKC) mounted a legal challenge related to commercial production of rooibos and honeybush tea, which was based on their traditional knowledge (see Box 16.1).[169]
- Some communities have developed Biocultural Protocols to help them implement the Protocol. Box 16.2 describes this process for the Potato Park in Peru.

Box 16.1 Rooibos tea and access and benefit-sharing for the Khoi-San, South Africa

Cecil Le Fleur, Chairperson of the National Khoi and San Council[lx] and Lesle Jansen, lawyer with Natural Justice

Rooibos and Honeybush are two South African plants that are used as commercial commodities by big companies for pharmaceutical and cosmetic purposes, supplying a huge local and international rooibos tea industry.[lxi] However they have both been used historically by the Khoi-San peoples of South Africa: for livelihoods, for medicinal, food and health purposes, for skin care and in other ways. In spite of this, for more than 100 years now, the tea trade has continued without recognition of the Khoi-San's indigenous knowledge and the rights that accompany it.

Rooibos traditional knowledge holders meet with industry. Courtesy Natural Justice

The Khoi and San peoples (collectively known as Khoi-San) [lxii] self-identify as indigenous peoples of South Africa and have occupied the region for thousands of years, but during apartheid they were forced into the racial category of "Coloured". This was done intentionally to dispossess them of their land, culture, traditions, languages, heritage and natural resources, as well as their ethnic and indigenous identity. Official statistics in South Africa still reflect the apartheid typology of race and language and do not reflect the presence of Khoi-San people in South Africa. It is not surprising, therefore, that historically their property rights have been ignored. However with the Nagoya Protocol coming into force, the rooibos industry now has a legal obligation to share benefits with the Khoi-San community as the associated traditional knowledge holders. The South African government has conducted a study on the traditional knowledge associated with rooibos in South Africa, which confirmed that the original holders of knowledge on the use of rooibos were the Khoi and the San peoples. Their indigenous and genetic resources had been utilised for tea in the Western Cape for more than 150 years. Rooibos and honeybush are examples of plants known to the Khoi-San long before European colonisation.

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lx *The National Khoi and San Council (NKC) comprises the five main Khoi-San groupings named (i) Nama, (ii) San, (iii) Koranna, (iv) Griqua and (v) Cape Khoi. The NKC serves as a negotiating body between Khoi-San indigenous peoples of South Africa and the government. Source: Original Interview transcript, Lesle Jansen, Cecil Le Fleur.*

lxi *Rooibos and honeybush have also been used for research purposes, for example, Nestlé did some research into properties of certain plant species in 2010.*[4]

lxii *Note on the terminology of Khoi-San, Khoi and San, Khoikhoi: The term "Khoi-San" generally refers to the two groupings, Khoikhoi and San. The term Khoi-San was initially used as a collective term to refer to the languages of the Khoi and San. The Khoi-San revivalist movement today, commonly refer to themselves as Khoi-San or Khoesan. These two groupings have a shared history as the indigenous peoples of South Africa; shared languages; geography; and cultural values for the most part; as well as similar genetic ancestry. Different people throughout history interpreted the Khoikhoi and the San as separate due to their different forms of livelihoods. The San generally lived as hunter- gatherers whereas the Khoikhoi at some point took on pastoralism as a form of economy. 'Khoi' is also spelled Khoekhoe (in terms of the Khoekhoegowab language) or Khoikhoi. In terms of the official South African government reports called the Status Quo reports 2000, they are mainly grouped as Nama, Griqua, Cape Khoi and Koranna. They were called 'Hottentots' and referred to as such in several South African colonial laws. The South African San is grouped largely into Khomani, !Xung; and Khwe. In Southern Africa however, the San groupings are much more diverse. They for the most part prefer to be called by their traditional groupings' name or either San or bushmen.*

Box 16.1 Continued...

Most of the Khoi-San people have moved away from areas where rooibos grows naturally, but some of them have remained and are still practising the old and the new ways of harvesting and trading. Knowledge of the uses of the species is still passed orally from generation to generation, including harvesting and preparation practices.

The National Khoi and San Council (NKC) first became aware of Nestlé's intention to patent the results from their research on rooibos and honeybush through the work of Natural Justice (NJ) and the film they produced around this matter. The NKC has started to engage with our South African rooibos industry, with support from NJ and funding institutions such as OSISA[lxiii], to persuade them to recognise the indigenous knowledge of the Khoi-San peoples and pay benefits to these communities. The NKC and the San people, under the leadership of the South African San Council (SASC) and assisted by their legal representative Roger Chennells, negotiated benefit-sharing agreements around certain plant species (such as *Hoodia*). We then entered into a Memorandum of Understanding with the National San Council (NSC) to establish a legal negotiating team consisting of members of both councils. Together we worked towards the goal of bringing the rooibos industry to the negotiation table.

Nestlé approached the Khoi and San during 2014 for a South African product they intended to develop using rooibos. A benefit-sharing agreement was subsequently signed between Nestlé and the NKC and the SASC. It was a big relief that Nestlé was so willing to comply with their benefit-sharing obligations. Biopatenting is a very difficult issue, for we are not dealing with an isolated community; the impact is too widespread to include all the Khoi-San communities, so it is difficult to visualise the impact biopatenting would have had.

For us, the concepts of access and benefit-sharing that arise from the utilisation of indigenous/traditional knowledge play a vital role in post-apartheid South Africa's restitution processes. They entail the restitution of the injustices of the past. For generations there was misappropriation of knowledge, and that must now be repaired. This issue is also inseparable from the issue of land rights. We also see rights related to access and benefit-sharing as part of a process of creating generational rights to guarantee that the descendants of the Khoi-San will always benefit from the traditional knowledge of their people.

Box 16.2 Development of a biocultural community protocol for the Potato Park in Peru

Source: Argumedo (2012)[170]

For the indigenous groups in Peru that created the Potato Park (see Boxes 7.3 and 13.1), implementation of a benefit-sharing process related to their traditional knowledge and biologically diverse genetic resources involved the creation of a biocultural community protocol[lxiv]. This involved providing training to indigenous researchers and extensive capacity-building, consultations, and research on the process of free, prior and informed consent.

The full research process included three phases:

1. Identifying community norms and customary laws on benefit-sharing (by means of a literature review, thematic working group work, study groups, participant observation);
2. Consultation, discussion, revision and negotiation of the inter-community agreement;
3. Final consultation and validation of the inter-community agreement.

The process focused on creating an equitable access and benefit-sharing model, with IPLCs' rights and self-determination over their biocultural heritage as the foundation.

lxiii *Open Society Initiative of Southern Africa*

lxiv *Biocultural protocols are developed by communities to set out their unique customary laws, values and priorities over their traditional knowledge and resources and decide how these can be integrated into access and benefit sharing systems.*[229]

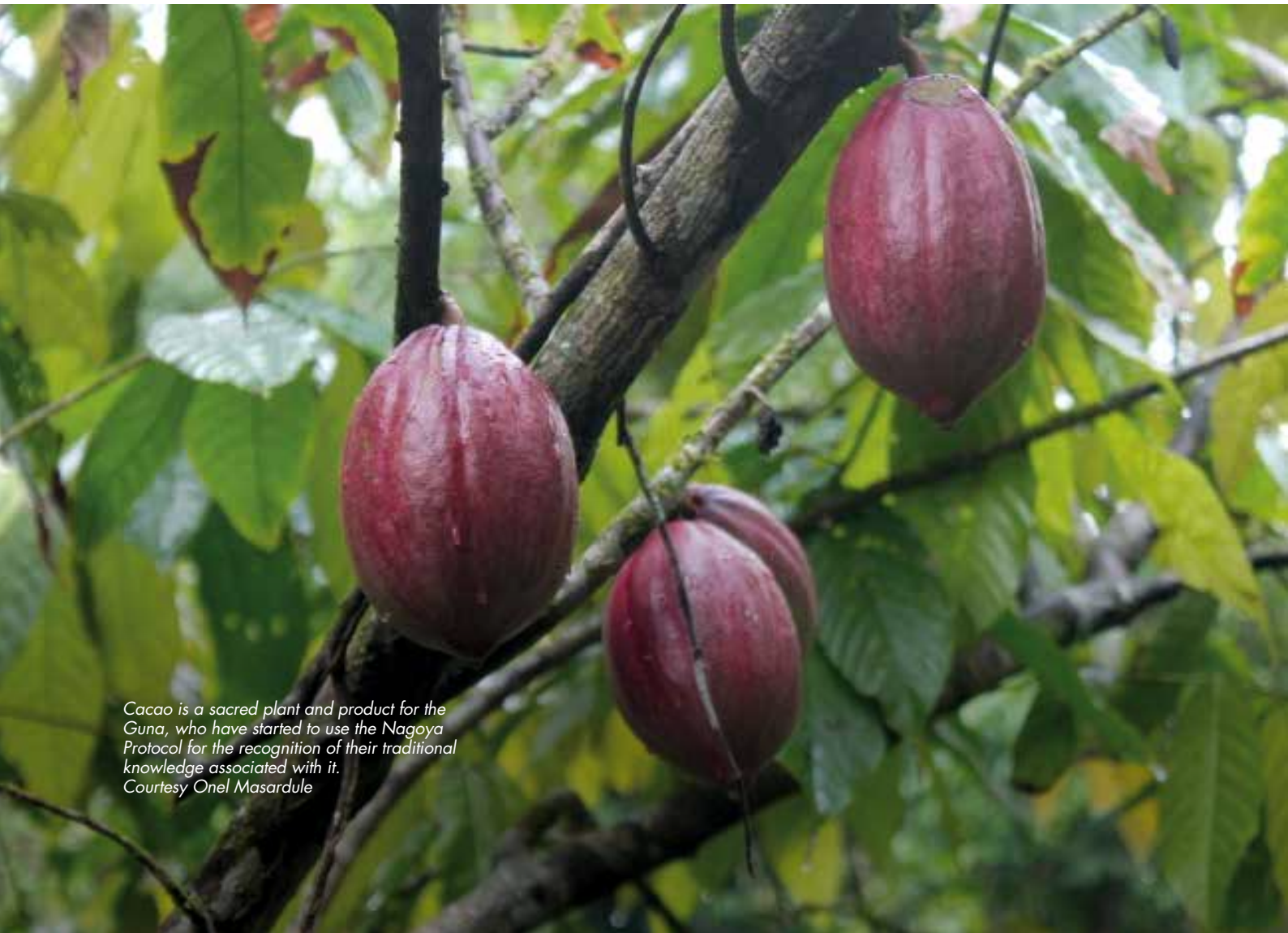
Opportunities and recommended actions to enhance progress towards the target

- Awareness-raising, experience-sharing and capacity-building activities related to the Nagoya Protocol should be continued and expanded.
- Clearer rules related to prior and informed consent (PIC) should be developed and implemented with full participation of IPLCs.
- Consultations between IPLCs and governments on the implementation of the Nagoya Protocol should be increased.
- International cooperation between Parties to the CBD should be strengthened, particularly in developing countries, for the development of national and international legal frameworks for the implementation of the Nagoya Protocol.

Key resources

Bray, K. (2011). Presentation to the CBD: Biocultural Community Protocols Under the Nagoya Protocol : Key Talking Points. Seneca International. https://www.cbd.int/abs/side-events/ICNP1/biocultural-protocols-kbray.pdf

UNEP and Natural Justice (2009). Biocultural Community Protocols: A Community Approach to Ensuring the Integrity of Environmental Law and Policy. http://www.unep.org/communityprotocols/PDF/communityprotocols.pdf



Cacao is a sacred plant and product for the Guna, who have started to use the Nagoya Protocol for the recognition of their traditional knowledge associated with it.
Courtesy Onel Masardule

TARGET

Biodiversity strategies and action plans

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.

Key message:

The process of developing, updating and/or revising an NBSAP provides Parties with a major opportunity to implement the Convention on Biological Diversity with all relevant stakeholders. IPLCs are essential partners for achieving tangible outcomes at the local and national level and as such should be fully involved in the development, updating and/or revision of NBSAPs. However, the engagement of IPLCs in the NBSAP process is not yet receiving sufficient attention by Parties and needs to be urgently addressed.

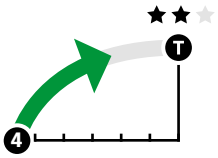
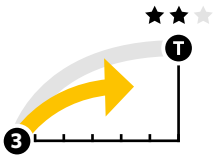
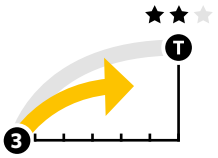
Why this target is important for IPLCs

GBO-4 stated that whilst the rate of submission of updated NBSAPs after the adoption of the Strategic Plan for Biodiversity 2011-2020 was on target, the adequacy of the updated NBSAPs in terms of following COP guidance and the degree to which they were being implemented were variable.[5] However, more recent information reveals that only 68 Parties to the Convention met the 2015 deadline for submission, and only 41 others had submitted their updated NBSAPs by September 2016, making a total of 109 (55%). Clearly, this target has not been met.[171]

There have also been shortfalls in relation to the effectiveness of NBSAPs and in relation to participation. In relation to effectiveness, the majority of NBSAPs submitted (about 75%) have targets that are less ambitious in scope than the Aichi Biodiversity Targets.[172] In relation to participation, only 20 Parties reported involvement of IPLCs in the submitted NBSAPS (18%)[171], indicating that only a minority of Parties has so far developed adequate participatory approaches. The same is true for the national reporting processes: full and effective participation of IPLCs in national reporting has taken place in only a few cases.

NBSAPs are the key instrument for the implementation of the Convention at the national level. Multi-stakeholder engagement, including full and effective participation of IPLCs, is vital for achieving all the Aichi Targets, as is recognised by GBO-4[5]. The local expertise and actions of IPLCs have much to contribute to the translation of global targets into national and local targets and indicators, which is essential for NBSAPs to be effective. Therefore the lack of IPLC participation in NBSAP development, updating and revision processes is worrying, and warrants a further call for participatory processes to be implemented at the national level.

Summary of progress towards the target

Target Elements (by 2020)	Status
Submission of NBSAPs to Secretariat by (end of) 2015	
NBSAPs adopted as effective policy instrument	
NBSAPs are being implemented	

If IPLCs are not provided opportunities to fully participate in NBSAPs and national reports, Parties are likely to miss out on one of the greatest opportunities they have to implement the Strategic Plan for Biodiversity 2011-2020.

Source: International Indigenous Forum on Biodiversity

Contributions and experiences of IPLCs towards the target

Some IPLCs have started self-reporting on their participation in NBSAPs through a questionnaire distributed by Forest Peoples Programme to members of the International Indigenous Forum on Biodiversity (IIFB) (see Table 17.1). To date out of seven reports, two of them, from Antigua and Barbuda and from Namibia, reported that the NBSAP had been updated and revised with the effective participation of IPLCs and with a good prospect of their future participation in implementation. Responses from Ecuador and Uruguay reported that NBSAP revision and updating is in progress, with good participation of IPLCs. Responses from Aotearoa/New Zealand reported that some participation took place, although indigenous organisations active in CBD processes were not included. However, those from Bangladesh and Sri Lanka reported that whilst the process is in progress, there is very limited or no participation of IPLCs.

Other information gathered from local organisations also provided mixed and variable responses. In the Philippines, the NBSAP was reviewed with the participation of IPLCs; in Suriname the input of IPLCs was reflected in the NBSAP but IPLCs are not provided with sufficient opportunities or resources for implementation, while in Thailand the NBSAP was updated with no involvement of IPLCs.

Table 17.1. Summary of participation of IPLCs in update / revision process for NBSAPs and national reporting, as reported by IIFB members and local organisations

Country	IPLC Participation* in NBSAPs	IPLC Participation* in national reporting
Antigua and Barbuda	*Yes. Effective*[1]	*Yes*[1]
Bangladesh	*Limited / none*[1]	*Limited / none*[1]
Ecuador	*Yes. Good*[1]	*Yes. Not effective*[1]
Namibia	*Yes. Effective*[1]	*Yes.*[1]
Aotearoa/New Zealand	*Limited*[1] */ some*[2]	*Limited / none*[1]
Philippines	*Yes*[2]	*Limited / none*[2]
Sri Lanka	*Limited / none*[1]	*Limited / none*[1]
Suriname	*Yes*[2]	*Limited / none*[2]
Thailand	*Limited / none*[2]	*Limited / none*[2]
Uruguay	*Yes. Good*[1]	*Yes. Good*[1]

**Sources: [1] Responses to IIFB questionnaire by members; [2] Other Information from local organisations or government agencies*

A similar situation was observed for the national reports, where four of the seven countries for which a response to the questionnaire was collected indicated that some degree of participation took place and materials provided by IPLCs were taken into account. However only in two cases was it felt that IPLCs' perspectives had been reflected in the national reports.

The Head of the Environment Department meeting with representatives of local communities to address national environmental policy in Antigua and Barbuda. Courtesy Department of the Environment for Antigua and Barbuda

Box 17.1 Positive examples of processes for participation in NBSAPs

Source: questionnaire disseminated at SBSTTA-19, November 2015

"[Stakeholder groups invited to participate in meetings related to the NBSAP] included IPLCs, women, youth and persons living with disabilities. Further, each month the Environment Department convenes a Technical Advisory Meeting to get inputs on projects and programmes and local communities are represented on this body, so they can share and have input. Concerning national targets, these were set based on what is taking place in the local communities. The process increased awareness among local communities and also created synergies and networks among government agencies and local groups."

Local community leader, Antigua and Barbuda

"The NBSAP process created many moments for dialogue between stakeholders, including with indigenous peoples. The strategy used by the Ministry of Environment was to undertake regional dialogues in eight different regions of the country, and two dialogues at a national level. Participation was open to all the social sectors and indigenous peoples' delegates were involved in the meetings. It is expected that once the strategy enters into force, it will be implemented with the direct participation of indigenous peoples, taking into account that indigenous peoples' territories are reservoirs of vast and rich biodiversity."

Indigenous leader, Ecuador

"The NBSAP process, consisting of three regional and one national consultations, was inclusive in the sense that most if not all stakeholders were invited to participate and assistance given to those financially unable to make it to the consultation meeting places. However, the opportunities to speak and provide input were basic as ensuring full and effective participation remains difficult due to different levels of understanding. Appropriate resources for capacity building are still needed".

Indigenous representative, Namibia

Opportunities and recommended actions to enhance progress towards the target

Where they have not already done so, governments and relevant organisations should:

- Institute national and sub-national mechanisms to ensure the full and effective participation of IPLCs in the development, revision and/or updating of NBSAPs.
- Ensure the full and effective contribution of all relevant stakeholders, particularly IPLCs, in the preparation of national reports, including through the inclusion of data emerging from the local level.
- Document and report the contributions of IPLCs in NBSAP processes, including in the compilation of national reports.
- Enhance support to IPLCs for the development of culturally appropriate mechanisms and educational resources to enable their effective contributions to the NBSAP processes and local implementation of the Strategic Plan for Biodiversity and Aichi Targets.
- Promote and facilitate partnerships and collaboration among all relevant stakeholders to leverage ownership of NBSAP processes and wide scale action for their implementation.

Key resources

CBD NBSAP webpage. https://www.cbd.int/nbsap/

NBSAP Forum. http://nbsapforum.net

Participatory decision-making: final approval session for the Five-Year Fishing Calendar with the Director and representatives of the Galapagos National Park, leaders of all 4 Artisanal Fishing Cooperatives, fisheries experts from NGOs and academic institutions. Courtesy Galapagos National Park

TARGET

Traditional knowledge and customary sustainable use

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.

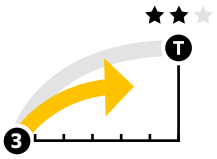
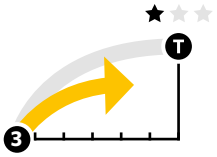
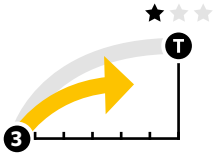
Key message:

Building on the progress that has been made towards this target will require continued efforts by IPLCs and others to raise awareness of the importance of their traditional knowledge and systems of customary sustainable use, and of their essential role in meeting the Aichi Biodiversity Targets. Ensuring recognition of and respect for traditional knowledge and customary sustainable use in the implementation of the Convention will necessitate enhanced policy, legal and institutional support at all levels.

Why this target is important for IPLCs

This target is of central importance for IPLCs because it deals directly with traditional knowledge and customary sustainable use. It is the main target related to the implementation of two of the most important articles of the CBD for IPLCs: Article 8(j)[lxv] and Article 10(c)[lxvi]. It is also closely related to the CBD's Plan of Action on Customary Sustainable Use, which was endorsed at the Twelfth Meeting of the Conference of the Parties to the CBD (COP12) in 2014. However, GBO-4 reported that while some progress had been made on this target, it was insufficient to meet the target by 2020. More specifically, GBO-4 stated that while the loss of traditional knowledge is being reversed in some places due to growing interest in traditional cultures and growing recognition of indigenous peoples' and community conserved territories and areas (ICCAs), the overall trend is one of continuing decline, as illustrated by the loss of linguistic diversity and large-scale displacement of IPLCs.[5]

Summary of progress towards the target

Target Elements (by 2020)	Status
Traditional knowledge, innovations and practices of indigenous and local communities are respected	
Traditional knowledge, innovations and practices are fully integrated and reflected in implementation of the Convention…	
… with the full and effective participation of indigenous and local communities	

[lxv] *Article 8(j) of the CBD states that* "Each Contracting Party shall, as far as possible and as appropriate: … (j) subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices".

[lxvi] *Article 10(c) of the CBD states that* "Each Contracting Party shall, as far as possible and as appropriate: … (c) protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements".

A recent analysis of national reports and NBSAPs (in September 2016) suggests that there has been little improvement in progress since GBO-4:

- Only 14% of national reports to the CBD indicated that progress was on track (see Figure 18.1);
- 34% of NBSAPS had no targets relating to Aichi Target 18;[172]
- Only 20% of 98 NBSAPs that were examined mentioned customary sustainable use.[171]

Figure 18.1 Progress reported towards the target in national reports (September 2016)

On track to meet target 14%

Some progress but not on track 43%

No significant progress 20%

Insufficient information 23%

Submissions by Parties to the CBD at the First Meeting of the Subsidiary Body on Implementation (SBI-1)[lxvii] in May 2016 showed moderate progress on some components of the target, but highlighted that only 30% of the Parties regularly report on Article 8(j)[lxviii] and Related Provisions.

Because of the challenges and complexities in measuring progress, a set of headline indicators has been developed as proxies for traditional knowledge. Three indicators have been adopted so far:

- Trends of linguistic diversity and numbers of speakers of indigenous languages (COP decision VII/30 and VIII.15).
- Trends in land-use change and land tenure in the traditional territories of IPLCs (COP decision X.43).
- Trends in the practice of traditional occupations (COP decision X.43).[173]

An additional indicator has been proposed by the Ad Hoc Technical Expert Group on Indicators:

- Trends in which traditional knowledge and practices are respected through their integration, safeguards and full and effective participation of IPLCs in the national implementation of the Strategic Plan.

The headline indicators are important for IPLCs as they help in monitoring what happens to traditional knowledge and customary sustainable use over time. IPLCs participated effectively in the identification of the indicators but are concerned that resources for their operationalisation at the national and local level have been insufficient. The SBI documentation validates this concern, reporting a lack of financial and institutional support for the operationalisation of the headline indicators.[174] Summary data related to the four indicators is provided in box 18.1.

In summary, the evidence from the various CBD fora of relevance to this target shows consistently that progress remains poor. The consequences of non-achievement of the target would be severe for the future both of IPLCs and of biodiversity. It is clear that much stronger measures will be needed in order to achieve the target.

lxvii SBI was established in 2014 to replace the Ad-Hoc Open-Ended Working Group on Review of Implementation of the Convention. See https://www.cbd.int/sbi/.

lxviii Article 8(j) is the principle article of the CBD that focuses on traditional knowledge, innovations and practices.

Box 18.1 Summary data on the global headline indicators adopted by the CBD in relation to Target 18

Linguistic diversity

The interconnectivity that exists between global biodiversity and cultural diversity highlights the importance of preserving indigenous languages (see Figure 18.2).[175] Biodiversity hotspots and high biodiversity areas are home to 70% of all languages on Earth, many of them endemic.[3] Indigenous languages contain a wealth of traditional ecological knowledge, including of species unknown to Western science,[176] and of practices crucial to the conservation and sustainable use of biodiversity. However data compiled by UNESCO, based on the degree of transmission between generations[5] and used in GBO-4, indicate that at least 43% of languages are in danger of disappearing.

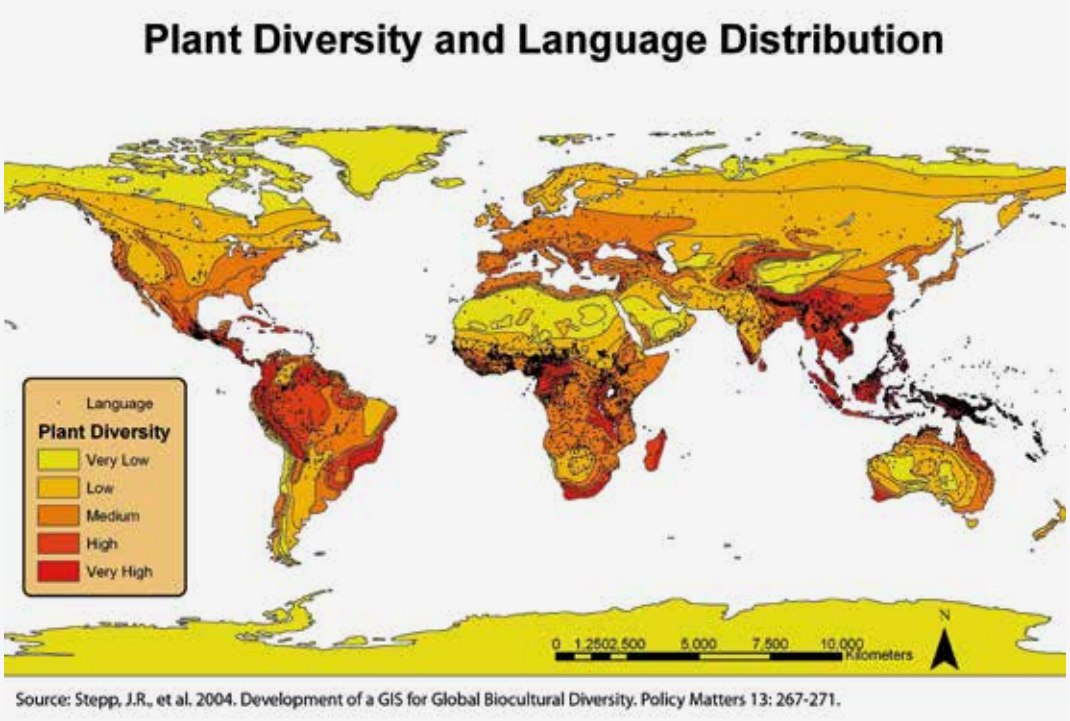


Figure 18.2: Overlap between biodiverse habitats and areas of high cultural diversity: Plant diversity and language diversity serve as indicators to illustrate the interlinkages between biological and cultural diversity (Reproduced by permission of John Richard Stepp)[177]

Land-use change and land tenure in territories of IPLCs

Traditional knowledge and customary sustainable use have been evolving over millennia. Their continued evolution can best be secured if they are nurtured, practised and transmitted in the daily lives of IPLCs in their territories and lands. Land-use change and secure land tenure in these territories and lands are therefore critical indicators for the achievement of Target 18. A recent report states that up to 2.5 billion people depend on community-based management systems based on customary tenure rights (see Figure 18.3); of these, some 370 million are indigenous and 1.5 billion are dependent on forests.

Box 18.1 **Continued...**

Figure 5:

Land facts

OVERVIEW

At Least

50%

of the world's land area is held under customary or community-based regimes.[131]

An estimated

25%

are rangelands managed by pastoralists.[132]

Up to 2.5 billion

women and men depend on community-based systems.[133] At least **200 million** of them are pastoralists.[134]

It's a global phenomenon

The majority of indigenous and community lands are in agrarian countries. They are also in emerging economies such as China, India and Mexico, and in New Zealand, Australia, North America and Europe.[135]

LAND AND THE LAW

Globally just

10%

of the lands are recognized by law as formally owned by indigenous peoples and local communities.*

This is 1/5 of what it should be.

*Including lands governed by systems derived from customary tenure (most of Africa), and those derived from other forms of community-based tenure (as in Algeria or China).[136] This figure is just 6% excluding China.

Ownership includes the right to:

Exclude outsiders from community lands.

Obtain due process and compensation in the event of expropriation.

Hold rights for an unlimited duration.

THE REALITY ON THE GROUND

The difference between what is written in law and what happens in practice is enormous, even when land rights are formally recognized.

This is due to:

Lack of enforcement
Governments may not respect legal rights. For example by issuing competing claims over the same lands, or refusing to enforce communities' land rights against outsiders.

Commercial concessions
Which may be allocated on the same land, including 99-year concessions to companies.[137] In some cases, such as Uganda, this has been done without consultation or compensation because communities were unable to produce certificates of customary ownership.[138]

NATIONAL EXAMPLES

Peru

Peruvian indigenous peoples control more than one-third of Peru's land area. However, the national Indigenous Federation of the Peruvian Amazon estimates that an additional **20 million hectares** are eligible for formal recognition.[139]

Indonesia

Approximately 0.2% of Indonesia's land is currently recognized as community-owned or controlled. By contrast, an estimated **40 million hectares** are proposed for recognition by the Indonesian Constitutional Court in favour of communities' forest tenure rights.[140]

Canada

In Canada, **7%** of the country is owned by indigenous peoples and local communities, but much of the land is located in sparsely populated tundra and taiga ecosystems.[141]

Figure 18.3: Land facts[1]

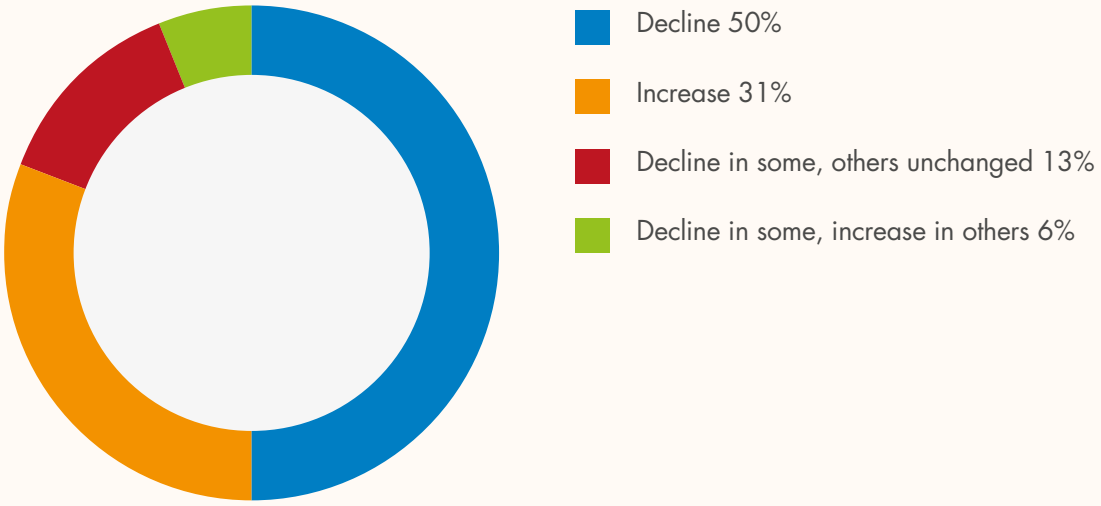
Box 18.1 Continued...

Traditional occupations

Traditional occupations are a key source of livelihoods and income for many IPLCs, and also provide multiple biodiversity benefits.[178] They are tailored to their natural environments and have been developed over generations as sophisticated knowledge-based practice systems. They encompass a variety of activities such as hunting, fishing, collecting wood and non-timber forest products, agriculture, aquaculture, livestock-keeping, and practising traditional healing and traditional crafts and skills.

Data provided by 17 respondents from 13 countries about their own communities for a recent rapid assessment by Forest Peoples Programme point to a decline in the practice of traditional occupations in half (50%) of the communities, but an increase in other communities (31%) (see Figure 18.4). In 19% of communities there was significant variance between different occupations: some are declining, others increasing. The data indicate that the role of the government can be decisive in the survival of traditional occupations (for example through promoting them in school curricula and creating supportive legal frameworks and policy environments). Furthermore, certain traditional occupations are negatively affected by the loss or degradation of biodiversity in communities' territories, or by climate change impacts.[178]

Figure 18.4 Trends in practice of traditional occupations



Source: Survey by Forest Peoples Programme

Integration and safeguarding of traditional knowledge and practices at the national level

The main vehicle for integration of traditional knowledge and practices into national implementation is through IPLCs' participation in the updating and implementation of NBSAPs and in the compilation of national reports. Information on this has already been given under Target 17 and at the beginning of this target, and shows that levels of participation are poor.

More positively, 35 Parties have established National Focal Points for Article 8(j) and related provisions.[171] Among them, Guatemala has set a good precedent by designating both a government representative and an indigenous representative as the national Focal Point.

Contributions and experiences by IPLCs towards achieving the target

IPLCs have been carrying out a wide range of activities to raise awareness of and promote respect for traditional knowledge and customary sustainable use, and towards their incorporation into the implementation of the Convention at all levels. Below are some selected examples.

Promotion and revitalisation of culture, language and traditional practices

A revival of interest and enthusiasm for peoples' cultural identity, particularly amongst youths, is notable in many regions. For example:

- In Thailand the Karen and Hmong organise youth camps to pass on indigenous culture and knowledge related to the environment, and have set up community cultural centres to provide spaces for the elders to teach cultural practices to the youth.

- In Suriname, indigenous and Maroon organisations, with the help of support groups, designed a bilingual method for indigenous and tribal children (Dutch and Kari'na; Dutch and Lokodyan; and Dutch and Saamaka) and are raising awareness and initiating discussions about intercultural and bilingual education (IBE) among parents, teachers and school boards.[179]

- In Mexico, the Comcaac (Seri people) of Sonora entered into a long-term collaboration with a multi-disciplinary research team on linguistic expressions and traditional ecological knowledge. This project has enabled learning encompassing both Western and indigenous perspectives on perceiving and cataloguing biodiversity. Cataloguing indigenous species and place names has led to the discovery of new species, as well as to a deeper understanding of species' habitats and requirements.[180]

- In the Republic of Sakha-Yakutia in the Russian Arctic region, indigenous nomadic schools provide education for indigenous children in their native language. Children learn about their culture, traditions and customs, and practise skills related to traditional Arctic resource governance and management. The schools are supported by regional laws and long-term programmes and funding. The schools are created in the locations of the reindeer herding brigades in adapted wooden rooms or winterised yurts (*chums*) so that the children do not have to leave their homes to go to school. This initiative aims to support the continuation and restoration of the traditional nomadic way of life, which is the primary means of collective survival in the extreme environments of the North.[lxix]

- Recent long-term community-based cooperation and research in the Eurasian North points to profound links between maintaining traditional livelihoods, such as reindeer herding and fisheries, and the survival of traditional culture, mindset and languages.[181] Impacts to habitats therefore have very direct influences on these traditional societies, as both are key components of socio-ecological systems.

Indigenous youth learning traditional skills and crafts during indigenous education festival, Galibi, Suriname.

Community action research on customary sustainable use

Since 2004, numerous IPLC organisations and communities have developed resources and materials on the customary sustainable use (CSU) of biological diversity.[182] By researching customary sustainable use, including customary rules and laws, the communities have deepened their insight into customary management systems and their maintenance and/or revitalisation (see for example Boxes 10.2, 14.1, 15.1 and 15.2). Community studies have identified concrete actions to promote respect and recognition for traditional knowledge and customary sustainable use and to take these into account in relevant national policies and programmes. As part of a bottom-up CEPA[lxx] approach, this information has been shared with national and local governments as well as at various CBD meetings and through official submissions. Such input has contributed to the development of the Plan of Action on Customary Sustainable Use (adopted by the Twelfth Conference of the Parties to the CBD (COP12) in 2014: see Target 7) and the communities involved are now determined to play an active role in the implementation of the Plan up to 2020 and beyond.

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lxix *For online tool and extra material: Documentary "*Children of the Tundra*": https://www.youtube.com/watch?v=UQeNOiYL3AQ*

lxx *CEPA stands for Communication, Education and Public Awareness, and is the title of a CBD Programme. The International Indigenous Forum for Biodiversity (IIFB) also has its own CEPA working group. For more detail, see under Target 1.*

Community mapping to address land use change and security of land tenure

Participatory community mapping based on traditional knowledge and using both traditional and modern mapping technologies has emerged as a useful and powerful tool during the past two decades (see Target 19 for examples). Hundreds of communities have started to use this tool and efforts are under way to establish collaborative networks at various levels. In August 2013, 110 representatives of indigenous peoples, community mapping experts, members of support NGOs and academia from 17 countries gathered together in the traditional territory of the Batak at Lake Toba in Indonesia to share and learn from their diverse experiences.[183] Whilst acknowledging some potential risks, the participants agreed that community maps can be used as part of community-based monitoring and information systems for a wide range of purposes, including:

- The identification of diverse forms of land use, and monitoring of changes in land and resource use;
- Tracking the extent of use or decline of traditional knowledge, indigenous languages and customary governance;
- Monitoring of biodiversity, ecosystem integrity and climate change impacts;
- Development of territorial management plans, including innovative zoning that contributes directly to conservation and sustainable use (see for example Figure 18.5 and Box 14.1);
- As a tool for self-determined development and in advocacy for policy reforms.

One of the challenges being addressed in relation to monitoring of land-use change and secure land tenure is how better to manage complementarity and inter-operability between community-generated maps and larger scale maps produced by national or global agencies. Meanwhile, community participatory mapping is set to continue to evolve to serve community needs.

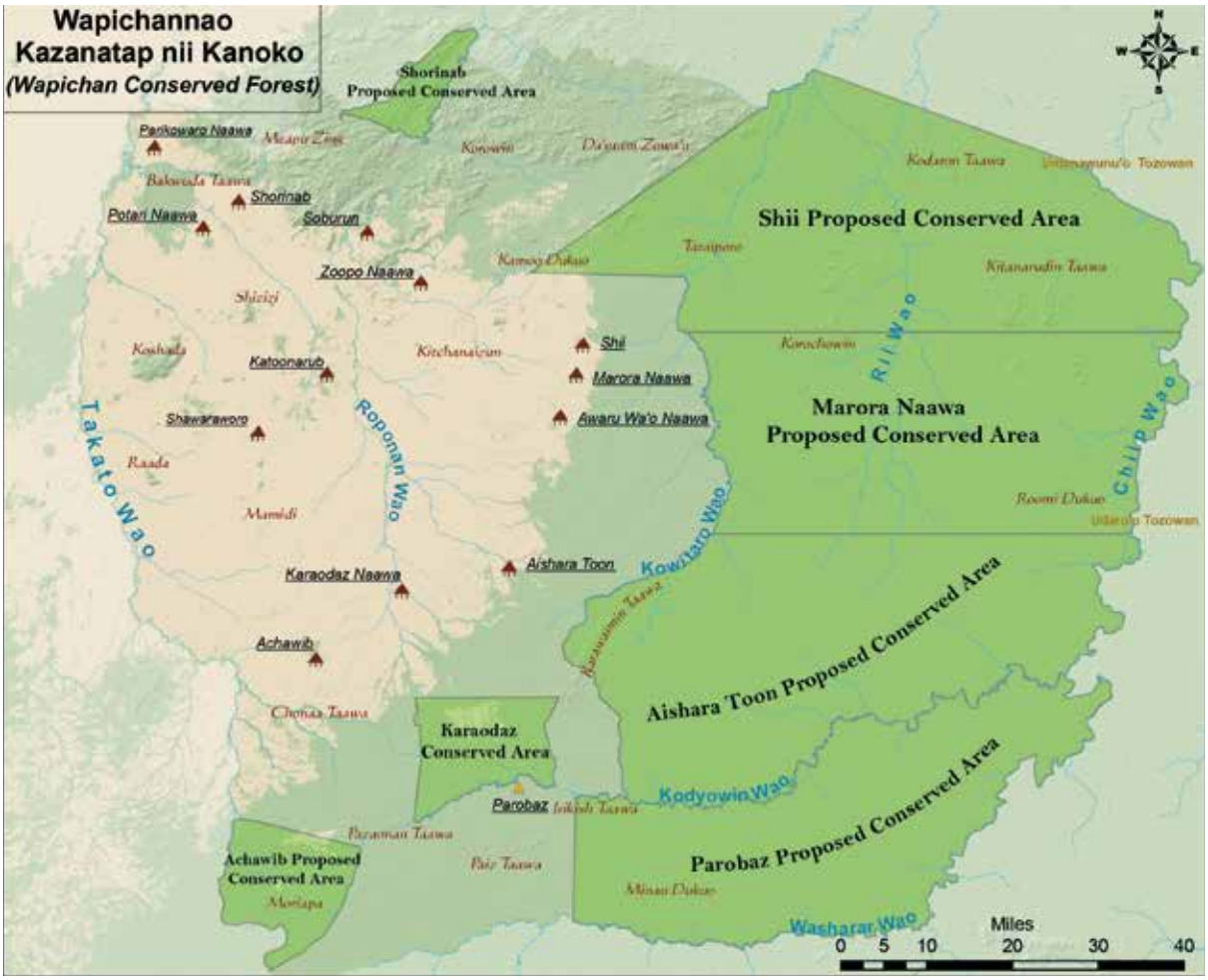


Figure 18.5: Wapichannao Kazanatap nii Kanoko*: Wapichan Conserved Forests being proposed as part of their territorial management plan. Wapichan Conserved forests (covering approximately 1.4 million ha) being proposed as part of the Wapichan territorial management plan, Guyana. Courtesy: South Central People's Development Association (SCPDA) and South and South Central Rupununi District Toshaos Council. Ron James, SRDC-SCPDA*

Transmitting knowledge on the use of traditional fishing tools near Bipindi National Park, Cameroon. Courtesy John Nelson, FPP

Opportunities and recommended actions to enhance progress towards the target

Governments, donor agencies and relevant organisations should:

- Provide greater support and resources for on-the-ground community initiatives on traditional knowledge and customary sustainable use and for monitoring the headline indicators related to Target 18.
- Mainstream the Programme of Work on Article 8(j) and Related Provisions and the Plan of Action on Customary Sustainable Use, and scale up their implementation, by incorporating linkages with all Aichi Biodiversity Targets in NBSAP planning and implementation.
- Support concrete actions to halt the loss and promote the revitalisation of indigenous languages and traditional occupations and to strengthen IPLCs' land tenure security.

Key resources

WWF (2014). Biocultural Diversity: threatened species, endangered languages. http://wwf.panda.org/wwf_news/press_releases/?222890/Biocultural-Diversity-Threatened-Species-Endangered-Languages

FPP (2011). Customary sustainable use of biodiversity by indigenous peoples and local communities: examples, challenges, community initiatives and recommendations relating to CBD Article 10(c). http://www.forestpeoples.org/customary-sustainable-use-studies

FPP (2016). Status and Trends in Traditional Occupations. http://www.forestpeoples.org/topics/convention-biological-diversity-cbd/publication/2016/status-and-trends-traditional-occupation

Tebtebba (2015). Mapping Our Lands and Waters, Protecting Our Future. http://www.tebtebba.org/index.php/content/361-mapping-our-lands-a-waters-protecting-our-future

TARGET

Sharing information and knowledge

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.

Key message:

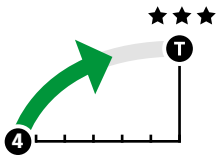
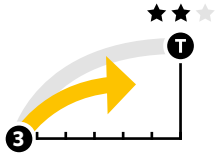
Community-based monitoring, data-gathering and information sharing can enrich the monitoring of progress under the Strategic Plan for Biodiversity. The sharing of new and improved technologies has greatly enhanced local capacities to ground-truth data derived from remote sensing, global and national data sets and provide evidence of community outcomes. In addition, there is increasing recognition that indigenous and local knowledge plays a complementary role to scientific knowledge in broadening knowledge and policy platforms at multiple scales.

Why this target is important for IPLCs

GBO-4 reported significant progress in advancing scientific understanding and technologies relating to biodiversity and ecosystems. One ground-breaking advance in recent years has been the increasing inclusion of indigenous and local knowledge alongside scientific knowledge, and the recognition of these as complementary systems of knowledge that can contribute to fuller and richer understandings of biodiversity values, functioning, status and trends, and of the consequences of its loss at different scales. This respectful relationship, combined with innovative technologies, has been hugely significant for IPLCs in enabling them to generate, handle and use information to manage their lands and resources, and also in increasing accountability of private and public bodies.

The CBD has played a significant role in the inter-governmental promotion of traditional knowledge in the past 20 years, and the inclusion of Target 18 in the Strategic Plan for Biodiversity has given impetus towards its wider respect and recognition. Today, the interactions between biological diversity and cultural diversity are much better understood[184] and the multiple conceptions and values of ecosystems and its services are more widely acknowledged. For example the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has embedded indigenous and local knowledge (ILK) in its conceptual framework, operating principles and work programmes[185] and has set for itself the task of ensuring that its approaches and procedures, participatory mechanisms and products are fully inclusive of the distinct knowledge contributions of IPLCs.[186] These developments underscore that knowledge diversity and multi-disciplinary expertise are important features of knowledge platforms in the 21st century. Moreover, the rapid evolution of creative applications and digital technologies makes data and information more accessible, and knowledge creation and sharing more socialised.

Summary of progress towards the target

Target Elements (by 2020)	Status
Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved	
Biodiversity knowledge, the science base and technologies are widely shared and transferred and applied	

Children learning from an elder about rock art in Anindilyakwa Indigenous Protected Area, Northern Territory, Australia.

Contributions and experiences by IPLCs towards achieving the target

IPLCs around the world have been creatively combining traditional knowledge with new technologies for participatory mapping, monitoring and information systems in support of local governance and planning. These community-based monitoring and information systems (CBMIS) are also used to increase accountability of public and private bodies in complying with social, environmental and human rights standards. Innovative tool kits to transfer technology to the community level and to allow communities to generate, handle and use information to manage their lands and resources are being developed. Using these tools, communities are better able to create their own community maps that serve as the basis for territorial management plans, environmental and social monitoring systems and the exploration of community-based sustainable livelihood options. Building the capacity of IPLCs to generate, control, manage, share and update their own data and information, through CBMIS, is a major contribution to achieving Target 19.

CBMIS approaches and methods are increasingly acknowledged for their effectiveness and level of sophistication by independent academic institutions. Recent research to assess monitoring possibilities of indicators for the Aichi Biodiversity Targets and those of 11 other international environmental agreements concluded that of 186 indicators, 69 (37%) required monitoring by professional scientists, whereas 117 (63%) could involve community members as "citizen scientists". The study also reported that promoting community-based and citizen-science approaches could significantly enrich monitoring progress related to global environmental conventions.[65] Similar analyses by the same research team showed that communities living in the world's tropical forests can estimate an area's carbon stock as effectively as hi-tech systems, and that local communities are able to monitor forest biomass up to the highest standards of the Intergovernmental Panel on Climate Change. In many locations, IPLCs are generating quantitative data and qualitative information about local conditions unavailable from national and global statistics and remote sensing technologies.

Training on participatory community mapping and data collection using handheld mobile tools in Liberia.

Box 19.1 The Kalanguya experience of community-based monitoring and information systems in Tinoc, Ifugao, Philippines.

Florence Daguitan, Tebtebba[lxxi]

From 2008 to 2010, ecosystems assessments were conducted in Tinoc, Ifugao, using CBD indicators on land use and land use change, land tenure, indigenous languages, traditional occupations and people's wellbeing (See Box 18.1). Community research was carried out in five of the twelve *barangays* or administrative villages of Tinoc: Ahin, Wangwang, Tulludan, Tukucan, and Binablayan. This assessment employed cultural and GIS mapping, workshops, surveys and interviews, as well as secondary data and government rural health clinic records on frequency of childhood illnesses.

When Tebtebba started the work, people were very cautious to speak about their traditional knowledge, owing to a long experience of discrimination. Also, research was seen as the work of academics and professionals, and information seldom ended up in the hands of the community. Demystifying research encouraged participation. It was important for people to realise that anyone can be involved in research and the creation of knowledge, and that this is part of everyday life, and can be transmitted through storytelling, songs, rituals and art, and in other ways.

The research project showed that traditional territorial management was vibrant up to the mid 1990s, but with the adoption of chemical-based commercial vegetable production, communities veered away significantly from traditional practices. A new category of land-use and associated technologies appeared in which the land is privately owned and managed outside the customary community rules. This has caused forest degradation and river siltation, drying up of natural springs, exploitation of farmers by the market system, and food insecurity, among other effects.[lxxii]

Traditional monitoring systems still exist, such as the *giti*, for monitoring irrigation systems and changes in seasons and weather. For example the maturing of the *pullet* plant signals the time to start land preparation in the irrigated riceland, and the arrival of *kiling* birds indicates that storms have passed and that it is time to start planting rice. The accuracy of these traditional indicators in the context of climate change needs further study.

lxxi *Based on a pilot project applying the ecosystem-based approach with communities in Tinoc, Ifugao implemented by Tebtebba, jointly with Montanosa Resource and Development Centre (MRDC).*

lxxii *Workshop among commercial vegetable growers, Tukucan, Tinoc, September 2009*

Box 19.1 Continued...

The process of participatory action research enabled the Kalanguya people to:

- Revitalise their indigenous knowledge systems and practices for territorial management;
- Understand negative impacts arising from their adoption of chemical-based, commercial vegetable farming;
- Adopt a Community Land Use Plan addressing the problems that were identified.

After more than a year of participatory action research the Kalanguya fully appreciated the wisdom and science of their indigenous knowledge, which embodies sustainable resource use and equitable sharing of resources. The study showed that indigenous territorial management among the Kalanguya is based on land use patterns that manifest man-land-nature and spirit relationships, based on biodiversity, culture and spiritual values.

Communities used the emerging data to draw up action plans which varied from village to village. In the Wangwang community, where data showed that the forest is largely intact, the community's aim is to upgrade their traditional knowledge and to strengthen customary sustainable use and customary laws. On the other hand, in Tukucan, the data showed a significant reduction in the coverage of the *bel-ew* watershed protection forest, from 1108.73 ha in 1970 to 717.65 hectares in 2009. Much of the forest had been cleared for commercial vegetable farming and the range of foods eaten by the community was less diverse compared to those previously collected from the forests and swidden farms. Here, the aim of the community is to reclaim the watershed area from degradation and privatisation, assist in forest regrowth and shift from chemical-input farming to ecological or sustainable farming. One member of Tukucan concluded:

For as long as one is willing to work the land, no one will be hungry. But hunger will occur if we deprive man of the land that is the basic means of production

Lakay Biaw, member of Tukucan community

A land summit was held to unite the communities around the findings of the community assessment. Policies were developed to protect watershed areas and river systems, and to monitor crop yields. Through this process it was realised that although people spoke the Kalanguya language in family conversations, terms relating to customary laws were no longer widely known.

A unity pact or covenant to arrest environmental degradation and promote peoples' wellbeing was agreed among community leaders. To realise this covenant, a comprehensive land use plan was formulated with the following goals:

1. Enhanced ecosystems for increased food sovereignty and community resilience;
2. Strengthened customary governance for the promotion of traditional values, customary sustainable use and equitable sharing of resources; and
3. Strengthened people's advocacy for appropriate development programmes and improved social services.

Activities related to awareness-raising, capacity-building, project development, community resource mobilisation, policy advocacy and networking were agreed upon, and indicators were adopted for monitoring progress.

An international community to community exchange on multiple evidence based approach and diverse knowledge systems in February 2016 in Hin Lad Nai, Thailand.

Similar community initiatives are happening in different countries around the world by members of the International Indigenous Forum on Biodiversity (IIFB) Working Group on Indicators.[183,187,188] The Working Group has made linkages with the Biodiversity Indicators Partnership, the International Partnership on the Satoyama Initiative (IPSI)[149] and other global and national monitoring processes, with the aim of embedding indicators relevant for indigenous peoples in their work.

The increasing deployment and sharing of tools and technologies managed and controlled directly by IPLCs is bridging the digital divide, and promoting greater access to and democratisation of data and information. Their contributions now extend to innovations in the use and creative application of information technologies which bridge local information and global data sets. IPLCs are thus participating in the contemporary data revolution in service of sustainable development.

Box 19.2 A world that counts: mobilising the data revolution for sustainable development

Report prepared at the request of the United Nations Secretary-General by the Independent Expert Advisory Group on Data Revolution (p2, p6)[189]

As the world embarks on an ambitious project to meet new Sustainable Development Goals (SDGs), there is an urgent need to mobilise the data revolution for all people and the whole planet in order to monitor progress, hold governments accountable and foster sustainable development. More diverse, integrated, timely and trustworthy information can lead to better decision-making and real-time citizen feedback. This in turn enables individuals, public and private institutions, and companies to make choices that are good for them and for the world they live in... ultimately [the data revolution means] more empowered people, better policies, better decisions and greater participation and accountability, leading to better outcomes for people and the planet.

Opportunities and recommended actions to enhance progress towards the target

Governments, policy-makers, scientists and academics, in collaboration with IPLCs, should:

- Broaden the science-policy interface to include diverse knowledge systems and strengthen the inclusion of indigenous and local knowledge;
- Enhance support for community-based monitoring and information systems;
- Strengthen interfaces between global, national, and community-based knowledge generation, dissemination and application.

Key resources

UN Independent Expert Advisory Group on a Data Revolution for Sustainable Development (2014). *A world that counts: Mobilising the data revolution for sustainable development*. Report prepared at the request of the United Nations Secretary-General. http://www.undatarevolution.org/wp-content/uploads/2014/12/A-World-That-Counts2.pdf.

UNESCO-UNU (2012). *Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation*. http://unesdoc.unesco.org/images/0021/002166/216613e.pdf

UN Scientific Advisory Board. 2016. *Indigenous and Local Knowledges(s) and Sciences for Sustainable Development. Policy Brief by the Scientific Advisory Board of the UN Secretary General.* http://unesdoc.unesco.org/images/0024/002461/246104E.pdf

Daguitan Florence. 2010. *Caring for our Source of Sustenance, The Kalanguya's Territorial Management:* Panangipeptek ni Kalpuan ni Panbiyagan, Tebtebba Foundation.

A world that counts (see box 19.2) notes that Indigenous populations are consistently left out of most data sets, and that many of the issues of most concern to women are poorly served by existing data. Much more data are needed on the economic roles of women of all ages as caregivers to children, older persons and the disabled in the household and in the labour force. Courtesy Unnayan Onneshan

TARGET

Mobilizing resources from all sources

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 Mobilisation, should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Key message:

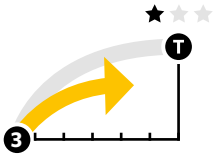
The collective actions of IPLCs on conservation and sustainable use of biodiversity are making important contributions towards this target and many IPLCs' initiatives benefit from existing biodiversity funding sources. However, these sources can be difficult for smaller organisations to access. Increased accessibility of existing sources of finance and a relatively modest increase in total financial resources available for IPLC initiatives would be a cost-effective way to increase progress towards the attainment of all the Aichi Biodiversity Targets.

Why this target is important for IPLCs

GBO-4 noted that there were limited data on mobilisation of financial resources, especially in relation to domestic funding for biodiversity initiatives, but that the information available suggests that significantly more funding is needed to enable the successful achievement of this target and of the Strategic Plan for Biodiversity 2011-2020 as a whole.[5] Resources for implementing the Strategic Plan are limited and need to be augmented by all sectors of society. IPLCs, through their collective actions, are already making meaningful contributions to the implementation of all the Aichi Biodiversity Targets. With a relatively modest increase in financial resources and support, these contributions could be even greater.

A strong argument for further and continued investment in local initiatives is that the outcomes often serve multiple policy objectives, including community development, environmental recovery and cultural wellbeing, whilst being highly cost-effective and offering good value for money.

Summary of progress towards the target

Target Elements (by 2020)	Status
Mobilization of financial resources implementing the Strategic Plan for Biodiversity from all sources have increased substantially from 2010 levels	

A recent study by the World Resources Institute (WRI) concluded that:

> *Securing indigenous forestland tenure is a low-cost, high-benefit investment and has significant potential for cost-effective carbon mitigation.*

World Resources Institute (2016)[58,190]

Similarly, recent research conducted on the viability and costs of local monitoring of forest degradation and biomass in Tanzania, India and Madagascar demonstrated that forest monitoring can be done as effectively by IPLCs themselves as by trained scientists, but at half the cost (see also Target 19). IPLCs' actions can help make viable otherwise unaffordable or technologically-draining initiatives, through their traditional knowledge and on-the-ground presence.[191]

Contributions and experiences by IPLCs towards achieving the target

Inclusion and involvement of IPLCs in current biodiversity funding

The main financial mechanism for the implementation of the CBD as a whole is the Global Environment Facility (GEF). To date, GEF has supported 160 full- and medium-sized projects involving indigenous peoples. Two-thirds of these projects were either designed exclusively to benefit indigenous peoples (many of them were executed by indigenous peoples' organisations), or had distinct components and/or sub-projects benefitting and targeting indigenous peoples.

The GEF Small Grants Programme (GEF-SGP) is another funding source that enables GEF to partner with indigenous peoples globally (see Box 20.1). Approximately 15% of the GEF-SGP projects target and involve indigenous peoples.[192,193, [lxxiii]]

Collective action by a women group to restore herbal gardens. Courtesy IMPECT

Box 20.1 The Global Environment Facility (GEF) Small Grants Programme: funding for IPLCs

At the Twelfth Conference of the Parties to the CBD (CBD COP12) the German government, the GEF's Small Grants Programme (GEF-SGP)[lxxiv] and the United Nations Development Programme (UNDP) announced a new partnership to create the largest global fund for territories and areas conserved by indigenous peoples and local communities (ICCAs). The fund, which consisted of 12 million Euros over five years, aims to contribute to the achievement of Aichi Biodiversity Targets 11, 14 and 18. It supports work in at least twenty-six countries.[194]

The GEF-SGP Annual Report July 2014 – June 2015 reports that in this period SGP continued to serve as a delivery mechanism for broader global and regional initiatives funded by key donor partners, through its established country programmes. These include the Community-Based Adaptation (CBA) programme with the Australian Government and, together with the Japan Biodiversity Fund, the Community Development and Knowledge Management (COMDEKS) programme on protection of biodiversity in socio-ecological production landscapes (under the Satoyama Initiative). The COMDEKS project is being implemented in a wide variety of landscapes in twenty countries. [lxxv]

The GEF Small Grants Programme Annual Monitoring Report (July 2014 – 30 June 2015) states that its cumulative portfolio since its inception includes over 19,770 projects implemented by community-based and civil society organisations in 132 countries. In the biodiversity focal area, SGP projects have positively influenced 206 protected areas (PAs) and 299 Indigenous and Community Conserved Territories and Areas (ICCAs), including Locally Managed Marine Areas, in the reporting period concerned.[lxxvi]

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lxxiii GEF Principles and Guidelines for Engagement with Indigenous Peoples, para 23-24[192]

*lxxiv The GEF-SGP was established following the 1992 UN Conference on Environment and Development (UNCED) at Rio. Its website states that "*by providing financial and technical support to projects that conserve and restore the environment while enhancing people's well-being and livelihoods, SGP demonstrates that community action can maintain the fine balance between human needs and environmental imperatives*".*
See http://sgp.undp.org/

lxxv GEF-SGP Annual Report July 2014-June 2015 (GEF/C.49/Inf.09). p7, 24, 62[230]

lxxvi Ibid. p.7, 8, 24[230]

Producing clothes using natural materials and dye is part of collective action in San Juan, Guatemala. Courtesy Maurizio Farhan Ferrari, FPP

The GEF's Principles and Guidelines for Engagement with Indigenous Peoples[192] recommend that GEF-SGP use a flexible and streamlined project cycle and flexible disbursement terms in order to accommodate different cultures, customs and seasonal movements. They also recommend that it accept proposals in national languages and in non-traditional formats, including video and community theatre.[192,193]

However, feedback from indigenous organisations whose proposals were selected for inclusion in existing GEF-SGP projects reveals that in reality, the processes can be very complicated, strict and demanding. For small grassroots organisations with limited staff and resources and no fluent English proficiency, compliance with requests, expectations and conditions in order to receive the funding presents a significant hurdle. It seems that certain safeguards and policies related to finance, accountability and grievances, which were designed to apply to large projects, are also applied to small projects, thus causing challenges for indigenous or local project holders.[lxxvii]

Two others sources of funds are as follows:

- **The IFAD Indigenous Peoples' Assistance Facility (IPAF)** provides grants of between US$20,000 and US$50,000 to small-scale projects designed and implemented by indigenous peoples' communities and organisations. Many of these are related to traditional knowledge and customary use.[195] Since 2011, 31 projects have been approved in 26 countries, and US$1,138,000 have been awarded overall. IFAD has made efforts to increase the participation of IPLCs by transferring decision-making powers to regional indigenous organisations, giving them increased responsibility for the selection and implementation of projects.

- The **CBD LifeWeb Initiative** was launched at the Ninth Conference of the Parties to the CBD (CBD COP9) to help bridge the funding gap for achieving Aichi Biodiversity Target 11. It aims to act as a match-making facility between countries and actors seeking funding for protected areas and donors interested in supporting them. Expressions of interest can be submitted by local indigenous or community groups, accompanied by an endorsement letter from the national Focal Point for the CBD Programme of Work on Protected Areas. A limited number of projects focusing on community-based solutions have been submitted and partially funded through the Initiative.[196]

Box 20.2 Standing with Indian Country: President Obama's 2017 Fiscal Budget

President Obama's 2017 budget strongly supports the sustainable stewardship of tribal trust lands, natural resources, and the environment in Indian Country in the USA. The budget encompasses the protection and restoration of ecosystems and important landscapes; stewardship of land, water, ocean, and energy resources; resilience in the face of a changing climate; and clean and sustainable energy development. The budget provides US$377 million for the Bureau of Indian Affairs (BIA) to support tribes in managing resources, which is US$33 million more than the budget for stewardship of fisheries, wildlife, forests, water, and tribal lands in 2016.[197]

lxxvii Based on anonymised personal communication, 2016.

Indigenous peoples uniting for collective action to protect their territories and the environment in the Cordillera, Philippines. Courtesy Maurizio Farhan Ferrari, FPP

Mitigating risks and harmful impacts of biodiversity funding on IPLCs and their territories

The International Indigenous Forum on Biodiversity (IIFB) has called for caution regarding the potential harmful impacts of biodiversity funding on IPLCs and their lands and territories. They have pointed out the risks of public-private partnerships related to biodiversity in areas inhabited by indigenous peoples and the importance of free, prior and informed consent (FPIC) and social safeguards to protect indigenous peoples and the environment.[198]

Similarly in a submission to the CBD's Twelfth Conference of the Parties, SwedBio[lxxviii] has recommended scaling up biodiversity funding in order to achieve the Aichi Biodiversity Targets, but at the same time recognising the potential impacts funding can have on both biodiversity and people's livelihoods, and the importance of consultation and participation of IPLCs in the design of financing mechanisms which affect them.[199] They recommend a holistic approach to safeguards which acknowledges the importance of the interplay between the local context and international or national processes.

> *IPLCs are aware of the risks, challenges and impacts that the biodiversity financial mechanisms bring. Therefore for us the social safeguards are important to protect the Indigenous Peoples life and the Mother Earth.*
>
> *COP12 IIFB Statement on Resource Mobilization & Financial Mechanism*[232]

Methodologies for assessment of IPLCs' collective actions and non-monetary contributions towards implementation of the Strategic Plan

CBD Decision XII/3 on resource mobilisation[200] recognises the role of collective actions by IPLCs and the contributions of customary sustainable governance and management to biodiversity conservation and to the utilisation and maintenance of biodiversity. Many examples of such collective actions are included in the various chapters of this report. However, how best to assess and evaluate the contributions of these measures, in ways that are recognised and understood by a diversity of actors, is not yet clear. To address this issue a **Dialogue Workshop on Assessment of Collective Action in Biodiversity Conservation** was held in Panajachel, Guatemala in 2015 to discuss available methodologies.[201] Participants stressed that in some cases the benefits of collective action can be reported in monetary terms, but in most cases they need to be reported as non-monetary contributions. It was suggested that further work be carried out, together with IPLCs, on a list of non-monetary and culturally relevant indicators, taking into consideration the problems with putting economic valuations on traditional knowledge. At the grassroots level, clearer information on this issue is needed. It was also recommended that, rather than aggregating data on the contributions of collective actions under Target 20 (in relation to resource mobilisation), it should be described and assessed in relation to all the targets in the Strategic Plan - something that has been done in this report.[202]

lxxviii *Swedbio is a programme of the Stockholm Resilience Centre (http://swed.bio/). See "Biodiversity financing and safeguards: lessons learned and proposed guidelines"199, a submission to COP12.*

Opportunities and recommended actions to enhance progress towards the target

Greater support for IPLCs represents a cost-effective means of accelerating progress in implementing the Strategic Plan, and of supporting sustainable development more generally. Governments and donors and all relevant actors should:

- Increase funding to IPLC initiatives in a culturally appropriate and accessible manner that can contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020.
- Acknowledge the contributions of IPLCs' collective actions in the implementation of the Strategic Plan. In consultation with IPLCs, governments in particular should explore how these collective actions could be reflected in their national reports.
- Mitigate harmful impacts of biodiversity funding on IPLCs and their lands and territories, applying social safeguards and free, prior and informed consent (FPIC).

Key resources

On GEF and indigenous peoples:

- Partnership in Practice: Engagement with Indigenous Peoples (2014)
- User Guide: Indigenous Peoples and GEF Project Financing (2016).

https://www.thegef.org/topics/indigenous-peoples

On funding for indigenous-partnered projects:
http://thephilanthropist.ca/2016/07/drops-in-the-soil-not-in-the-bucket-the-case-for-borderless-indigenous-philanthropy/

On collective action:
https://www.cbd.int/financial/collectiveaction.shtml and https://www.cbd.int/financial/collectiveworkshop.shtml

Part 3

Conclusions and Recommendations

3

Conclusions

The diverse experiences of IPLCs described in this report indicate several overarching conclusions. These conclusions centre on the need to mainstream and integrate biological and cultural diversity; the need to strengthen partnerships with IPLCs, and the need to respect human rights and secure multiple benefits for all.

Mainstreaming and integrating biological and cultural diversity

Biological diversity and cultural diversity are inextricably linked. Biological diversity underpins the resilience of ecosystems and cultural diversity underpins social resilience; together they increase overall resilience to environmental and social change. The conceptual framework on biodiversity and ecosystem services developed by the Inter-Governmental Platform on Biodiversity and Ecosystem Services (IPBES), describes these relationships in terms of a social-ecological system that operates at various scales in time and space. Different cultures and peoples express similar concepts in diverse ways; for example, the world views of many IPLCs emphasise their responsibility to "live well", which includes living in balance with nature. The CBD recognises these linkages in its Articles 8(j), 10(c), as well as in Aichi Biodiversity Target 18 of the Strategic Plan for Biodiversity 2011-2020. The information contained in this report demonstrates that integrating and mainstreaming biological and cultural diversity into all aspects of implementation of the Strategic Plan is essential if current negative trends are to be countered. Aichi Biodiversity Target 18, on traditional knowledge and customary use, is central to this endeavour and represents a cross-cutting theme, in that it enables implementation of all other targets.

IPLCs' traditional knowledge, customary practices and local innovations offer diverse approaches to addressing the high demand for land for agriculture and the collapse of wild fisheries: two of the five principal challenges to successful implementation identified in GBO-4. More broadly, through customary systems of land and resource use and through responsible governance of Indigenous Territories and Community Conserved Areas (ICCAs), many IPLCs are working to keep the use of natural resources within safe ecological limits, to reduce anthropogenic pressures on coral reefs and other vulnerable ecosystems, to conserve threatened species that have particular cultural significance, and to maintain the genetic diversity of crops and domestic animals. Building on their traditional knowledge and natural resource management systems, and through participatory research and action, IPLCs have also made major contributions towards strengthening socio-ecological resilience against environmental variability and to carbon sequestration.

In many regards, recognition of and respect for traditional knowledge and customary use is increasing. For example, there is a substantial body of research confirming the efficacy of IPLC tenure and resource management systems in ecosystem management and in the conservation of habitats and genetic diversity. There is also real progress in bringing traditional and scientific knowledge together on the ground to improve natural resource management, partly through the use of innovative technologies. However, there are also major gaps in the mainstreaming of traditional knowledge and customary systems in processes related to the

Strategic Plan, and in the acknowledgement by all parties of the role of IPLCs in offering innovative approaches to current challenges related to biodiversity loss as well as with regard to challenges such as climate change.

IPLCs are actively seeking to raise awareness of biological and cultural diversity at all levels and are contributing to information flow in both directions: from the local to the global, and from the global to the local. Inter-cultural spaces and multi-stakeholder mechanisms (such as, for instance, the ICCA Consortium, the CBD-UNESCO Joint Programme on Biological and Cultural Diversity and the Satoyama Initiative) provide opportunities to share diverse approaches and agree on ways forward.

Strengthening partnerships with IPLCs for the implementation of the Strategic Plan for Biodiversity

IPLCs have an integral role to play in the overall achievement of the Strategic Plan. With greater support, and through partnerships, many of their contributions and collective actions have the potential to be scaled up and to inform national and international practice. Environmental monitoring by IPLCs is becoming an increasingly important component in collaborative environmental management, including in the control of Invasive Alien Species (IAS), and in early warning and risk prevention systems. These activities, along with complementary actions such as campaigns and litigious processes to help to hold polluters to account, are just some of the ways IPLCs can help to implement the Strategic Plan for Biodiversity and complement the efforts of Parties and other actors at all levels. Looking beyond the Strategic Plan to the Sustainable Development Goals 2030, IPLCs' contributions will also be integral to meeting the challenge of creating a fair and equal world where humanity lives in harmony with nature, consuming and producing products in a sustainable manner. However, to date, opportunities for the participation of IPLCs in global and national policy processes, including CBD processes, have remained limited. Specifically, many Parties have yet to develop effective mechanisms for the participation of IPLCs in the preparation of national biodiversity strategies and action plans (NBSAPs), or to acknowledge the contributions of IPLCs in national reports.

Respecting human rights of IPLCs and securing multiple benefits for all

IPLCs around the world are struggling to defend their human rights in line with international law, including their rights to their ancestral lands and resources, and to meet cultural and subsistence needs from their lands. They continue to suffer human rights abuses, both from those who wish to exploit their lands for commercial gain and also in the name of conservation when it is imposed from above without due attention to issues of equity and participation. Urgent steps need to be taken to uphold IPLCs' human rights in line with international law, to counter the rise in assassinations of environmental and human rights defenders, and to adjudicate legal recognition of IPLCs' lands, territories and resources. Securing human rights contributes to securing ecosystems and biodiversity, and there is now substantial research that supports this assertion. For example, numerous studies confirm that upholding the human rights of IPLCs and ensuring their full and effective participation in decisions affecting their lands, territories, resources and traditional knowledge, including by seeking their prior informed consent, lays a strong foundation for securing multiple benefits, not only for themselves but also for society in general.

Recommendations

Recommendations for progress on the Strategic Goals

The following have been identified from the material presented in this publication as actions related to IPLCs that could accelerate progress in the implementation of the Strategic Plan for Biodiversity, if more widely applied.

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

- Increase, support and strengthen communication channels for education and awareness-raising about biodiversity and cultural diversity, including under the joint awareness-raising programme between UNESCO and the CBD Secretariat on the importance of biological and cultural diversity and IPLCs' knowledge, lifestyles and low-impact development models.
- Increase engagement in intercultural dialogues on biodiversity, maintaining respect for diverse views and values.
- Integrate values related to biodiversity and cultural diversity in planning and decision-making, consistent with the CBD's ecosystem-based approach.
- Establish inclusive and robust mechanisms for increased participation and engagement of IPLCs in sustainable development planning and decision-making at all levels.
- Develop guidelines on the use of monetary and non-monetary incentives (including the granting/recognition of secure land tenure and access rights) to ensure respect for IPLCs' rights and consideration for their needs and cultural perspectives.
- Develop partnerships with IPLCs to implement and monitor compliance with economic, environmental, social, and cultural sustainability standards.
- Develop binding national regulations that complement existing voluntary standards in order to address underlying drivers of biodiversity loss. These should include national regulations for commodity supply chains.

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

- Develop national and local plans and targets for the effective implementation of the CBD Plan of Action on Customary Sustainable Use.
- Involve indigenous knowledge-holders in relevant expert groups and include case studies of community actions in CBD reports and databases.
- Enhance collaboration between traditional knowledge-holders and scientists to develop innovative approaches to sustainable resource use and climate change mitigation.
- Recognise, award and support IPLC practices related to sustainable agriculture, aquaculture and forestry including collaborating with the UN Food and Agriculture Organizations (FAO) initiative Globally Important Agricultural Heritage Systems (GIAHS).
- Increase institutional support and funding for community-based environmental monitoring, including monitoring related to combating invasive alien species, pollution, and anthropogenic pressures on vulnerable ecosystems.
- Provide technical and financial support for participatory community risk and vulnerability assessments and for community-based adaptation action plans.
- Ensure that zero deforestation commitments safeguard IPLCs' livelihoods and tenure security.
- Support IPLCs' calls for moratoria on unsustainable resource extraction and monoculture plantations.

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

- Support area-based conservation by IPLCs through formal recognition of customary rights under national law, and through appropriate recognition of ICCAs and sacred sites.
- Enhance implementation of the CBD Programme of Work on Protected Areas and review national institutional and legal frameworks on protected area governance and management.
- Urgently address equity and human rights issues related to conservation (particularly protected areas). Displacement of IPLCs from their lands and resources in contravention of international law should cease immediately.
- Promote the development of national monitoring and conflict resolution mechanisms to complement existing international mechanisms.
- Increase training opportunities for IPLCs and engagement with traditional knowledge-holders to increase the effectiveness of conservation actions.
- Increase technical and financial support for community mapping, community-based monitoring and wider community conservation actions.
- Enhance support for on-farm, in-situ conservation by IPLCs, with a special focus on women's contributions and the role of traditional knowledge.

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

- Legally recognise customary rights and tenure of IPLCs over lands, territories and resources and ensure that carbon sequestration and restoration measures give due regard to these rights.
- Increase support for IPLC practices that enhance ecosystem resilience, restore degraded ecosystems and contribute to carbon sequestration and climate adaptation.
- Expand awareness-raising, experience-sharing and capacity-building activities in relation to the Nagoya Protocol, and develop national and international legal frameworks for its implementation, with full participation of IPLCs.
- Strive for greater dialogue and mutual respect and understanding on concepts related to ecosystems/habitats, ecosystem services, resilience, climate change, carbon offsets and equitable benefit-sharing.
- Take measures to counter the rise in assassinations of environmental and human rights defenders and ensure that the perpetrators are brought to justice.

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

- Ensure that effective national and sub-national mechanisms are in place for the full and effective participation of IPLCs in policy processes related to the Strategic Plan, including NBSAP processes and the compilation of national reports, and in local implementation.
- Mainstream the Programme of Work on Article 8(j) and Related Provisions and the Plan of Action on Customary Sustainable Use and scale up their implementation by incorporating Aichi Target 18 and linkages with all other Aichi Targets into NBSAP processes.
- Establish improved mechanisms for the systematic monitoring of progress on the headline indicators related to Target 18.
- Provide systematic support, including funding, for concrete actions: to promote the revitalisation of indigenous languages and traditional occupations, improve land tenure security, and for effective application of traditional knowledge and customary systems of sustainable use.
- Explore, in consultation with IPLCs, issues around collective actions and ways to aggregate data on collective actions under all the targets in the Strategic Plan.
- Broaden the science–policy interface to include indigenous and local knowledge alongside scientific knowledge, and strengthen the interfaces between global, national, and community levels for knowledge generation, dissemination and application.

Overall recommendations for the future

The following general recommendations for action can be drawn from the material presented in this publication:

- Recognise that biological and cultural diversity are inextricably linked, in line with the conceptual framework for the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES-2/4), and use them together in integrated approaches to conservation and sustainable use.
- Strengthen mechanisms for the participation of IPLCs in global, national and local policy processes and implementation.
- Acknowledge the contributions of IPLCs' collective actions in the implementation of the Strategic Plan, including through their inclusion in NBSAP processes and national reports.
- Mainstream traditional knowledge and customary systems of resource use throughout the Strategic Plan and acknowledge their role in offering innovative approaches to current challenges related to biodiversity loss and climate change.
- Uphold the human rights of IPLCs in line with international law. All human rights violations should be publicly denounced by governments and justice pursued for the victims.
- Adjudicate legal recognition of lands, territories and resources of IPLCs.
- Increase support to IPLC initiatives and ensure that it is managed in a culturally appropriate and accessible manner.
- Mitigate the harmful impacts of biodiversity funding on IPLCs and their lands and territories, applying social safeguards and free, prior and informed consent (FPIC).

Kaliña and Lokono youth at indigenous education festival, Marowijne District, Suriname (2013). Courtesy Julie Sutton.

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This publication presents the perspectives and experiences of indigenous peoples and local communities (IPLCs) on the implementation of the Strategic Plan for Biodiversity. It is intended to complement the fourth Global Biodiversity Outlook (GBO-4) by presenting the perspectives and experiences of indigenous peoples and local communities (IPLCs), and describing their contributions towards the realisation of each of the Strategic Plan's goals and targets. To this end, accounts of local actions in different parts of the world were gathered from members of the International Indigenous Forum on Biodiversity (IIFB). The findings demonstrate that IPLCs are contributing enormously to the implementation of the Strategic Plan through their collective and on-the-ground actions, and that there is great potential for future collaboration between IPLCs and other actors in this regard.

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