



Local Biodiversity Outlooks 2

The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures.

A complement to the fifth edition of the *Global Biodiversity Outlook*.

Published by Forest Peoples Programme, in collaboration with: Centres of Distinction on Indigenous and Local Knowledge, Indigenous Women's Biodiversity Network, International Indigenous Forum on Biodiversity, and Secretariat of the Convention on Biological Diversity.

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Published in 2020 by Forest Peoples Programme

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Graphic design and illustration by Minute Works.

Readers of Aboriginal and Torres Strait Islander descent are warned that there may be images of deceased persons within this document. The authors apologise in advance for any distress this may cause, as it is not intentional.

← ●
Kichwa villagers on a timber raft on the Arajuno
River, Ecuador. Credit: Tomas Munita.



Suggested citation

Forest Peoples Programme, International Indigenous Forum on Biodiversity, Indigenous Women's Biodiversity Network, Centres of Distinction on Indigenous and Local Knowledge and Secretariat of the Convention on Biological Diversity (2020) *Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures. A complement to the fifth edition of Global Biodiversity Outlook*. Moreton-in-Marsh, England: Forest Peoples Programme. Available at: www.localbiodiversityoutlooks.net

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Dedication

We dedicate this publication to the individuals, communities and peoples who are protecting the world's soils, forests, and rivers, and the biodiversity that they nurture. We stand with these brave environmental human-rights defenders who are routinely harassed and criminalised—some even killed—for standing up for their rights and for nature. In particular, we dedicate this publication to the indigenous peoples who face disproportionately grave risks when defending their lands, territories, waters and resources from destruction.

← ●

A woman sets fire to dry grass at Manikapitji at the beginning of the dry season in Australia. As fires swept through many parts of the country at the end of 2019 and beginning of 2020, various scientists and policymakers called for a revitalisation of Aboriginal fire management systems to rebuild ecosystem resilience and avoid similar carbon-releasing disasters in the future. Credit: Penny Tweedie.

About this report

Local Biodiversity Outlooks presents the perspectives and experiences of indigenous peoples and local communities (IPLCs) on the current social-ecological crisis, and their contributions to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to the renewal of nature and cultures. The first edition (*LBO-1*) was produced in 2016 as a complement to the fourth edition of the *Global Biodiversity Outlook (GBO-4)* and has become a key source of evidence about the actions and contributions of IPLCs towards achieving the objectives of the Convention on Biological Diversity.

In 2016, at the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 13), Parties welcomed the first edition and requested a second edition to be launched in conjunction with the fifth edition of the *Global Biodiversity Outlook (GBO-5)* in 2020. *Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures (LBO-2)* has been prepared in response to that request through a collaboration of the International Indigenous Forum on Biodiversity, the Indigenous Women’s Biodiversity Network, the Centres of Distinction on Indigenous and Local Knowledge, Forest Peoples Programme and the Secretariat of the Convention on Biological Diversity. It brings together information and case studies from indigenous peoples, local communities and community-based organisations around the world, with information from published academic and non-academic sources.

The *LBO-2* editorial board was composed of IPLC representatives from the seven indigenous socio-cultural regions recognised by the UN Permanent Forum on Indigenous Issues: Ramiro Batzin, Ruth Spencer, Marie-Josée Artist, Tonio Sadik, Preston Hardison, Polina Shulbaeva, Viacheslav Shadrin, Gladman Chibememe, Lakpa Nuri Sherpa and Tui Shortland.

The lead authors for this publication and the separate summary of conclusions and recommendations were Joji Cariño and Maurizio Farhan Ferrari, together with Andrew Whitmore, Joyce Godio, Jo Ann Guillao, Helen Newing, Claire Bracegirdle and Helen Tugendhat, and vital contributions from over 50 authors and communities who provided case studies and examples. The publication was copyedited by Mary O’Callaghan, designed and illustrated by Minute Works, with contributions from Warren Hickson and Alex Foster. Sarah Roberts was the finance manager for this project.

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

Acknowledgements

This publication is based on case studies submitted by numerous authors, communities and organisations. We would like to thank all contributors: Astrid Álvarez; Jorge Andreve; Association of Traditional Healers for Treatment of Venom Bites; Brenda Asuncion; Grace Balawag; Edith Bastidas; Ramiro Batzín; Damein Bell; Eduardo S. Brondizio; Josefa Cariño-Tauli; Alex Carter; Kevin K.J. Chang; Florence Daguitan; Dayak Bahau Busaang community of Long Isun; Tatiana Degai; Federación de Comunidades Nativas del Ucayali y Afluentes; Federación Indígena Empresarial y Comunidades Locales de México, A.C. (CIELO) y Sociedad Cooperativa Lool Xaam SC de RL de CV; Forest Peoples Programme; Gbabandi; Cicilia Githaiga; Vu Thi Hien; IISAAK OLAM Foundation; International Indigenous Forum on Biodiversity; Inuit Circumpolar Council—Alaska; Jawatankuasa BioBudaya Melangkap; Eric K. Kimalit; Jadder Mendoza Lewis; Venecio Lingbawan; Adiwasi Samta Manch; Donald Rojas Maroto; Onel Masardule; Alice Mathew; Maya Leaders' Alliance; Alexandra McGregor; Jane Mellors; Bakoliarimisa Tsiorisoa Mihanta; Zsolt Molnár; Jennifer Moranto; Nirmanee Development Foundation; Shapiom Noningo; Okani; Wanli Ou; Partners for Indigenous Knowledge Philippines; Laura Pearson; Leonard Philip; Jantanee Pichetkulsampan; Joám Evans Pim; Michael Rasheed; László Sáfián; Patrice Sagbo; Mastupang Somoi; Miwa Tamana; Lanash Thanda; Chief Dana Tizya-Tramm; Nutdanai Trakansuphakon and Héctor Jaime Vinasco.

Additional research and information were provided by Chrissy Grant, Preston Hardison, Polina Shulbaeva and Ruth Spencer.

Drafts of this publication were made available for peer review. We are very grateful to all peer reviewers as their inputs greatly enhanced the publication. We are also grateful for all feedback on early drafts, including invaluable comments from staff at the Secretariat of the Convention on Biological Diversity and at Forest Peoples Programme.

This publication was made possible through financial contributions from the Secretariat of the Convention on Biological Diversity; the Japan Biodiversity Fund; the Department for Environment, Food & Rural Affairs of the Government of the United Kingdom and Northern Ireland; the Ministry of the Environment of the Government of Finland; the Swedish International Development Cooperation Agency (Sida) through SwedBio at Stockholm Resilience Centre; the Government of France through the Embassy of France to the United Kingdom; the Torres Strait Regional Authority (Australia); the Nia Tero foundation; The Christensen Fund; the Ford Foundation; and the Assembly of First Nations (Canada).

Forewords



Convention on Biological Diversity

The second edition of the *Local Biodiversity Outlooks (LBO-2)* complements the fifth edition of the *Global Biodiversity Outlook (GBO-5)* with stories from diverse indigenous and local communities all contributing to the objectives of the Convention on Biological Diversity. *LBO-2* is published at a critical time when the assessment of the implementation of the 2011-2020 Strategic Plan for Biodiversity, and the negotiation of the post-2020 global biodiversity framework are on-going.

It demonstrates the contributions of indigenous peoples and local communities on each target of the 2011-2020 Strategic Plan for Biodiversity. It gives voice to those people living directly in, and as part of nature. As such, it provides a valuable source to ground-truth what is going on at the local level at the interface of conservation and sustainable use.

LBO-2 reminds us that the emerging global biodiversity framework is the opportunity to reinforce the connection between nature and our health. It highlights the importance of traditional knowledge, to protect Nature's essential contributions to people, which includes, among other benefits, a healthy and sustainable environment, traditional medicines, as well as food security.

At a time when *GBO-5* reports that most of the targets of the Strategy Plan for Biodiversity 2011-2020 may not be met, it is important to seek out the optimism that is embodied by those who live closely with Nature. *LBO-2* embodies an optimism that the destruction of Nature and the dramatic loss of biodiversity and cultural diversity can be successfully reversed, by embracing the values, and building on the collective and local actions of the World's indigenous peoples and local communities.

As partners in the implementation of the Convention, indigenous peoples and local communities can play a fundamental role in addressing solutions in the post-2020 global biodiversity framework. The many stories in *LBO* encourage me to call on Parties and governments, and the international community, to unleash the power of the collective and local actions of indigenous peoples and local communities, to assist humanity to achieve our vision of living in harmony with Nature, by 2050.

Elizabeth Maruma Mrema

Executive Secretary
Convention on Biological Diversity

International Indigenous Forum on Biodiversity

Since 1996, indigenous peoples and local communities (IPLC) have actively participated in the creation and presentation of proposals in CBD processes through efforts coordinated under the International Indigenous Forum on Biodiversity (IIFB). By means of these efforts, they have transformed the Working Group on Article 8(j) into a key platform promoting consultation and active dialogue between the Parties to the CBD and the IIFB. The new post-2020 global biodiversity framework should be an opportunity for the Parties to reaffirm their commitment to respect and recognise the rights, knowledge and practices of indigenous peoples and local communities, as well as create the conditions for their full and effective participation in the work of the Convention.



Today, the world faces a new challenge with the COVID-19 pandemic, which is exposing the causes of impacts on biodiversity. It is critical to recognise indigenous territories and promote indigenous systems of use, management, and conservation of biodiversity as sustainable models that allow the development of *Ütz K'aslemal* or *good living* of humanity.

In order for the 2050 vision to be successful, the contribution of all sectors must be taken into account. In our case, it must be in line with indigenous worldviews that place emphasis on the intrinsic relationship between human beings, Mother Nature and the universe, and the essential link that exists between nature and culture. The period beyond 2020 must be based on approaches and frameworks that place rights, gender, and intergenerational equality as key components for progress.

This publication is a key instrument that shows how the actions and contributions of IPLC support the achievement of the objectives of the CBD, which inspire and invite us to walk together, unite our thoughts and learn from the key lessons of the processes that will allow us to leave a pathway, thus ensuring the future of nature and humanity.

Ramiro Batzin

Maya Kaqchikel
Executive Director, SOTZ'IL
IIFB Global Coordinator



UN Environment Programme

To succeed, the post-2020 global biodiversity framework needs ambitious targets, along with solutions and means of delivering them. As *Local Biodiversity Outlooks 2* shows, indigenous people and local communities (IPLCs for short) have long been deploying the kind of solutions the world needs to adopt.

IPLCs are vital custodians of nature. Over a quarter of global land area is owned, managed, used or occupied by IPLCs. This includes over one third of the area that is formally protected. Up to 80 per cent of forest biodiversity lies within indigenous people's territories.

They are successful custodians too. Even though biodiversity is in decline across the globe, it is declining less rapidly in areas managed by IPLCs. IPLC territories are islands of diversity in a sea of degraded ecosystems.

Despite their track record of success, the territories of IPLCs are under threat: from agriculture, infrastructure and more. And, when representatives of IPLCs try to protect their lands and waters, they can pay for their efforts with their lives. IPLCs, and especially the women within them, need secure land tenure and access to their natural resources.

This report recognizes the knowledge, innovations, practices, institutions and values of IPLCs in nature conservation, restoration and sustainable use. By drawing on perspectives and experiences of IPLCs during implementation of the Strategic Plan for Biodiversity 2011-2020, this report informs the development and implementation of the post-2020 global biodiversity framework.

I would like to thank all those involved in the preparation of this publication, and especially the contributions from indigenous peoples. I look forward to helping indigenous and local ways of knowing, being and doing to support the global processes that lead us towards the 2050 Vision of Living in Harmony with Nature.

Inger Andersen

Under-Secretary-General of the United Nations and
Executive Director of the UN Environment Programme

Centres of Distinction on Indigenous and Local Knowledge

The Convention on Biological Diversity's recognition of the integral linkages between traditional knowledge and biodiversity has promoted global understanding about the contributions of indigenous peoples and local communities to sustaining life on Earth. By welcoming the publication of the 2nd edition of *Local Biodiversity Outlooks (LBO-2)* as a complement to CBD's 5th *Global Biodiversity Outlook (GBO-5)*, showcasing IPLCs' collective contributions during the UN Decade on Biodiversity, the Parties to the CBD have signalled a strategic partnership between governments and peoples for the conservation, sustainable use and benefit-sharing from the use of biodiversity.



LBO-2 makes a critical assessment about the outcomes of this strategic partnership from the perspective of indigenous peoples and local communities. Through written contributions to *LBO-2* and LBO Online, communities express their lived experiences and collective stories about confronting globally unsustainable economic, political and social systems leading to the rapid loss of biological and cultural diversity. Importantly, *LBO-2* also celebrates myriad signs of hope embodied in community resilience, problem-solving and culture-based practices of living in harmony with nature.

Through community-based monitoring and information systems, IPLCs are generating data to inform local governance and self-determination, as well as contributing evidence in support of broader reporting on the implementation of global commitments. These serve as true measures about progress on the ground towards meeting globally agreed targets on biodiversity, climate action and sustainable development. Therefore, *LBO-2* is a timely record of IPLC transitions towards revitalising human-nature relationships.

The global network of Centres of Distinction on Indigenous and Local Knowledge, as institutions of cultural reflection, inter-generational transmission of knowledge and inter-community exchange and learning, are proud to be collaborators with many other partners, in publishing *LBO-2*. We welcome the proliferation of such initiatives among IPLCs in all global regions, countries and territories around the world, as part of our continuous renewal of cultures and natures.

Joji Carino

Coordinator
Centres of Distinction on Indigenous and Local Knowledge



Intergovernmental Platform on Biodiversity and Ecosystem Services

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is pleased to welcome the second edition of the *Local Biodiversity Outlooks* (LBO). This second LBO demonstrates and describes the many diverse ways that Indigenous peoples and local communities (IPLC) are working for the conservation and sustainable use of biodiversity, and how these combined actions across large areas of the planet make a significant contribution to global goals.

Since its inception, IPBES has recognised the important contributions of indigenous and local knowledge to biodiversity conservation and sustainable use of nature and identified indigenous peoples and local communities as crucial actors in understanding, monitoring, managing and restoring biodiversity. The operating principles of IPBES adopted in 2012 in Panama include the recognition and respect of the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems. In 2017, the Plenary of IPBES approved, at its fifth session, an ambitious approach to recognising and working with indigenous and local knowledge in IPBES. Within this approach, IPBES has developed a series of participatory activities that have enhanced work with indigenous and local knowledge in dynamic and mutually beneficial ways.

This approach was successfully implemented in the production of the IPBES Global Assessment of Biodiversity and Ecosystem Services which was approved in 2019. The Global Assessment, concluded, among other key messages, that Nature is generally declining less rapidly in indigenous peoples' land than in other lands, but is nevertheless declining, as is the knowledge to manage it.

The wealth of knowledge, case studies and pathways for change presented in this second LBO will now form an important resource for the authors of the three ongoing IPBES assessments, on sustainable use of wild species, diverse values of nature, and invasive alien species, as well as two new assessments on the nexus of biodiversity, food, water, health and climate change, and transformative change. The team behind the second LBO, and all who contributed their knowledge, are to be congratulated on bringing together this very valuable resource.

Anne Larigauderie

Executive Secretary of the Intergovernmental Platform on Biodiversity and Ecosystem Services

Forest Peoples Programme

The Forest Peoples Programme is proud to be involved in the Local Biodiversity Outlooks initiative, a collaboration between a wide range of actors which seeks to record, document, share and highlight the contributions of indigenous peoples and local communities to the conservation and sustainable use of biodiversity. We welcome this second edition of the *Local Biodiversity Outlooks* report. Its launch in this year—2020—is an important contribution to the on-going discussions on a post-2020 Global Biodiversity Framework and beyond.

The *Local Biodiversity Outlooks* report serves as a powerful companion to the *Global Biodiversity Outlook* report in its review of achievements secured during the decade of the UN Strategic Plan for Biodiversity (2011–2020). It is clear from the evidence presented in the report how central indigenous peoples and local communities, and the upholding of their rights, have been in contributing to all of the Aichi targets.

Looking ahead there is a genuine opportunity for governments from every region of the world to enter into partnership with IPLCs to support their sustainable visions, and to achieve the new biodiversity targets that will be agreed. As demonstrated in this report, grounded partnerships towards achieving biodiversity and nature stewardship goals are essential and contribute also to both the Sustainable Development Goals and climate change targets. In fact, it is only through partnership with IPLCs that any of these targets can be achieved.

We look forward to further collaboration with the co-publishers of this important report.

James Whitehead

Director
Forest Peoples Programme



Use of terms and abbreviations

Use of terms

- This report uses the term *indigenous peoples and local communities*, or IPLCs, except in cases or contexts referring specifically to either indigenous peoples or local communities.
- The term *indigenous and local knowledge(s)* is used except in cases or contexts where *traditional knowledge* is more appropriate (e.g. as used by the Convention on Biological Diversity).
- The phrases ‘IPLC lands, waters, territories and resources’ and ‘IPLC lands and waters’ are used with some variations depending on context.

Abbreviations

ABS	access and benefit-sharing
ANWR	Arctic National Wildlife Refuge (Alaska)
BIOFIN	Biodiversity Finance Initiative (United Nations Development Programme)
CBD	Convention on Biological Diversity
CBMIS	community-based monitoring and information systems
CIFOR	Centre for International Forestry Research
COP	Conference of the Parties (governing body of the Convention on Biological Diversity)
COP 10	Tenth meeting of the Conference of the Parties to the CBD (2010)
COP 12	Twelfth meeting of the Conference of the Parties to the CBD (2014)
COP 13	Thirteenth meeting of the Conference of the Parties to the CBD (2016)
COP 14	Fourteenth meeting of the Conference of the Parties to the CBD (2018)
COP 15	Fifteenth meeting of the Conference of the Parties to the CBD (planned for 2021)
COP-MOP	Conference of the Parties serving as the meeting of the Parties to the Protocol
EIA	environmental impact assessment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GBO-4	<i>Global Biodiversity Outlook</i> fourth edition (2016)
GBO-5	<i>Global Biodiversity Outlook</i> fifth edition (2020)
GEF	Global Environment Facility
GEF SGP	Global Environment Facility Small Grants Programme

GPS	Global Positioning System
GTANW	Autonomous Territorial Government of the Wampis Nation
HLPE	high level panel of experts
ICCA	'territories and areas conserved by indigenous peoples and local communities' or <i>territories of life</i>
ICE	Indigenous Circle of Experts (Canada)
IFAD	International Fund for Agricultural Development
IIED	International Institute for Environmental Development
IIFB	International Indigenous Forum on Biodiversity
ILO	International Labour Organization
IPA	indigenous protected area
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCA	indigenous protected and conserved areas
IPCC	Intergovernmental Panel on Climate Change
IPLCs	indigenous peoples and local communities
IPMG	Indigenous Peoples Major Group for Sustainable Development
IUCN	International Union for the Conservation of Nature
LAC	Latin America and the Caribbean
LBO	<i>Local Biodiversity Outlooks</i>
LBO-1	<i>Local Biodiversity Outlooks</i> first edition (2016)
LBO-2	<i>Local Biodiversity Outlooks</i> second edition (2020)
LMMA	locally managed marine area
MIHARI	Madagascar Locally Managed Marine Area Network
NBSAP	national biodiversity strategy and action plan
NGO	non-governmental organisation
OECD	Organisation for Economic Co-Operation and Development
OECM	other effective area-based conservation measure
PCB	polychlorinated biphenyls (man-made organic chemicals)
REDD	reducing emissions from deforestation and forest degradation
REDD+	the UN REDD programme developed by Parties to the <i>UNFCCC</i>
RMFA	responsible marine fishing area
RSPO	Roundtable for Sustainable Palm Oil
SDG	Sustainable Development Goal
SGP	Small Grants Programme (of the Global Environment Facility)
SRDC	South Rupununi District Council (Guyana)
SSF	sustainable small-scale fisheries
STAP	Scientific and Technical Advisory Panel (Global Environment Facility)
UII	Universidad Indígena Intercultural
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
<i>UNFCCC</i>	<i>United Nations Framework Climate Change Convention</i>
VTIK	Vietnamese Indigenous Knowledge Network
WHO	World Health Organization
WWF	World Wildlife Fund

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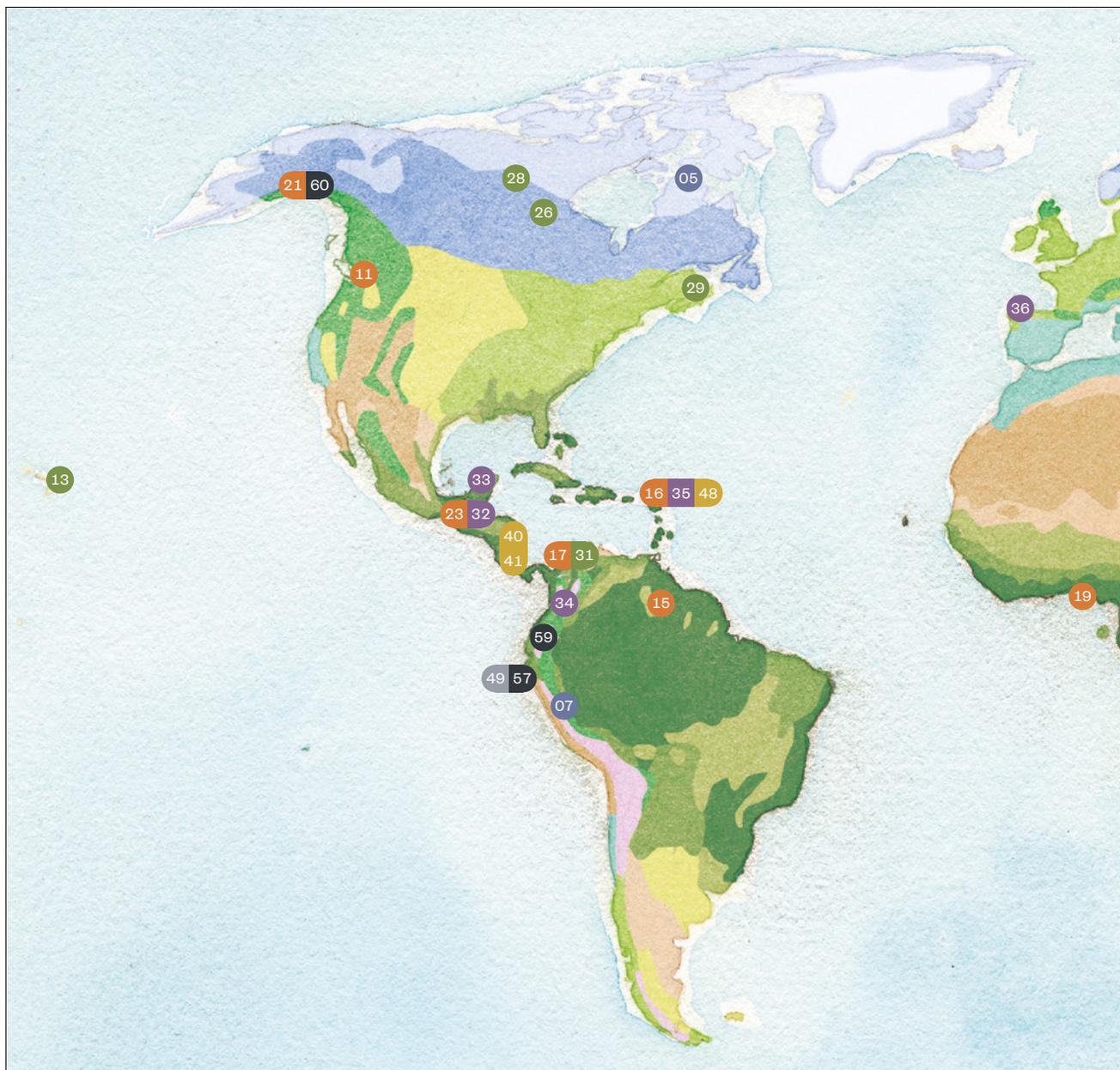
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Case study map

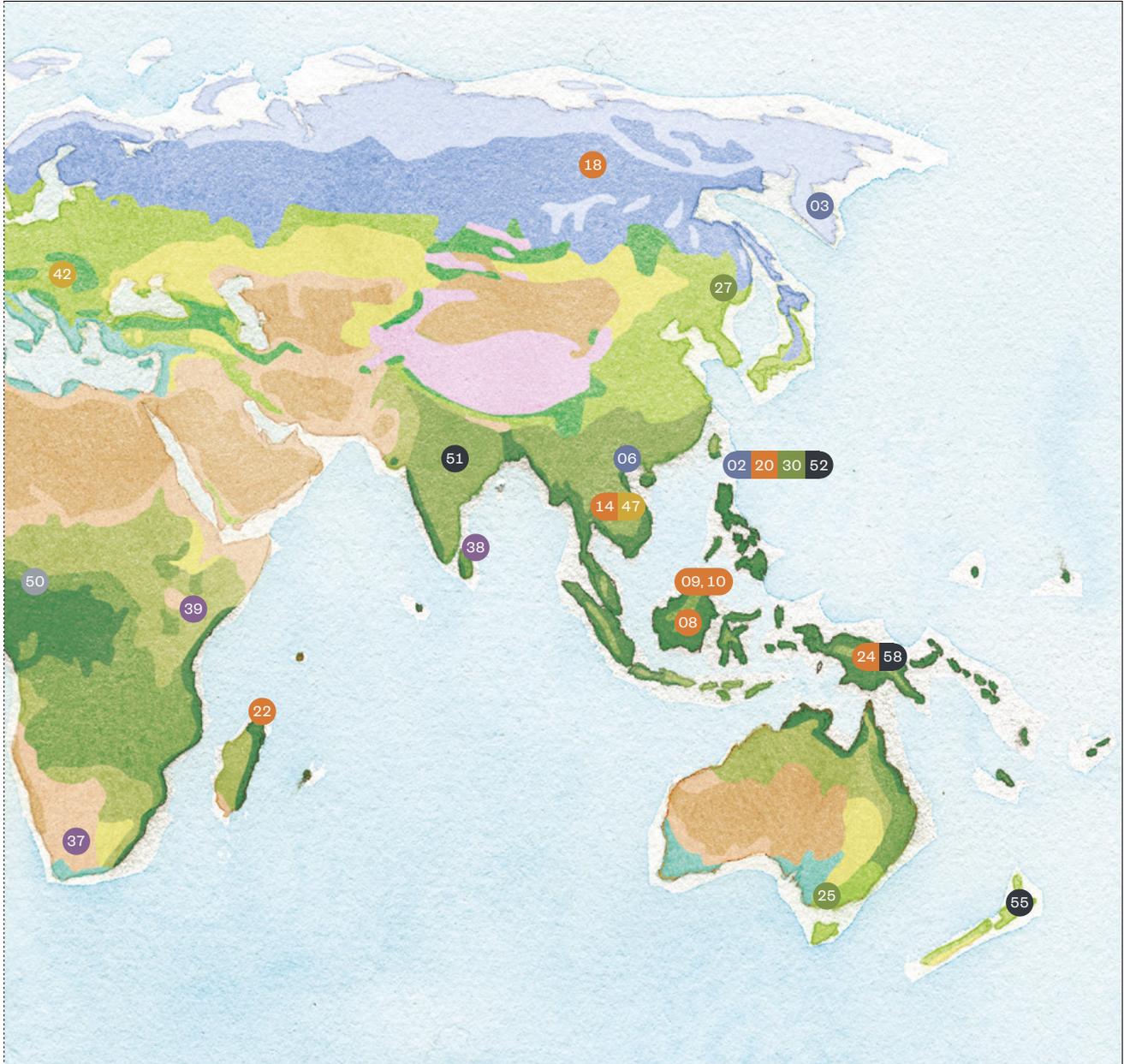


At least 50% of the world's land is collectively managed by IPLCs under customary tenure systems.

The lands of IPLCs contain much of the world's remaining biodiversity.

Only 10% are legally secured.

-  Tropical and subtropical broadleaf forests
-  Tropical and subtropical evergreen forests
-  Montane grasslands and shrulands
-  Temperate grasslands
-  Temperate broadleaf forest



- | | | | |
|---|----------------------------|---|-----------|
|  | Temperate evergreen forest |  | Taiga |
|  | Mediterranean vegetation |  | Arid area |
|  | Savanna |  | Deserts |
|  | Polar region | | |
|  | Tundra | | |

Key messages

1

Aichi Biodiversity Target 18 of the Strategic Plan for Biodiversity 2011–2020, which relates to traditional knowledge and customary sustainable use, has not been met. Ongoing disregard of the vital contributions of indigenous peoples and local communities (IPLCs) to biodiversity conservation and sustainable use—including in national biodiversity strategies and action plans—constitutes a major missed opportunity for the United Nations Decade on Biodiversity 2011–2020. This neglect has affected the under-achievement of all 20 Aichi Biodiversity Targets, with fundamental lessons remaining to be learnt about securing the future of nature and cultures.

Putting the cultures and rights of IPLCs at the heart of the 2050 biodiversity strategy would deliver sustainable livelihoods and wellbeing, and positive outcomes for biodiversity and climate.

2

Overcoming dualism, separation and imbalances in relationships between humans and nature is central to addressing the biodiversity and health crises, including the rise of zoonotic diseases and pandemics. Sustained interactions and partnerships between sciences and indigenous and local knowledge systems—inclusive of women, men, elders and youth—are enriching contemporary problem-solving with holism and reciprocity.

Indigenous ways of knowing and being evoke and inspire new narratives and visions of culture and nature working together within a living and sacred Earth.

IPLC values, ways of life, knowledge, resource governance and management systems, economies and technologies have much to offer in reimagining diverse global systems that can deliver shared visions of solidarity, leaving no one behind.

IPLCs propose changes towards more balanced relationships within societies and with nature through six key transitions:

- Cultural transitions towards diverse ways of knowing and being
- Land transitions towards securing customary land tenure of IPLCs
- Governance transitions towards inclusive decision-making and self-determined development
- Incentives and financial transitions towards rewarding effective culture-based solutions
- Economic transitions towards sustainable use and diverse local economies
- Food transitions towards revitalising indigenous and local food systems.

These transitions have now become imperatives for the survival of IPLCs and the health of people and planet. They are intergenerational visions honouring the historical struggles and wisdom of past generations, drawing from the experience and innovations of today's living generations, and embodying the legacy and hopes for future generations. They contribute to humanity's joint endeavour to save our common home.

Executive summary

Local Biodiversity Outlooks presents the perspectives and experiences of indigenous peoples and local communities (IPLCs) on the current social-ecological crisis and their contributions to the Strategic Plan for Biodiversity of the Convention on Biological Diversity. The first edition (*LBO-1*) was produced in 2016 as a complement to the fourth edition of the *Global Biodiversity Outlook* (*GBO-4*) and has become a key source of evidence about the actions and contributions of IPLCs towards achieving the objectives of the Convention on Biological Diversity (CBD).

Part II: Progress during the United Nations Decade on Biodiversity 2011–2020; Key messages on the Strategic Plan for Biodiversity and the Aichi Biodiversity Targets from the perspectives of IPLCs

Strategic Goal A

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

Key message

Worldviews that separate nature and culture are an underlying cause of biodiversity loss, as cultures condition behaviours and frame people's relationships with other people and with the natural world. The holistic and diverse value systems and ways of life of IPLCs across the world offer culturally distinctive visions of alternative sustainable futures which need to be understood, respected and protected across the whole of government, economy and society. Yet, the cultures of IPLCs and the associated rich biodiversity on their lands continue to be eroded and displaced by dominant unsustainable production and consumption systems that are destroying the planet's biodiversity.

Recommendations

In addressing the underlying causes of biodiversity loss, IPLCs, governments, conservation organisations and other actors should:

- Promote holistic approaches linking nature and culture within integrated social-ecological systems.
- Support cultural revitalisation and inter-cultural exchange.
- Engage IPLCs in local, national and global decision-making processes, upholding secure land tenure, local and indigenous knowledge, and full respect for individual and collective rights.
- Develop a new policy framework for sustainable production and consumption which enables the immediate upscaling of sustainable local economies.

Strategic Goal B

Reduce the direct pressures on biodiversity and promote sustainable use.

Key message

Natural habitats, plants and animals, and the benefits that people receive from nature are declining at an alarming rate, in large part as a direct result of the expansion of agribusiness and extractive industries fuelled by the current economic growth paradigm. Their decline is slower in the lands, waters and territories of indigenous peoples than elsewhere as a result of their governance, values and practices, but they are still under great pressure. IPLCs in many countries are central actors in sustainable agriculture, fisheries, aquaculture and forestry and as caretakers of habitats. A radical transformation in governance is required, to one that fully recognises the role of IPLCs in conservation and sustainable use of biodiversity, and their contribution to protecting ecosystems, both of which are currently under-reported and under-valued.

IPLCs own and manage at least 50 per cent of the world's land area, and many are working in policy fora and on the ground to defend their territories, manage their resources sustainably, and combat pollution, invasive alien species and the impacts of climate change. However, their lands and waters and the biodiversity that they contain are under direct threats from industrial-scale development and illegal incursions. IPLCs working to counter these threats and conserve their lands are paying a high price for doing so. They are facing increasing intimidation, criminalisation and violence, including assassinations of community leaders.

Recommendations:

- Governments and other actors should support IPLCs to protect their lands, waters, territories and biodiversity by applying a human-rights-based approach, including:
 - measures to secure IPLCs' customary land and water tenure and uphold their rights;
 - effective safeguards for environmental defenders;
 - support for greater participation of IPLCs in relevant policy forums;

- harmonisation of relevant aspects of international and national law and policy;
- zero tolerance of human rights violations.
- National and global statistics on the contributions of small-scale producers, including IPLCs, should be improved.
- Innovative fiscal measures should be taken to support local sustainable economies.
- Accountability of industries responsible for pollution and environmental damage should be increased.
- Support and resources for IPLCs' important contributions in addressing direct drivers of biodiversity loss, based on indigenous and local knowledge and practices, should be increased.

Strategic Goal C

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

Key message

IPLCs are on the frontlines safeguarding genetic diversity, species diversity and ecosystem diversity. A high proportion of ecosystems rich in biodiversity, including many threatened species, is governed under customary or community-based regimes. Moreover, IPLCs also manage and enhance genetic diversity, especially in their highly diverse agroecological production systems.

A conceptual change is called for from 'conservation as the objective' of external interventions in seemingly 'natural' areas without human influence, towards understanding that high conservation outcomes arise from ongoing culturally rooted relationships between humans and nature, as manifested by IPLCs with their lands, territories and resources. A radical transformation is needed from current conservation approaches that exclude and alienate IPLCs, to rights-based collaborative approaches that support and promote community-led conservation and customary sustainable use and that celebrate the mutual relations between nature and culture.

Recommendations:

- Governments, conservation agencies and relevant actors should promote and support the transformation of conservation towards:
 - recognising and prioritising the complex and enriched ecological mosaic that IPLCs' lands and territories deliver, with high conservation outcomes blossoming from culturally rooted approaches;
 - rights-based collaborative approaches that support and promote community ways of life that enrich relationships between humans and nature;
 - a qualitative focus on fair and good governance, justice and equity rather than a focus on quantitative expansion of protected and conserved areas.
- All actors should recognise and respect IPLCs as rights-holders, and respect and support their distinct and special relationship to land, waters, territories and resources.
- Appropriate legal measures should be enacted for recognition of IPLC territories and self-governance.
- Support should be increased for community-led conservation.
- human rights and equity should be upheld in all forms of conservation.
- All actors should mainstream species protection, including in production landscapes and biocultural habitats, and work with IPLCs to protect and enhance genetic diversity, including in local food systems.
- All actors should commit to much greater coordination and cooperation across scales and jurisdictions for safeguarding genetic diversity, species diversity and ecosystem diversity.

Strategic Goal D

Enhance benefits to all from biodiversity and ecosystem services.

Key message

For IPLCs, the ecosystems and habitats that provide ‘essential services’ are their customary lands, territories, waters and resources, which support livelihoods and meet spiritual and cultural needs. Guided by IPLCs’ cultural ethics of maintaining harmonious relationships between humans and nature, collective lands and territories also play vital roles for the greater good by storing carbon, building ecosystem resilience, and in mitigating and adapting to climate change. Yet, under current economic and value systems these lands continue to be usurped and degraded by interventions to privatise and commodify these resources. Indigenous and local knowledge is particularly valuable in ecological restoration and resilience building, but this knowledge continues to be undervalued and is still often neglected in ecological restoration programmes. National implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization should foster broader benefit-sharing streams for IPLCs, based on their customary relationships with and management of their lands, territories and resources, including from seeds, genetic and biological resources, and bio-trade.

Recommendations:

- Governments should fulfil their obligations to: respect and protect the rights of IPLCs to their lands, waters and resources; respect and prioritise their cultural values, including in relation to sacred sites and culturally important species; and promote health, livelihoods and wellbeing, especially for women, the poor and the vulnerable.
 - Governments should upscale recognition and accessible, equitable funding for IPLC actions towards ecosystem protection, carbon sequestration, restoration and resilience-building, with full recognition of the role of indigenous and local knowledge.
 - Equitable benefit-sharing frameworks should be developed to reward IPLCs for their conservation and their customary management and sustainable use of biodiversity through partnerships and collaborations.
-

Strategic Goal E

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

Key message

IPLCs make substantial contributions towards all three objectives of the Convention, through their traditional knowledge, customary sustainable use and collective actions. While their role has started to be recognised in global processes, it is still poorly recognised in National Biodiversity Strategies and Actions Plans (NBSAPs) and in most countries mechanisms for IPLCs' full and effective participation at the national and local levels are yet to be developed. Community-based monitoring and information systems (CBMIS) are effective tools for highlighting local needs and priorities, making IPLCs' contributions visible, and providing concrete data and information about the implementation of global and national policy commitments on the ground.

Recommendations:

- Governments should establish national and sub-national mechanisms to enable full and effective participation of IPLCs in national strategies and action plans, and to mainstream traditional knowledge, customary sustainable use and equitable benefit-sharing.
 - Institutional support and direct, long-term funding should be increased, in line with needs identified by IPLCs.
 - Links between diverse knowledge systems should be strengthened throughout global, national and local monitoring and reporting platforms, incorporating relevant indicators on trends in traditional knowledge and the wellbeing of IPLCs.
 - National and global data and reporting systems should generate disaggregated data on the status of indigenous peoples, local communities, women, youth and marginalised groups, including through support and funding for complementary CBMIS by IPLCs.
 - Robust environmental, social and cultural safeguards and measures should be integrated into all resource mobilisation processes.
-

Part III: Biodiversity, climate and sustainable development

Transforming our World: The 2030 Agenda for Sustainable Development brings together biodiversity conservation, climate change and sustainable development under a common universal agenda, but in many countries they are still implemented and considered in silos. IPLCs will continue to be disproportionately impacted if the Aichi Biodiversity Targets and the Sustainable Development Goals (SDGs) are not met. Nonetheless, these goals can empower IPLCs to overcome vulnerability and exclusion through the power of their collective actions and self-determined development, and government support. IPLCs make distinctive contributions to meeting global goals in an integrated and holistic way. Placing them at the centre of implementation delivers a triple win, bringing together the fulfilment of human rights and wellbeing, the conservation and sustainable use of biodiversity, and the maintenance of natural ecosystems to manage climate change. Indicators on the rights and wellbeing of IPLCs constitute important measures of progress in the implementation of the global agenda for change.

Cultural diversity is a creative source and enabler for sustainable development. Culture provides peoples and communities with a strong sense of identity and social cohesion. Policies responsive to cultural contexts can yield better, sustainable, inclusive and equitable development outcomes. Progress in meeting the pledge to *leave no one behind* requires robust monitoring frameworks engaging those most directly experiencing social exclusion and structural discrimination.

The Indigenous Navigator is a participatory monitoring tool which enables indigenous peoples to generate data on trends in recognition of indigenous peoples' rights in development, to analyse their situation, and to develop strategies to address their concerns. It also allows them to track the implementation of international policy instruments, including the SDGs, and equips them to hold states to account and to engage confidently with key stakeholders and demand policy change. To date, the experiences of indigenous communities from 11 countries have been collated through the Indigenous Navigator. Life on Land (SDG15) stands out as the priority for IPLCs, alongside addressing poverty (SDG1), reducing inequality, including in relation to gender (SDGs 10 and 5), quality education (SDG4), and good health and wellbeing (SDG3). Absence of citizenship, legal recognition and social protection measures for indigenous peoples were highlighted as barriers limiting meaningful participation of indigenous peoples in the SDGs.

Recommendations

- Governments and relevant actors should collaborate to jointly develop NBSAPs and climate-related nationally determined contributions and integrate them into national development plans to secure synergies across biodiversity, climate and sustainable development.
- Governments and other actors should recognise rights and apply democratic principles at all levels to secure benefits across the whole of society as they work to address challenges related to development, biodiversity and climate change.
- IPLCs should continue to upscale community-based monitoring and information systems, building an evidence base and striving for increased transparency and accountability at all levels.
- IPLCs should also scale up individual and collective actions, building on intergenerational knowledge in creative, innovative problem-solving. They should also promote understanding of the linkages between nature and culture and between the local and the global.
- All actors should develop partnerships for generating knowledge and for sustainable and equitable outcomes, including through:
 - greater recognition of the value of indigenous and local knowledge alongside scientific knowledge;
 - participatory research;
 - education for sustainable development;
 - the use of appropriate and innovative technologies;
 - the creation of multi-actor knowledge platforms.

Part IV: Transitions towards living in harmony with nature

Nature needs urgent measures. We need to act now to protect our biodiversity. There is no more time to waste. The recognition of our rights to govern our own territories and practice our knowledge contributes to community and ecosystem resilience. As the guardians and defenders of Mother Earth, we urge all governments to act on behalf of biodiversity. See us as the most valuable part of the solution and work together with us towards a new relationship with nature—one that heals and sustains for all of our future generations.

— International Indigenous Forum on Biodiversity statement, February 2020, Rome

IPLCs and biodiversity under threat

IPLCs are acutely experiencing the loss of biological and cultural diversity. These losses stem from unsustainable global systems of values, knowledge, governance, production, consumption, technology, economics, incentives and trade, all underlain by unequal decision-making power regarding the future of nature and peoples. The roots of these problems lie in the prevailing view of humans as separate from nature and in value systems that favour individual interests and profit-making. Nature is seen as an economic resource to be exploited and its degradation is treated as an externality of mainstream economics.

Reforms in governance are a critical part of the solution. Decision-making dominated by elites and powerful vested interests is often linked to systemic corruption and distortions of democratic rule, with large parts of society left behind. Incentives and subsidies are primarily directed towards the growth of unsustainable production and consumption patterns, including through agro-industrial food systems which too often result in unhealthy foods and diets. The crisis in biodiversity, climate change and development are in part a direct consequence of these factors.

Encroachment into and disruption of natural ecosystems and current industrial agricultural practices have also given rise to unprecedented opportunities for increased prevalence of multiple zoonotic diseases, including coronaviruses, the latest causing COVID-19. The worldwide COVID-19 pandemic has exposed the vulnerabilities and lack of resilience of human health systems, simultaneously impacting economic and trade systems, financial systems, food systems, and social and political systems. These systemic and interrelated problems call for joined-up solutions that will not lock in 'business as usual' approaches,

challenging humanity to urgently re-envision and renew our social and cultural relationships with each other and with nature.

Nature and culture transitions towards the 2050 vision

The values, ways of life, knowledge, resource governance and management systems, economies and technologies of IPLCs have much to offer towards addressing these crises and towards reimagining the diverse global systems that can deliver shared visions of solidarity and of *no one left behind*. IPLCs propose changes towards more balanced relationships within societies and with nature through six key transitions:

- Cultural transitions towards diverse ways of knowing and doing
- Land transitions towards securing customary land tenure of IPLCs
- Governance transitions towards inclusive decision-making and self-determined development
- Incentives and financial transitions towards rewarding effective culture-based solutions
- Economic transitions towards sustainable use and diverse local economies
- Food transitions towards revitalising indigenous and local food systems.

Each of these transitions addresses specific urgent issues and contains their own dynamics but are systemically linked to each other; indeed, no single transition can succeed alone, and they need to take place simultaneously, and be deployed in mutually reinforcing ways to maximise the potential for transformation. These transitions have now become imperatives for IPLCs' survival and the continued health of the biosphere, the limits of which have been breached.

Cultural transitions towards diverse ways of knowing and being

Humanity's diverse ways of living, knowing and being in nature are celebrated, promoting plural values and worldviews across our economic, political and social systems, thereby securing the mutual resilience of nature and society. The diverse cultures of IPLCs inform and inspire the blossoming of new cultural narratives that locate humanity within a living, intelligent and sacred world.

Education for sustainable development is universal and the importance of biodiversity and cultural values are widely understood. People everywhere have relevant information, awareness and the capacity for sustainable development and lifestyles that are in harmony with nature.

Life on Earth has been a process of co-evolution—biological diversity alongside human diversity, creating genetic, species and ecosystem diversity. Today, Earth's life-support systems are in rapid decline and all of humanity's creative intelligences are needed to address the planetary crisis. Contemporary IPLCs, whose cultures and values embody historical knowledge and relationships with ancestral lands and waters, have special importance in conserving and restoring vital ecosystems under threat. Modern societies can learn from IPLCs about being a part of living ecosystems and about humans participating in an intelligent and sacred world. New narratives and visions of culture and nature working

together can transform the current imbalance in relationships between humans and nature.

Among the ground-breaking advances in recent years has been the inclusion of indigenous and local knowledges alongside the sciences, as complementary systems of knowledge for achieving fuller and richer understandings of biodiversity—its values, functioning, status and trends, and the consequences of its loss at different scales.

Key components of the transition:

- Promoting biological and cultural diversity, sustainability, languages, human rights and heritage in school curricula and informal education.
- Transmitting indigenous and local knowledge in schools, youth programmes, information and education campaigns, cultural festivals and celebrations, social media and public communication.
- Having sustained interactions between scientific knowledge systems and indigenous and local knowledge systems.
- Renewing and exchanging cultures through the arts and the media.

Land transitions towards securing customary land tenure of IPLCs

The territories of life of IPLCs, including their distinct cultural, spiritual and customary relationships with their lands and waters and their intrinsic and vital contributions to human wellbeing, biodiversity conservation and climate change mitigation and adaptation, are secured. The collective lands, territories and resources of IPLCs are legally recognised and protected in keeping with international law; land-use classifications and land registration to uphold customary tenure are reformed; and the global coverage of areas conserved, sustainably used and restored are progressively and significantly increased.

Collective land and territories are of existential importance for the continued survival of IPLCs and biodiversity, and for securing wider global benefits. In many parts of the world, the lands of indigenous peoples are becoming islands of biological and cultural diversity surrounded by areas in which nature has further deteriorated; in many instances, biodiversity is increased and enhanced through indigenous values and practices. Failing to recognise this and to secure IPLC lands, territories, waters and resources, together with the high conservation values they contain, is one of the biggest missed opportunities for biodiversity conservation and sustainable use of the past decade. A transition towards securing customary land tenure systems could have huge benefits for biodiversity.

Key components of the transition:

- Upholding the human rights of IPLCs, women and youth, consistent with the UN Declaration on the Rights of Indigenous Peoples and the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas.
- Adopting and scaling up effective constitutional, legal, policy and institutional frameworks, mechanisms and concrete measures to appropriately and legally recognise and adjudicate IPLCs' rights to territories, lands and resources and to respect their customary tenure systems.

- Reforming land governance and strengthening measures to ensure businesses comply with human rights and environmental standards.
- Strengthening IPLC governance institutions over lands, territories and resources, including community participatory mapping, demarcation and monitoring.
- Transforming conservation policy and practice towards rights-based and collaborative approaches that support and promote community-led conservation and customary sustainable use, and that celebrate the mutual relations between nature and culture.
- Investing in and supporting partnerships to secure collective land rights, including access to justice and improved accountability, remediation and restitution measures to address violations of IPLCs' land rights and the protection of environmental human rights defenders.

Governance transitions towards inclusive decision-making and self-determined development

Nested governance institutions, including IPLC authorities, are exercising decision-making at appropriate scales, ensuring whole-of-government and whole-of-society approaches that guarantee respect for human rights and diverse biodiversity and cultural values. These governance institutions are upgrading policy, legal and institutional transparency and accountability towards greater equity, wellbeing, sustainability and resilience for all.

Power inequalities in governance systems go hand in hand with imbalances in economic, social and ecological outcomes, and the fragmentation of governmental decision-making into specialised sectors has privileged economic growth over environmental health and social wellbeing. Integrative, holistic, transparent and accountable governance institutions, upholding respect for human rights, and equitable sharing of benefits from nature, will be critical elements in a transition towards just and sustainable outcomes for people and planet. The 2030 Agenda for Sustainable Development has set out a universal agenda for governments, businesses, all peoples, civil society and all citizens which embeds the universal values of human rights and a pledge to leave no one behind. This principled foundation permeates the whole transformative agenda, encompassing global inequalities, biodiversity, climate change and associated challenges.

Key components of the transition:

- Integrating national implementation strategies and action plans on sustainable development, biodiversity and climate change, based on inclusive participatory approaches and devolved decision-making.
- Reforming laws and policies to encompass plural approaches and increase equity, diversity and resilience.
- Enhancing reporting and accountability mechanisms for periodically assessing country contributions and overall progress.
- Empowering IPLCs and other marginalised groups, including with respect to gender equality and intergenerational equity.

- Consolidating stringent safeguards guaranteeing non-violation of human rights in the implementation of sustainable development, and biodiversity and climate change actions.

Incentives and financial transitions towards rewarding effective culture-based solutions

Incentives, including financial support for IPLCs' collective actions and innovative culture-based solutions, are prioritised; environmental, social and human rights safeguards on biodiversity financing are applied; and perverse incentives and harmful investments are ended or redirected.

Mobilisation and allocation of resources, both monetary and non-monetary, are key elements in effective implementation of the post-2020 Global Biodiversity Framework. Currently, far more resources are available for activities that drive biological and cultural diversity loss than for activities that maintain, strengthen and revitalise them. These activities include focusing on market-based solutions and technological fixes that have a strong likelihood of generating further damage rather than addressing underlying causes and systemic change. Examples of such controversial 'solutions' include carbon trading, geo-engineering, synthetic biology and gene drives. A major shift in investments, incentives and funding, including on technology assessments, is needed to support activities, especially through the collective actions of IPLCs, and appropriate technologies that benefit both nature and people.

Key components of the transition:

- Fully recognising and reflecting IPLC contributions as monetary and non-monetary forms of resource mobilisation, through appropriate monitoring, accounting and reporting tools.
- Increasing direct funding for IPLCs and for their culture-based solutions and activities towards conservation and sustainable use, and including IPLCs on national committees related to domestic biodiversity financing.
- Monitoring and reporting on resource mobilisation to include disaggregated data on global, regional and domestic support for IPLC collective actions.
- Applying biodiversity financing safeguards in practical and concrete ways, ensuring social inclusion and adherence to human rights standards in all resource mobilisation processes.
- Making REDD+ more effective through early planning, up-front investment, collection of baseline data, and rigorous and widespread monitoring of impacts.
- Embedding technology assessments at all levels of biodiversity policy, planning and implementation.
- Eliminating perverse incentives and applying positive incentives, including directing COVID-19 responses into opportunities to reshape the economy towards sustainability for people and planet.
- Reforming the financial sector to align financial flows with sustainable practices.

Economic transitions towards sustainable use and diverse local economies

Diverse and human-scale economic systems are thriving, within which IPLCs' customary sustainable use and other small-scale producers are contributing to sustainable and resilient economies, and scaled-down consumption patterns are guaranteeing a sustainable and just society.

Biodiversity loss, climate breakdown and intensifying social inequalities are the consequences of an economic system that seeks infinite growth, yet depends on finite resources. Also, recent research highlights that current large-scale agricultural and food production systems and the continued loss of habitats increase the risk of virus pandemics such as COVID-19. A radical transformation is needed in the current carbon-intensive economic systems and in global systems of production and consumption, a transformation towards a plurality of systems embodying local sustainable use, practices and technologies.

There is no single blueprint for transforming current unsustainable practices, but many diverse solutions, innovations, technologies and alternatives are emerging. Among these, with appropriate recognition and support, IPLCs' systems of customary sustainable use and small-scale production offer multiple benefits at all levels for biodiversity, climate change mitigation and adaptation, and sustainable development.

Key components of the transition:

- Decentralising, diversifying and innovating economies.
- Shifting from fossil-fuel-based economies to clean energy.
- Recognising and supporting, nationally and sub-nationally, the roles, practices and technologies of IPLCs.
- Partnering to implement the CBD Plan of Action on Customary Sustainable Use of Biological Diversity.
- Increasing accountability of businesses and their transformation towards sustainable practices, including in supply chains.
- Recognising and supporting women and youth, who are key actors in revitalising and innovating rural and local sustainable economies.
- Reducing over-consumption and waste, and promoting and implementing the principles of circular economies, which decouple economic activity from the use of finite resources and promote recycling and environmental regeneration.

Food transitions towards revitalising indigenous and local food systems

Vibrant ecosystems and cultures ensure genetic diversity and diverse diets, improving health, resilience and livelihoods. Revitalised indigenous and local food systems contribute to local food security, food sovereignty and agroecology, and underpin a just agricultural transition.

IPLCs have nurtured agricultural biodiversity for millennia, both for food and medicines and for deeper spiritual, cultural and community values, with women paying vital roles. Small-scale producers and family farmers still feed the majority of the world's people, while using less than 25 per cent of the

world's land, water and fossil fuel energy. Maintaining and expanding diversity in agriculture, landscapes and food systems will be critical in a transformation towards just, healthy and resilient food systems. Transforming unsustainable agro-industrial developments and stopping land-use conversions on IPLCs' customary lands and waters requires systemic changes across entire food systems, including through strategic land-use planning; enhancing biodiversity and ecosystem values across landscapes; recovering food traditions and cultural heritage values; and taking measures to reduce the consumption of highly processed foods among indigenous peoples and other rural and urban consumers. With food systems across the globe stretched to breaking point, and threats of impending famines linked to the current and future pandemics, food systems will be a frontier of change towards diverse and resilient food systems and local economies.

Key components of the transition:

- Integrating food policies that holistically address all aspects of food systems
- Securing food sovereignty, local food security and reforming governance.
- Embracing agro-ecology.
- Taking systemic approaches, rather than applying narrow technical fixes.
- Securing access to land and securing land tenure.
- Policy support and funding for grassroots food initiatives such as community seed banks, cooperatives, technological innovations and indigenous management practices.

Part V: IPLCs' contributions to the 2050 vision

Walking to the future in the footsteps of our ancestors

IPLCs uphold life-affirming cultural relationships with nature as central to nature's future. Cultural diversity goes hand in hand with biological diversity as humans live our everyday lives in diverse ecosystems. Much of the world's remaining biodiversity on IPLCs' lands and waters has been nurtured through IPLCs' distinct relationships with nature. Securing IPLCs' continued guardianship of their territories and resources requires states to legally recognise and guarantee the security of collective land tenure of IPLCs and to respect their continued governance institutions and practices.

2020 was planned as a 'super-year' for nature and biodiversity, including the adoption of a new, forward-looking global biodiversity strategy to 2050 at the fifteenth meeting of the Conference of the Parties (COP-15) to the CBD in China. A packed schedule of biodiversity processes and events has been overtaken by the COVID-19 pandemic, an event revealing multiple interactions and profound systemic fragility in both human and natural systems. The increasing frequency of pandemics and new forms of zoonotic diseases (those that can be passed from animals to humans) caused by coronaviruses and other vectors highlights imbalances in our relationships with nature, which need addressing beyond the immediate time frame of the current health emergency. A quick 'return to normal', with its multiple imbalances and vulnerabilities in human health systems, food systems, economic and trade systems, financial systems and social and political systems, could deepen our human health and planetary crisis.

The systemic and inter-related problems challenge humanity to explore new pathways towards the vision of living in harmony with nature, by 2050 and beyond. The 2050 biodiversity strategy must envisage a future that is a radical departure from the 'short-termism' of quick returns towards long-term holistic solutions.

The six transitions identified by IPLCs as critical pathways to transformation—in diverse ways of knowing and being, in secure land tenure, in inclusive governance, in responsible finance and incentives, in sustainable economies and in local food systems—have now become imperatives for the transformation of failing social, cultural, economic, political and technological systems.

These transitions are intergenerational visions honouring the historical struggles and wisdom of past generations, drawing from the experience and innovations of today's living generations, and embodying the legacy and hopes for future generations.

The stories and experiences shared in this publication are only a sampling of the myriad actions being taken by IPLCs across the planet. Support by governments and other actors for collective actions by IPLCs could stimulate strategic partnerships for change and enable IPLCs to multiply their contributions to biodiversity conservation and sustainable use, climate change mitigation and adaptation and to sustainable development.

We are all future ancestors, challenged to renew the Earth for coming generations. This is humanity's joint endeavour to save our common home.



Part I

← ●
A woman carrying out the heavy work of harvesting black cardamom (Thao Qua). Once cut, the fruits are collected in wicker baskets carried on the worker's backs and later transported to a campsite for drying. Credit: Ian Teh.

Introduction

In 2016, at the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 13), Parties welcomed the first edition and requested a second edition to be launched in conjunction with the fifth edition of the *Global Biodiversity Outlook (GBO-5)* in 2020. *Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020* and to renewing nature and cultures (*LBO-2*), a complement to *GBO-5*, has been prepared in response to that request through a collaboration of the International Indigenous Forum on Biodiversity, the Indigenous Women’s Biodiversity Network, the Centres of Distinction on Indigenous and Local Knowledge, Forest Peoples Programme and the Secretariat of the Convention on Biological Diversity. It brings together information and case studies from indigenous peoples, local communities and community-based organisations around the world, with information from published academic and non-academic sources.

The structure of *LBO-2* is set out below.

Report structure

This report is structured as follows:

- Key messages
- Part 1: Introduction
- Part 2: Progress during the UN Decade for Biodiversity 2011–2020
- Part 3: Biodiversity, climate change and sustainable development
- Part 4: Transitions towards living in harmony with nature
- Part 5: IPLC contributions to the 2050 vision.

Part 1 provides an introduction and overview of the report’s contents, background and structure.

Part 2 follows a similar format to *LBO-1*: it consists of 20 chapters, each of which presents the perspectives and experiences of IPLCs in relation to one of the 20 Aichi Biodiversity Targets. It comprises the collective input, research and wisdom of a diverse group of indigenous and non-indigenous authors. From their contexts and experiences across all regions of the world, they have brought together assessments of progress towards the Aichi Biodiversity Targets which incorporate and reflect the knowledge and perspectives of indigenous peoples and local communities, both in the narrative text and in an extensive range of case studies. What they have found, and demonstrate here, is that progress towards the targets is patchy, inconsistent and hampered by political and economic factors built in to dominant economic, cultural and production models. With the ongoing negotiations towards a post-2020 global biodiversity framework, it is crucial that the lessons learnt in implementing the Aichi Biodiversity Targets are carefully studied; consequently, for each target, recommendations and opportunities to do just that are presented. Each chapter includes a brief outline of what the target means for IPLCs, their contributions and experiences in relation to the target, key messages, and an outline of opportunities and recommended actions.

Part 3 illustrates the holistic views and approaches of IPLCs in addressing the interrelated crises in biodiversity, climate change and the UN Sustainable Development Goals (SDGs). It elaborates on how a human-rights-based approach and an ecosystem-based approach can converge to provide solutions. It describes some IPLC contributions and concerns that relate to the SDGs.

Part 4 builds on Parts 2 and 3, and sets out a series of six interconnected transitions that emerge from the recommendations and needs of IPLCs, and that are essential to progress towards the 2050 vision of ‘living in harmony with nature’.

Part 5 closes with statements about IPLC contributions to the 2050 vision.

A cautionary note

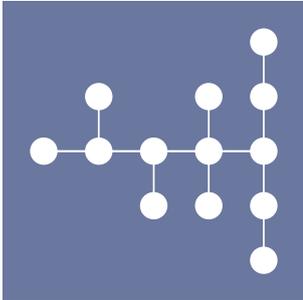
Among indigenous peoples, it is a common protocol of respect that people be allowed to tell their own stories in their own ways. In a global assessment, this is not possible. Within the seven indigenous socio-cultural regions recognised by the United Nations Permanent Forum on Indigenous Issues, there is considerable diversity. It is precisely this diversity that we wish to protect and nurture, but it is difficult to reflect it fairly in a brief review. Therefore, while this report reflects the experiences of its authors and collators, and the views and policy recommendations received from IPLCs across the world, readers should consult directly with the people whose stories are included here to understand their concepts, interpretations and needs, and to ensure that these people directly participate in the design and implementation of policies.



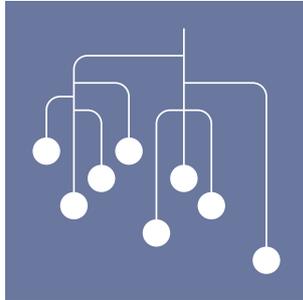
Part II

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A woman herds sheep on a hillside pasture in Peru. Credit: Tim Dirven.

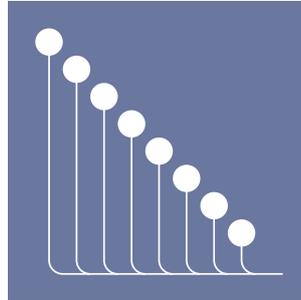
Progress during the decade for Biodiversity 2011–2020



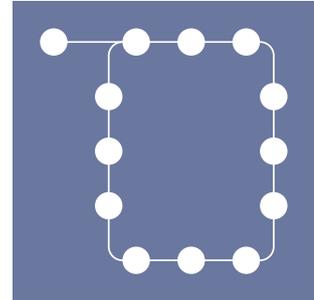
1: Awareness of biodiversity increased



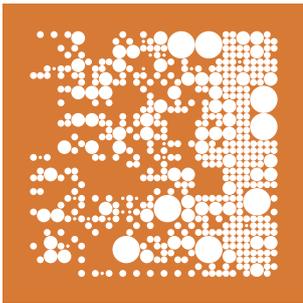
2: Biodiversity values integrated



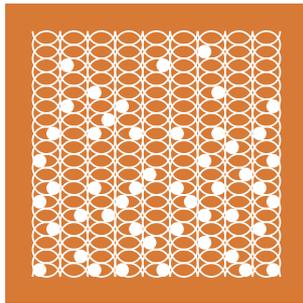
3: Incentives reformed



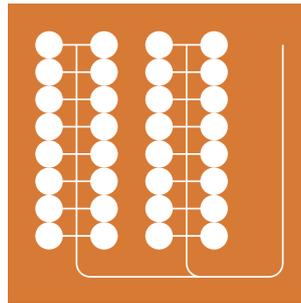
4: Sustainable production and consumption



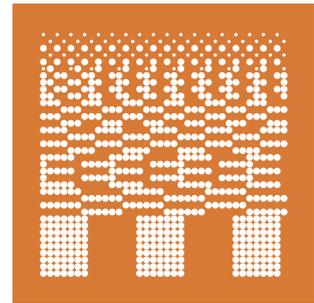
5: Habitat loss halved or reduced



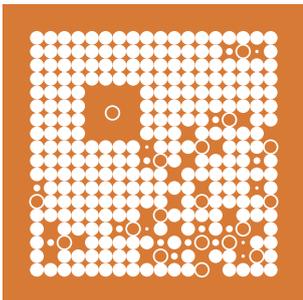
6: Sustainable management of aquatic living resources



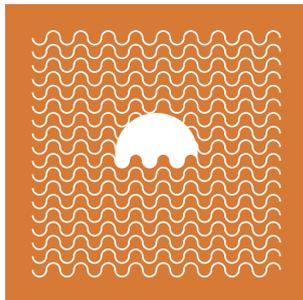
7: Sustainable agriculture, aquaculture and forestry



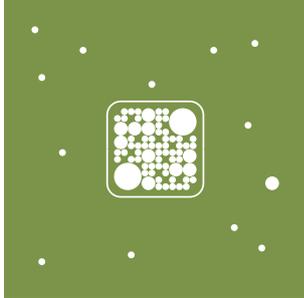
8: Pollution reduced



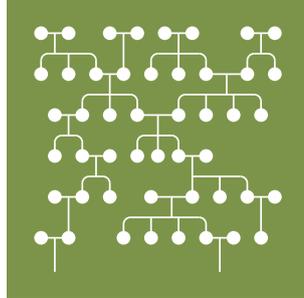
9: Invasive alien species prevented and controlled



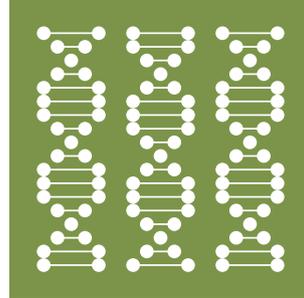
10: Ecosystems vulnerable to climate change



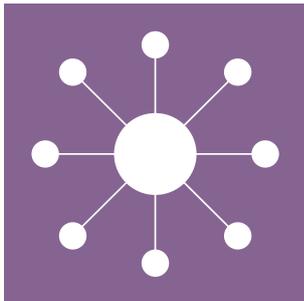
11: Protected and conserved areas



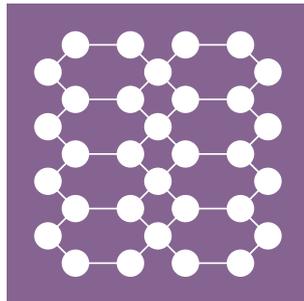
12: Reducing the risk of extinction



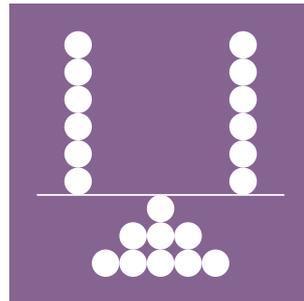
13: Safeguarding genetic diversity



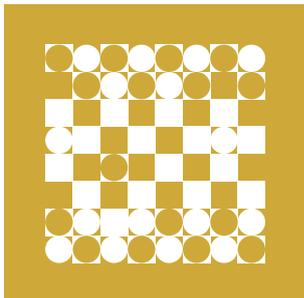
14: Ecosystem services



15: Ecosystem restoration and resilience



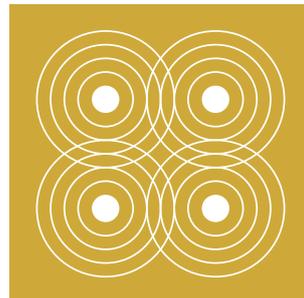
16: Nagoya Protocol in force and operational



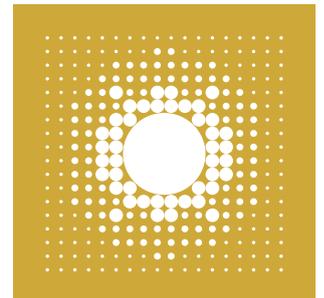
17: Biodiversity strategies and action plans



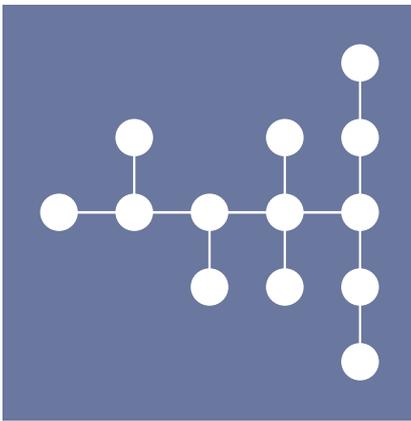
18: Traditional knowledge and customary sustainable use



19: Sharing information and knowledge



20: Resource mobilization



Target 1: 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 messages

- The 2050 vision of a world ‘living in harmony with nature’⁽¹⁾ requires a radical paradigm shift in value systems away from economic values alone towards value systems that emphasise connections between people, nature and *living well*.
- Many indigenous peoples and local communities (IPLCs) have value systems embodying principles of respect, reciprocity and ethical living, which need to be supported and strengthened against cultural erosion.
- Sharing these value systems more widely within educational systems and with the general public contributes significantly towards shifting understanding of intercultural perspectives and diverse biodiversity values.

Significance of Target 1 for IPLCs

“The value that is placed on natural resources by state and companies is a dollar value. For us, that’s not the same. Mother Nature is more than a dollar value. She’s a part of who we are.”

— J Cristina Coc, indigenous Q’eqchi, Maya Leaders Alliance⁽²⁾

Relational values with nature; the Jalai Daya in Kalimantan, Indonesia

Box 1: John Bamba⁽³⁾

Among the Jalai Daya in Kalimantan, Indonesia, an ideal life can be achieved through living in accordance with the following cultural values:

- Sustainability (biodiversity) versus productivity (monoculture)
- Collectivity (co-operation) versus individuality (competition)
- Naturality (organic) versus engineered (inorganic)
- Spirituality (rituality) versus rationality (scientific)
- Process (effectiveness) versus result (efficiency)
- Subsistence (domesticity) versus commerciality (market)
- Customary law (locality) versus state law (global)

Failure to achieve these ideals is believed to result in *barau* (a situation when nature fails to function normally, resulting in chaos). *Barau* comes about as a result of transgression of *adat* (customary practice), when there is a broken relationship with nature.

Many IPLCs live by principles and values related to the concept of living well (for example, in Ecuador *sumak kawsay*⁽⁴⁾, or *buen vivir*, refers to living well in harmony with nature). Typically, such holistic approaches emphasise local sources of food and livelihoods; community solidarity; intergenerational governance; resilient ecosystems; spiritual, economic and social connection to lands and territories; the protection of systems of knowledge transfer; customary sustainable use of resources; and collective benefit-sharing. Nature is more likely to be protected and maintained on IPLC lands and territories where these principles are enabled and upheld.

IPLCs, in not seeing nature (or biodiversity) as a separate external entity, provide an important counterpoint to the dominant *western* paradigm. It will be critical for peoples and societies to embrace more holistic, relational value frameworks that emphasise living in harmony with nature if we are to address the current environmental crisis.⁽⁵⁾

Contributions and experiences of IPLCs towards Target 1

IPLCs have been active in revitalising, restoring and protecting their knowledge and values through creating spaces for intergenerational learning and knowledge-sharing, mostly within communities and conducted in local languages. Specific activities include creating intergenerational learning programmes; creating culturally sensitive learning spaces; organising community-based nature and cultural events; running community-based training, and information and legal centres; and co-producing educational resources with the government. Initiatives may be enhanced through the use of modern technologies to, for example, record elders and store knowledge in secure databases.

Creating culturally sensitive learning spaces and cultural events

Culturally sensitive learning spaces and activities provide opportunities to share culture and identity, including values and knowledge. They are chances to renew pride and are also occasions for others to increase their awareness and understanding.

- In Malaysia, PACOS Trust (Partners of Community Organizations in Sabah (PACOS) Trust) worked with 22 village partners to set up community learning centres and community kindergartens where the teachers and students are themselves villagers. Today, many of the centres also serve as libraries and spaces for community engagement and activities such as talks, village meetings, workshops, and relief centres.
- International Day of the World's Indigenous Peoples is celebrated annually on 9 August. Cultural and food festivals have been organised in Suriname, Cambodia and northeast India, while Vietnam and Timor-Leste have held workshops on mother-tongue and intergenerational learning. In Bangladesh and Nepal, roundtable discussions and meetings with government officials were organised. In the US, there is a rise in the appreciation of the significance of celebrating Indigenous Peoples' Day in place of Columbus Day. Eleven states (Alaska, Louisiana, Maine, Michigan, Minnesota, Nevada, New Mexico, Oregon, South Dakota, Vermont and Wisconsin) observe some version of Indigenous Peoples' Day, along with more than 100 cities, including Washington DC.⁽⁶⁾
- In Russia, the first nomadic kindergarten was established by reindeer herders and their communities in Yakutia in 1992. It was designed so that the teachers moved with the herders as they travelled across the tundra. At that time, Yakutia was autonomous from the federal government and the communities did what they considered necessary for their children (Yakutia is now an autonomous district, or *okrug*, of Russia). Local authorities supported the initiative and allocated money for teachers' salaries but all other expenses (e.g. transportation, gas, accommodation, winterised yurts, special books, training consumables) were covered by the communities. By the end of the 1990s, there were seven nomadic schools in Yakutia. At the beginning of the 21st century, the initiative was gradually replicated in other Arctic regions of Russia i.e. the Yamal-Nenets and Khanty-Mansi autonomous districts; the Komi and Sakha republics; and the Arkhangelsk region. Since 2003, these schools have been receiving a small amount of support from UNESCO and foreign foundations, thus popularising and raising the status of these schools, resulting in increased funding from within the regions and official authorities. The schools have shown excellent results and raised awareness of the significance of reindeer herders leading a nomadic lifestyle.^(7,8)

IPLCs have undertaken wide-ranging activities to share their values and world-views, both within their own communities and through engagement with the wider public, including through policy advocacy; public communication and information campaigns; and educational programmes, including in mainstream school curricula. They are also working to ensure that their diverse values are passed down to future generations, and that young people develop the skills needed to continue to raise awareness on these issues.



Box 2: Josefa Cariño Tauli, Ibaloi-Kankanaey, Philippines

High school students share ideas for environmental projects that could be run locally.
Credit: Paulo Kim.

Case study: Environmental leadership workshops for indigenous youth in Mountain Province, Philippines

Many initiatives led by indigenous youth are contributing to achievement of the Aichi Biodiversity Targets, and when they are supported, they have the potential to effect and innovate positive change in their communities. This was made clear to us through a series of youth-led seminar-workshops on the role of indigenous youth in environmental leadership which we had organised for senior high-school students in the municipalities of Besao and Sagada in the Cordillera Region, Philippines. The project was supported by Conservation International's Indigenous Leaders' Conservation Fellowship.

The workshops included sessions on the rich biodiversity of the Philippines, case study presentations on youth-led environmental projects in the country, and guidance on planning and managing environmental advocacy projects. Students were then grouped and tasked to come up with their own initiatives and to pitch these to the group.

Everyone came up with commendable plans providing solutions to environmental issues, from songs written in the indigenous language on the effects of climate change, to gardens and greenhouses for indigenous medicinal plants, to guided nature walks around the municipality.

The workshops revealed that the indigenous youth participants had taken to heart their role as inheritors of the land, resources, knowledge and values passed on to them by their ancestors—knowledge and values which we rely on greatly for achieving our 2050 vision, and which has great potential in terms of innovative and culturally appropriate solutions to emerging environmental problems. The initiative is called Project Tawid—*tawid* being the Kankana-ey word for *heritage*—and many indigenous youths know and appreciate that our land, our resources, and our culture are our ancestral heritage, which we pass on to the next generations.

Case study: Salmon conservation, indigenous education, and knowledge co-production in Kamchatka

Kamchatka Peninsula on the North Pacific coast of Russia is home to 12 species of salmonid fish, including six species of Pacific wild salmon. It is the last remaining region that acts as a global reserve and gene pool for salmon. Salmon form the wealth of Kamchatka and its peoples, and its sustainability determines the economic, spiritual and cultural domains of local life.

From 2004 to 2016, indigenous communities in Kamchatka concerned with salmon and their ecology worked with the ethno-ecological information centre Lach (an indigenous NGO) on educational programmes that foster awareness and understanding about contemporary threats to salmon and its environment.

Creative ethno-ecological contests were organised to introduce children and their parents to the traditions of their ancestors related to respect for the environment. Several literary and art contests for Kamchatka children were organised. In their submissions, participants vividly highlighted the problem of poaching in various regions of the peninsula, and referred to traditional subsistence fishing and the rational use of natural resources in their home areas. The organisers sought to ensure that the children collaborated with the elders in writing down traditional stories and legends related to salmon.

Through ethno-ecological youth camps and festivals, we also worked to raise awareness about environmental issues on the peninsula. During the camps, indigenous youth studied the biology and habitat of the salmon, and monitored spawning rivers and the state of the environment while also sharing knowledge with elders. After the camps, salmon-keepers' festivals were organised in the villages so that camp participants had a chance to share what they had learned with their families and friends.

Several ethno-ecological publications for children and their parents were produced and distributed to schools and libraries in Kamchatka. These publications brought together indigenous and scientific knowledge about salmon in an entertaining, educational way. They included activity books that introduce young readers to the world of salmon, its lifecycle, and its place in indigenous cultures and cultural values.



● A girl wears an outfit made out of salmon skins. Credit: Itelmen crafts studio, Ujirit.



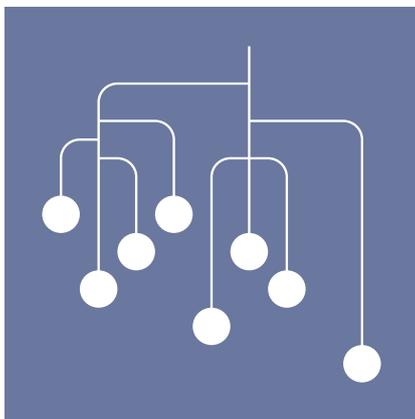
● Celebrating National Indigenous Peoples Day in British Columbia, Canada. Credit: Province of British Columbia.

Opportunities and recommended actions

- IPLCs should revitalise the intergenerational transmission of their values, cultures and languages, celebrating the distinctive contributions of elders, youth and children, men and women, and their spiritual relationships with nature.
- Governments, conservation organisations and educational agencies should promote intercultural learning and education, and the transmission of traditional knowledge, building on IPLC initiatives, including those led by women and youth.
- Governments and intergovernmental institutions should strengthen and upscale inclusion of IPLC values and knowledge in mainstream education systems, including the active promotion of indigenous languages, through meaningful participation and partnerships with IPLCs.

Key resources

- Convention on Biological Diversity (2018) *The Sharm El-Sheikh Declaration on Nature and Culture*. CBD/COP/14/INF/46. Montreal: Convention on Biological Diversity.
- Pope Francis (2015) *Encyclical Letter Laudato Si' of the Holy Father Francis on Care for our Common Home*. Vatican: The Holy See. Available at: http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html
- UNESCO Strategic Outcome Document of the 2019 International Year of Indigenous Languages. Available at: <http://en.iyil2019.org>



Target 2: 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 messages

- Cultural and biological diversity are interdependent, and improved integration of diverse cultures and viewpoints into national and local development strategies, and into planning, accounting and reporting processes, will significantly enhance biodiversity and cultural outcomes.
- Mainstreaming holistic values requires stronger action on inclusive empowerment of IPLCs, of men and women, and of elders and youths, both as knowledge-holders and as key agents of change, innovation and transformation.

Significance of Target 2 for IPLCs

Biological and cultural diversity are not only closely linked but also mutually reinforcing. As such, an effective mainstreaming of biodiversity into different sectors in society would also need mainstreaming culture - taking into consideration that there is diversity of culture, values and worldviews.

— International Indigenous Forum on Biodiversity (IIFB) Statement⁽⁹⁾

IPLCs have been clear that effective, sustainable implementation of development goals, and mainstreaming of biodiversity values, requires being mindful of diverse cultural value systems and going beyond monetary measures of wellbeing.⁽¹⁰⁾



Assessments of poverty reduction strategies highlight continuing marginalisation of the poor, including IPLCs in policy- and decision-making processes on sustainable development.⁽¹¹⁾ To mainstream biodiversity values and human wellbeing across government, economic sectors and society, at all stages of planning, implementation and reporting, the empowerment of IPLCs—men and women, elders and youth—as holders of knowledge and agents of change, innovation and transformation needs to be prioritised. Including IPLCs in planning and decision-making contributes to holistic and culturally appropriate sustainable development processes and policies.

A landscape in Alta, Norway. Gunn-Britt Retter, a member of the Saami Council, says “as Indigenous Peoples we see our history and eternity, while miners and developers see money or windmills.” Credit: Anne Henriette Nilut/Saami Council.

Such calls to mainstream biodiversity and cultural values in national and local planning, management and reporting processes have led to the development of various systems and frameworks aiming to facilitate this process; these, in turn, have helped to shape the regulatory policies that guide planning processes.⁽¹²⁾ At present, however, they do not adequately integrate the broader social and cultural values of biodiversity,⁽¹³⁾ and, more specifically, the value systems of IPLCs are still largely absent.⁽¹⁴⁾ For example, poverty reduction strategies continue to highlight the marginalisation of the *poor*, including IPLCs, but for many IPLCs⁽¹⁵⁾ the threshold poverty line of an income of US\$1.90 per day per person⁽¹⁶⁾ is far less salient to wellbeing than secure rights to lands, territories and resources.

Similarly, most planning processes focus on a narrow monetary approach to biodiversity values. This is often justified on the basis that monetary valuations have the most influence with decision-makers. However, this approach risks strengthening a worldview based overwhelmingly on commodity values and can deny or marginalise the importance of cultural values.⁽¹⁷⁾ Such a worldview is at odds with the much broader holistic values placed on nature by IPLCs and by the wider public.⁽¹⁸⁾

Including IPLCs, and particularly women, girls and marginalised actors, throughout the strategic planning cycle mitigates the risk of projects perpetuating inequalities and leading to unsustainable outcomes, and the risk of conflicts and harm to communities. Engaging them as partners also opens democratic space for building partnerships, ownership and legitimacy for sustainable development plans. Participatory economic, environmental, social and cultural assessments, rather than purely expert technical exercises, are able to take into account the diverse values, rights and perspectives of IPLCs, for whom material and spiritual worlds are often interwoven and imbued with use and meaning.

Contributions and experiences of IPLCs towards Target 2

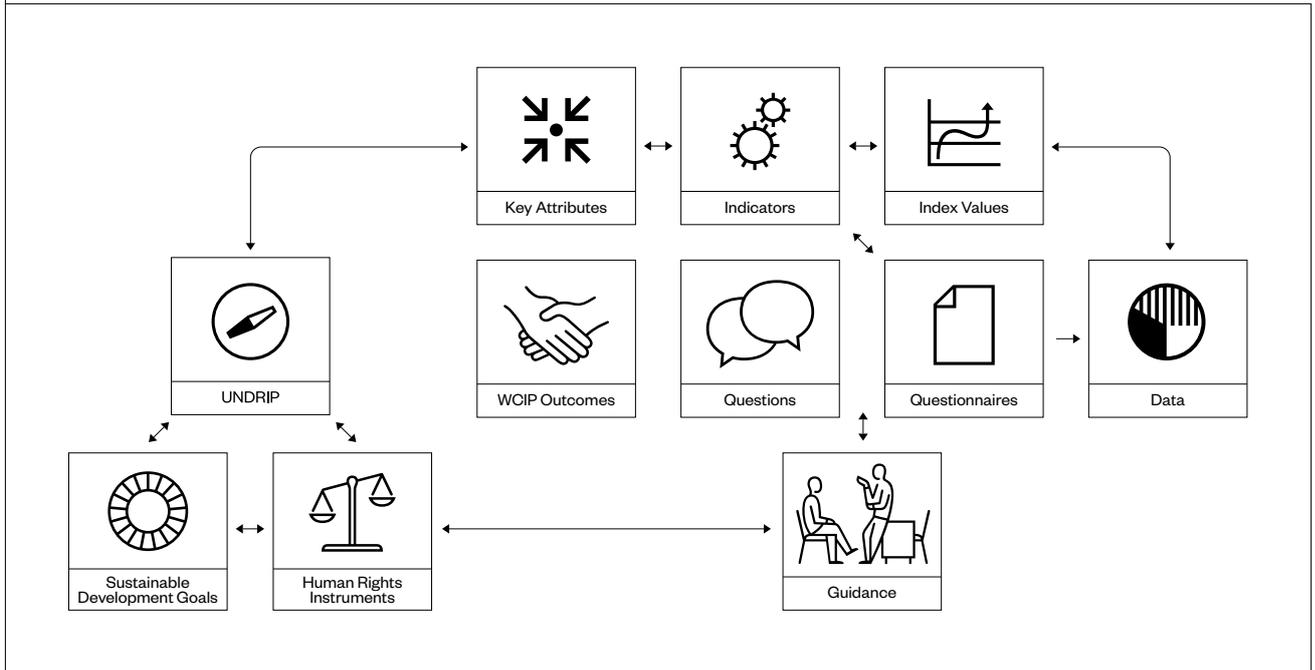
IPLCs have proactively engaged existing planning frameworks and approaches to monitoring to integrate their perspectives and values. For example, the Indigenous Navigator (see Box 2.1) has been developed to capture relevant, culturally-sensitive data in relation to both national policy commitments and local outcomes on the ground. These data can be used to highlight community needs and priorities and to ascertain that development initiatives and planning processes are inclusive, sensitive to context, and incorporate IPLCs diverse biodiversity values.

Box 4

The Indigenous Navigator; monitoring outcomes of international policy instruments

The Indigenous Navigator⁽¹⁹⁾ is a framework and set of tools enabling indigenous peoples to monitor trends in recognition of their rights and in development. The tools include questionnaires for gathering data at the community and national levels to measure both national commitments (including implementation of the UN Declaration on the Rights of Indigenous Peoples, the SDGs and World Conference on Indigenous Peoples outcomes) and the actual impacts on the ground. There is also a data portal for sharing data and tools across countries and communities. Launched in 2014, the Indigenous Navigator has contributed data to indicators on self-determination; education; health; access to justice; access to lands and territories; customary law; languages; consultation and consent; participation in public life; and fundamental rights and freedom. Further development and adoption of these indicators over time will enable collection of data reflecting progress in the realisation of indigenous peoples' rights and well-being.

Figure 1: The Indigenous Navigator monitoring framework and key tools



IPLCs have also been involved in incorporating broader values into existing and widely adopted assessment processes. For example, several Inuit communities have helped to reshape environmental impact assessments (EIAs) in the Arctic through their involvement in the Arctic Council (see Box 5 for a specific case developed in this way). Models that have been identified for meaningful engagement with indigenous peoples include indigenous-led impact assessments; impact assessments based on indigenous knowledge; and a range of thematically specific assessments, including in relation to impacts on health and ethnology, cumulative impacts, and collaborative risk mitigation. Box 5 outlines a successful example of this approach.

Box 5: Arctic Council, Sustainable Development Working Group⁽²⁰⁾

Salluit, one of the Inuit communities located near Raglan Nickel Mine. Credit: Catherine Boivin.



Case study: Good practice for collaborative environmental impact assessment; Raglan Nickel Mine, northern Quebec, Canada

The Raglan Nickel Mine has been in operation since 1997. In 2016 the company proposed to extend the life of the mine by over 20 years, to 2041. A committee was formed to review the environmental and social impacts of the extension, comprised of participants from the Inuit organisation Makivik Corporation, two Inuit communities located near the project (Salluit and Kangiqsujuaq), and the proponent. Its mandate was co-developed by their respective senior leaders.

The committee developed five recommendations for good practice:

- Seek true dialogue to meaningfully engage.
- Utilise indigenous knowledge and local knowledge.
- Build internal capacity and provide resources to meaningfully engage in the EIA.
- Allow the EIA to influence project design and decision-making process.
- Strengthen circumpolar co-operation on transboundary EIAs.

Several models for meaningfully engaging indigenous peoples were identified, including indigenous-led and indigenous-knowledge-based impact assessments; issue-specific impact assessments (health, ethnological and cumulative impact assessments); and collaborative risk mitigation.

The joint review allowed the Inuit and the company to integrate cultural information, revise the project, co-develop risk mitigation strategies and monitoring measures, and jointly define levels of significance for each impact after mitigation. Eventually the Inuit decided to support the mine extension.

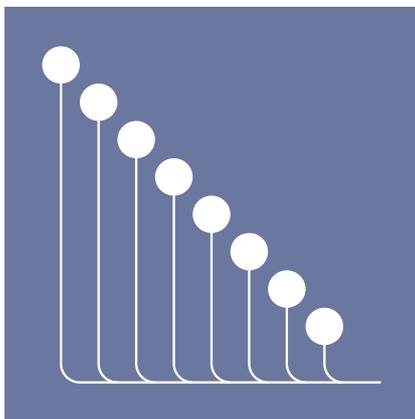
The project is also an example of a retrospective impact assessment, which looked at changes that had occurred during the existing project's lifetime and compared them to predictions made prior to the project's approval. It provides valuable insight into the ways that project management and monitoring should be changed.

Opportunities and recommended actions

- IPLCs should continue to create and restore mechanisms to widely transmit their value systems that are based on relational values and worldviews such as a quality life.
- Governments and multilateral organisations should institutionalise improved mechanisms for meaningfully engaging and including IPLCs in all phases of development interventions, with full respect for and protection of their individual and collective rights, including the right to free, prior and informed consent.
- Governments and other actors should recognise and build on local and indigenous knowledge in the design, development and implementation of programmes related to: poverty and wellbeing; environmental assessment and management; and environmental and social monitoring of outcomes.

Key resources

- Sangha, Kamaljit, K., Russell-Smith, J. and Costanza, R. (2019) 'Mainstreaming indigenous and local communities' connections with nature for policy decision-making', *Global Ecology Conservation* (19). Available at: <https://www.sciencedirect.com/science/article/pii/S235198941930229X>
- Arctic Council, Sustainable Development Working Group (2019) 'Good practices for environmental impact assessment and meaningful engagement in the Arctic: Including good practice recommendations', Arctic Environmental Impact Assessment project. Arctic Council.



Target 3: Incentives reformed

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimise 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 socioeconomic conditions.

Key messages

- Getting subsidies and incentives right has enormous potential to turn the tide of biodiversity loss and is particularly important for IPLCs, many of whom are confronted by destructive and irresponsible investments.
- Based on available evidence, Target 3 has not been achieved. IPLCs continue to be negatively impacted by perverse subsidies that are harmful to biodiversity. They also continue to suffer from the failure to implement and increase positive incentives.
- Radical action is required urgently to upscale and mainstream effective incentives and to phase out incentives that are harmful to nature and people.

Significance of Target 3 for IPLCs

IPLCs rely on nature for their daily needs⁽²¹⁾ and, therefore, perverse subsidies such as those related to large-scale agriculture, infrastructure, chemical pollutants and land clearance have direct harmful impacts on their livelihoods and wellbeing, and, most fundamentally, on their right to life. Reforming incentives, then, is of critical importance to IPLCs and is of the utmost urgency.



The geography of palm oil: landscape change in progress in Malaysia. Credit: Agnès Stienne, *Dépaysages de palmiers à huile*, Visionscarto.net.

-  Forest
-  Grassland
-  Crops
-  Buildings and roads
-  Cleared land
-  Plantations
-  Change of scene

The CBD defines harmful incentives as ‘measures, policies or practices that induce behaviour that is harmful to biodiversity’⁽²²⁾ and positive incentives as ‘economic, legal or institutional measures designed to encourage beneficial activities.’⁽²³⁾ Currently, harmful incentives continue to dwarf funding for biodiversity: in 2019, the Organisation for Economic Co-operation and Development (OECD) estimated subsidies harmful to biodiversity at US\$500 billion a year, which is about 10 times the estimated global funding for biodiversity conservation and sustainable use.⁽²⁴⁾ A further US\$1,753 billion is spent annually on military expenditure, which could be put to much better social and environmental use.

While more research is needed to understand the effects of harmful incentives, these figures highlight the scale of reform that is needed to achieve Target 3. However, to date few governments have even identified the relevant incentives, let alone worked to reform them.⁽²⁵⁾

Currently, far more resources are available for activities that drive biological and cultural diversity loss than for activities that maintain, strengthen and revitalise them. These activities include focusing on market-based solutions and technological fixes that have a strong likelihood of generating further damage rather than addressing underlying causes and systemic change. Examples of such controversial *solutions* include carbon trading, geo-engineering, synthetic

biology and gene drives. A major shift in investments, incentives and funding, including on technology assessments, is needed to support activities, especially through the collective actions of IPLCs, and appropriate technologies that benefit both nature and people.

Contributions and experiences of IPLCs towards Target 3

Harmful incentives

IPLCs around the world are working to raise awareness of, and to address, harmful incentives.

Examples of harmful incentives:

- New subsidies for burning wood pulp could increase deforestation of IPLC lands and territories.⁽²⁶⁾
- New subsidies for expanding damaging extractive industries for energy transition in the so-called *Green New Deals*, which are proposed transformational reforms to tackle climate change.⁽²⁷⁾
- Brazil subsidises deforestation-linked industries by an estimated US\$14 billion per year while also spending US\$158 million a year on preventing deforestation.⁽²⁸⁾
- The World Bank continues to prop up the continued use of fossil fuels and—through development policy loans—to fund infrastructure in primary forests while also working to reduce deforestation through other initiatives.⁽²⁹⁾

Examples of IPLC actions to address some of these harmful incentives:

- The European Union Renewable Energy Directive (2009/28/EC) has driven palm oil imports to the EU by encouraging greater use of biofuels.⁽³⁰⁾ IPLCs have raised awareness of the significant impacts that this directive has had on their ways of life, their lands and territories, and on biodiversity.⁽³¹⁾
- IPLCs are active in resisting fossil fuel expansion, both on the ground and at the global level.⁽³²⁾ In one of the most recent examples, in March 2020 a US federal court struck down permits for the controversial Dakota Access Pipeline and ordered a comprehensive environmental review, as a result of action by the Standing Rock Sioux to defend their ancestral homeland from risks of oil spills.⁽³³⁾
- IPLCs have been at the forefront of civil society efforts to mitigate the effects of new tax incentives in Colombia for biofuel production from oil palm and sugar cane, and policies in Peru that encourage biofuel plantations, industrial agriculture and mega-infrastructure projects in contradiction with Peru's zero-deforestation pledges.⁽³⁴⁾



Early morning at Oceti Sakowin Camp, one of the protest camps formed to block the development of the Dakota Access Pipeline in the USA. Credit: Photo Image.

Positive incentives

Positive incentives span a wide range of activities but tend to fall into two broad categories: those focused on mitigating climate change or other environmental issues, and those focused on supporting small-scale producers. Positive incentive systems that aim to address environmental problems (such as REDD+, and payments for ecosystems services) can benefit IPLCs, but in practice their impacts have been mixed both for biodiversity and for people,⁽³⁵⁾ including IPLC women.⁽³⁶⁾ The following examples demonstrate IPLC engagement in working to ensure that positive incentives benefit people:

- In Guyana, after concerted lobbying from indigenous communities, the Amerindian Land Titling project, funded by REDD+, has sought to deal with outstanding territorial claims and land title applications before climate investments go ahead.⁽³⁷⁾
- Another REDD+ programme, Colombia's Vision Amazonia 2020, contains a component for extending the title boundaries of indigenous land, although Amazonian indigenous peoples' organisations have criticised it for failing to apply safeguards.⁽³⁸⁾
- In Peru, climate-change-related financing from the World Bank has been linked to ambitious land titling and land rights objectives for indigenous peoples, and in those projects run by indigenous peoples' organisations, impressive gains were made in registration of titles between 2011 and 2018.⁽³⁹⁾

Recent research also highlights that REDD+ can be made more effective through early planning, up-front investment, the collection of baseline data, and rigorous and widespread monitoring of impacts.⁽⁴⁰⁾

Box 6: Vu Thi Hien, Centre of Research and Development in Upland Areas, Vietnam, and Grace Balawag, Tebtebba Foundation, Philippines

Monitoring in process.



Case study: Getting REDD+ to work for IPLCs in Vietnam

In a pilot project in north Vietnam, Tebtebba and the Centre of Research and Development in Upland Areas worked to test whether REDD+ financial incentive systems for carbon sequestration could be developed based on respect for the wishes, rights—including gender and ethnic equality and sensitivity—and traditional knowledge of IPLCs.

The project involved 137 communities comprising over 11,000 people. The communities established self-governing groups that then set up eight community co-operatives, gathered into two ethnic alliances. The communities gained legal status, including legal use rights over 5,386 hectares of natural forest for a period of 50 years. They also gained the right to work in partnership with the local government to implement state policies.

The heads of the co-operatives received training and resources for capacity building to ensure their full independence as forest owners, and farmer groups with technical teams were trained in carbon accounting and community-based forest monitoring. A map demarcating community forests was created by the communities, and local forestry experts were trained to monitor tree diversity, conservation and sustainable use of biodiversity, using tools that were developed based on both modern science and traditional knowledge and practices.

All of these steps were achieved according to a set of key principles, including:

- Respect for rights related to land and forest use;
- Promotion of community self-reliance, self-determination and ownership, as well as partnerships;
- Promotion of collective work and collective rights, including in relation to customary laws and forest protection;

- Promotion of traditional governance and traditional knowledge;
- Holistic, horizontal, integrated capacity building;
- Enhance gender and ethnic equality and sensitivity.

Overall, the project has been a success. The cooperatives and alliances are functioning well and, most importantly, the community forest area in the two provinces has been well protected. The forest has become greener, with more young and valuable tree species, more herbaceous plants, more clean, fresh water for domestic use and irrigation, more wildlife, and reduced risk of flooding. The cooperatives are increasingly engaged in state forestry policy processes and are generating income for the forest owners' communities. As a result, the district governments in Thanh Hoa Province (in Central Vietnam) and Thai Nguyen Province (in northern Vietnam) have started to sign forest protection contracts with self-governing groups, primarily through the cooperatives, in recognition of their efficacy.

The local government and people greatly appreciate the success of the project. It has improved the local biosphere and improved sustainability by generating revenue for those involved. It has also provided legal status to local communities in a way that aims to respect their human rights, traditional knowledge, traditional forest monitoring systems and collective decision-making and ownership.

With certain preconditions, such as secure tenure rights, positive incentives focused on supporting small-scale producers could safeguard IPLC livelihoods and cultural identities while also protecting the biodiversity on their lands and territories.⁽⁴¹⁾

Good examples of positive incentives:

- The Forest and Farm Facility in Yen Bai Province, Vietnam, supports the members of the Vietnam Farmers Union to grow cinnamon, star anise, plants for herbal medicine, and mulberry for silkworm farms. The farmers market their products collectively and have worked together to learn and apply organic growing techniques. In 2019, a US\$3.5 million cinnamon processing factory was completed so that the cooperatives can supply organic cinnamon to the global market. This level of investment for forest-based organic products protects biodiversity within the harvesting areas.⁽⁴²⁾
- The Mountain Partnership Products Initiative, supported by the Food and Agriculture Organization of the United Nations (FAO), promotes native crops cultivated by small-scale farmers in remote areas, and has developed (with Slow Food) a voluntary product-labelling scheme.⁽⁴³⁾
- The Non-Timber Forest Products Exchange Programme supports forest-based communities in Asia by helping them develop enterprises based on forest products. Efforts include assisting with a certification scheme for rattan production in Indonesia and marketing sustainable, handwoven eco-textiles in the Philippines and Indonesia.⁽⁴⁴⁾



Working in the forest. Credit: Cong Duong Hoang.

- The International Partnership for the Satoyama Initiative—launched at the tenth meeting of the Conference of the Parties to the CBD (COP 10) and significantly expanded since then—supports the maintenance, revitalisation and strengthening of locally evolved and adapted socio-ecological production landscapes and seascapes, including IPLC efforts and projects aimed at nurturing traditions and culture and maintaining ecosystems while improving local economies.
- The Right Energy Partnership is a unique collaboration between indigenous peoples and other stakeholders to deliver energy access and support the development of appropriate, rights-based renewable energy, contributing to SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all); the empowerment of indigenous women and communities; and global climate action.

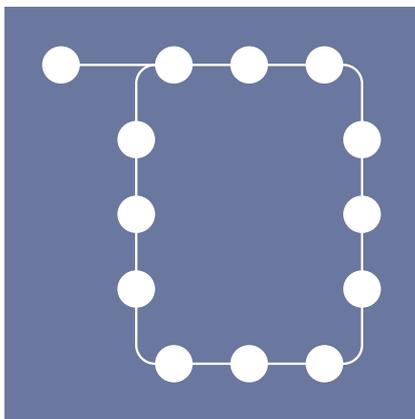
Despite some good examples, given the relative invisibility of small-scale farmers and producers, including indigenous peoples, in the global economy, as evidenced in Target 7 and 13, the necessary incentives are not always available.⁽⁴⁵⁾

Opportunities and recommended actions

- IPLCs, their supporters and other actors should explore opportunities to work in partnership with new financial actors, particularly financial institutions and private investors, both to ensure harmful subsidies such as those for fossil fuels are phased out and to support the scaling-up of local farm and forest production, community social enterprises, diverse local economies and other transition initiatives.
- Governments should set progressive percentage targets for redirecting finance from perverse subsidies to positive incentives by 2025 and 2030, and direct COVID-19 pandemic responses into opportunities to reshape the economy towards sustainability for people and planet.
- Governments and relevant actors should ensure that positive incentive systems related to climate change or the environment are created with the full and effective participation of IPLCs, have the flexibility to build the capacity of locally controlled sustainable enterprises, and have adequate safeguarding systems in place.
- Governments and relevant actors should embed technology assessments at all levels of biodiversity policy, planning and implementation.
- Governments and relevant actors should facilitate input from IPLCs in addressing Target 3, based on their traditional knowledge, practices and innovations, and also in key related processes including SDGs 2, 5, 7 and 15; the *United Nations Framework Convention on Climate Change*; and trade negotiations where relevant incentives are considered.

Key resources

- Macqueen, D., Bolin, A., Greijmans, M., Grouwels, S. and Humphries, S. (2020) 'Innovations towards prosperity emerging in locally controlled forest business models and prospects for scaling up', *World Development* 125.
- Convention on Biological Diversity (2011) *Incentive measures for the conservation and sustainable use of biological diversity: Case studies and lessons learned*. Montreal: Convention on Biological Diversity. Available at: <https://www.cbd.int/doc/publications/cbd-ts-56-en.pdf>
- Carino, J. and Sriskanthan, G. (2018). *Renewable Energy & Indigenous Peoples*. Indigenous Peoples Major Group for Sustainable Development. Available at: <https://www.indigenouspeoples-sdg.org/index.php/english/all-resources/ipmg-position-papers-and-publications/ipmg-submission-interventions/93-renewable-energy-indigenous-peoples/file>



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 messages

- Unsustainable global production and consumption systems continue to drive biodiversity loss and displace indigenous peoples and local communities (IPLCs).
- Voluntary standards, such as certification systems, are proving insufficient to bring about the transformative changes needed to ensure sustainable production and consumption.
- Small-scale local production systems contribute far more to global production than is generally realised. They are more sustainable, more resilient and more beneficial for local livelihoods and biodiversity than industrial production.
- Support for local sustainable production systems needs to be scaled up urgently, and community-led natural resource governance systems must be fully recognised and enabled.

Significance of Target 2 for IPLCs

Progress towards Target 4 has been limited.⁽⁴⁶⁾ Since 1980, the consumption of materials per person has risen 15 per cent and over the past three decades global extraction of biomass, fossil fuels, minerals, and metals has risen by approximately 80 per cent.⁽⁴⁷⁾ As a result, industrial agriculture and the extractive industries have expanded further into IPLC lands and territories, with serious ecological and social consequences, including loss of species and ecosystems; pollution of waterways; and widespread displacement and destitution involving severe human rights violations.⁽⁴⁸⁾



Plantations and deforestation have a grave impact on the ways of life of nearby communities, who, despite these encroachments, often play a vital role in preserving biodiversity. This illustration depicts a patch of forest remaining after deforestation by fire, a method often used to clear land for plantations. Credit: Agnès Stienne, *Dépaysages de palmiers à huile*, Visionscarto.net.

Awareness of the dangers posed by unchecked production and consumption has come together into a dedicated target under the Sustainable Development Goals.⁽⁴⁹⁾ Attention, however, has been focused largely on consumer choice and improving efficiency on a product-by-product basis rather than considering the systemic changes necessary to keep within safe ecological limits.⁽⁵⁰⁾ In this context, the ecologically sensitive approaches of IPLCs to production and consumption, some of which are discussed in this chapter, are instructive. These approaches, however, have been insufficiently supported by governments and other actors with vested interests in maintaining the economic status quo or the resource extraction potential of IPLC lands and territories.⁽⁵¹⁾

Contributions and experiences of IPLCs towards Target 4

“The situation the Earth is in today has been created by unmindful production and unmindful consumption. We consume to forget our worries and our anxieties. Tranquilising ourselves with over-consumption is not the way.”

— Thich Nhat Hanh, spiritual leader, Vietnam

The widespread indigenous concept of *buen vivir* (living well in harmony with nature) is based on norms related to ecological and cultural balance that discourage overconsumption⁽⁵²⁾ and underpins the small ecological footprints of many indigenous societies. IPLCs often promote genetic diversity in their local production systems in the form of traditional crop varieties and traditional livestock breeds,⁽⁵³⁾ often purposefully propagated by women or by men, which makes these systems much more resilient to pests and natural disasters. Customary sustainable use of wild resources is also a common part of land use planning and territorial management. And some IPLCs are striving to improve international commodity certification schemes such as the Forest Stewardship Council and voluntary supply chain initiatives, including for the purpose of greater accountability.

Local sustainable production

The scale of smallholder contributions to global production is often overlooked. When multiplier effects are taken into account, they account for 12–35 per cent of global economic output, or US\$8.7–US\$25.9 trillion per year.⁽⁵⁴⁾ Moreover, when they are based on secure land rights and indigenous and local knowledge systems, local production systems provide far greater local social and economic benefits, and tend to be far more favourable to biodiversity, in comparison with mainstream models of production and consumption.⁽⁵⁵⁾ A concerted shift towards supporting these kinds of systems to persist and spread would transform production systems towards greater sustainability.⁽⁵⁶⁾

- Traditional coffee farms in the Sierra Norte de Puebla, Mexico, are reservoirs of biodiversity. They are also important sources of materials for handicrafts and local cuisine, which is promoted in inter-village food fairs organised by local youths.⁽⁵⁷⁾
- Yanesha indigenous women in the central Amazonian region of Peru have been developing strategies to recover knowledge about natural dyes and native coloured cotton (*bSPAN* in Yanesha), which is strengthening their initiatives from a territorial management perspective and improving their artistic production of clothes and other items for commercial purposes within the fair-trade framework.
- The Botanical Products Association of Liberia supports better livelihoods for its members through the development of non-timber forest products, and facilitates members' engagement in policy debates on sustainable forest management.⁽⁵⁸⁾
- In response to the increasing promotion of agro-chemicals and the threat of expansion of agribusiness and industrial plantations, in 2016 the Alliance of the Indigenous Peoples of the Highlands self-declared the Krayan highlands in Borneo as an area for organic and traditional agriculture. In 2019, the Head of the Nunukan regency issued a decree for the preservation and development of the traditional agricultural practices, including the importance of agrobiodiversity of rice and other crops in the Krayan Highlands. This is a formal government recognition of this area as their *territory of life*.⁽⁵⁹⁾
- The Māori in Aotearoa/New Zealand offer an example of local sustainable land management. Their regional tribal (*iwi*) environmental management plans bring together spiritual and natural resource concerns in overall environmental governance, and incorporate the concept of guardianship over the sky, the sea, the land and sacred places (*kaitiakitanga*).

International standards

“What do we mean by the term sustainability? The palm oil industry has not dealt with many of the past and present violations of community rights by agribusiness developments. It is not enough to create voluntary certification schemes, while we continue to suffer land grabs and the ongoing violation of human rights.”

— Franky Samperante, Pusaka, Indonesia

IPLCs have been working with civil society partners to limit the impacts on their lands of industrial agriculture, mining and hydrocarbon extraction through community-based environmental and social monitoring, advocacy, and representation on voluntary certification bodies, such as the Roundtable for Sustainable Palm Oil (RSPO). On paper, many such certification schemes have impressive requirements in relation to respect for human and indigenous rights and environmental and social impacts; however, their implementation commonly has serious shortcomings. For example, the RSPO requires companies to carry out land tenure assessments, assess high conservation values (including biodiversity, cultural and livelihoods values), and put in place integrated conservation and land use plans before clearing any land;⁽⁶⁰⁾ however, in many cases these measures have been omitted and very few such plans have been developed. Most certification schemes are still top-down processes that marginalise IPLC perspectives and values.⁽⁶¹⁾

IPLCs are critical partners in monitoring certified operations on the ground and drawing attention to cases of non-compliance. However, companies who break the rules have in some cases simply withdrawn from certification to avoid penalties (see Box 7). Clearly, voluntary supply-chain initiatives alone are not enough to enact the changes needed to create sustainable production systems that conserve biodiversity and respect the rights of IPLCs.



In September 2019, leaders from Santa Clara de Uchunya and FECONAU with legal support from IDL took their land rights struggle before Peru's highest court, the Constitutional Tribunal. Credit: FECONAU.

Box 7: Shipibo-Conibo people defend their territories from palm oil in the Peruvian Amazon

Protest against palm oil. Credit: FECONAU.



Case study: Federación de Comunidades Nativas del Ucayali y Afluentes and Forest Peoples Programme

The traditional lands of the Shipibo-Conibo indigenous community of Santa Clara de Uchunya in the Peruvian Amazon extend to more than 85,000 hectares. Historically, these lands have provided abundant game and fish, medicines, construction materials and clean water.

“We would go to our lands to eat paiche and all kinds of fish from the lake. My father would hunt there, my grandparents would hunt there. We walked freely there.”

— Luisa Mori González, President of the Mothers Club and community leader

However, only 218 hectares have been formally titled. Since 2012 the palm oil company Plantaciones de Pucallpa S.A.C (now Ocho Sur P SAC) has illegally acquired and deforested about 7,000 hectares of the untitled lands to convert them to palm oil plantations.⁽⁶²⁾ The environmental impact has been massive, with loss of lands and animals, as well as contamination from the spraying of agricultural chemicals. It has also brought violence, with armed groups of land traffickers clearing forests and those who protest facing death threats and intimidation. At the same time, this ongoing dispossession is fundamentally corroding the community’s way of life and ability to survive on their lands.

Despite threats, the community has made multiple efforts to hold the company to account. Plantaciones de Pucallpa was a member of the RSPO, and a formal complaint was made in 2015, which led to a *stop work* order. The community also appealed to the company’s European financiers, the London Stock Exchange’s Alternative Investments Market, and various United Nations and regional human rights mechanisms, as well as launching a criminal case in Peru, which has resulted in a high level investigation led by the Special Prosecutor for Organised Crime.

Despite the RSPO *stop work* order, suspension orders from the Ministry of Agriculture and Peruvian courts, and widespread condemnation from Peruvian forest and agricultural ministries, company operations continue. There is a general failure of enforcement, and the company has avoided suspending work, and large fines, by selling off its assets to new companies it has created and withdrawing from the RSPO and the London Stock Exchange.

The community has filed a ground-breaking constitutional lawsuit against the Peruvian Government for failing to process their land titling claim, which facilitated the company's land grab. The case was heard by the Constitutional Tribunal in September 2019, with judgement pending at the time of writing.

In December 2019 the community secured a major victory when the world's largest sovereign wealth fund, Norway's government pension fund, decided to divest from Alicorp, a consumer goods company which, investigations had shown, was buying palm oil derived from Ocho Sur's plantation.



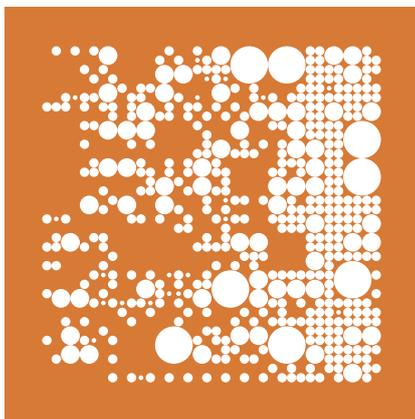
Gathering medicinal plants from a community-managed forest near Hetauda, Nepal. Credit: Claire Bracegirdle.

Opportunities and recommended actions

- IPLCs should maintain, strengthen and expand their modes of sustainable production and consumption.
- Governments and relevant actors should support IPLCs to develop, implement and scale up local sustainable modes of production and management, based on secure collective land rights.
- Governments and relevant actors should ensure that all supply-chain actors are subject to, and adhere to, clear human-rights and environmental regulation, with clear mechanisms for access by IPLCs, including to accountability mechanisms and complaints processes.
- Governments and relevant actors should facilitate inclusion of IPLC knowledge and experience in establishing the policy framework for sustainable production and consumption in the overall strategy towards the 2050 vision of ‘living in harmony with nature’, encompassing SDG 12 and other relevant international policy guidance.⁽⁶³⁾

Key resources

- Anderson, C., Bruil, J., Chappell, M. J., Kiss, C. and Pimbert, M. P. (2019) ‘From transition to domains of transformation: Getting to sustainable and just food systems through agroecology’, *Sustainability* 11(19).
- FAO (2019) *The state of the world’s biodiversity for food and agriculture*. Bélanger, J and D. Pilling (Editors). Rome: FAO Commission on Genetic Resources for Food and Agriculture Assessments. Available at: <http://www.fao.org/3/CA3129EN/ca3129en.pdf>



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 messages

- Natural habitats are declining at an alarming and unprecedented rate, but there is evidence that they are declining less rapidly in the lands and territories of indigenous peoples than elsewhere.
- Nonetheless, the lands and territories of indigenous peoples and local communities (IPLCs) and the associated habitats are under widespread threat from industrial-scale incursions.
- IPLCs who are countering these threats are facing increasing violence, intimidation and criminalisation.
- To address Target 5, universal recognition and support for IPLC rights, acceleration of titling of their lands and waters, and zero tolerance for persecution of environmental human rights defenders are essential.

“Our community leaders are putting their lives at risk to defend our world.”

— Geovaldis González Jiménez, community defender, Colombia

Significance of Target 5 for IPLCs

Land-use change, and the subsequent loss of natural habitats, is not only the most important cause of biodiversity loss across the world⁽⁶⁴⁾ but also has a disproportionate effect on IPLC livelihoods, cultures and wellbeing. The problems have been recognised for many decades, yet forests and other habitats continue to be destroyed and degraded at an alarming and unprecedented rate.⁽⁶⁵⁾ Decision-making dominated by elites and powerful vested interests is often linked



A member of a local diving team in Okinawa, Japan. The diving team monitors Oura Bay and documents what will be lost when the Japanese government fills it in to build a US military airstrip. Credit: Ian Teh.

to systemic corruption and distortions of democratic rule, with large parts of society left behind.

Many IPLCs are fighting back against habitat destruction and working to defend their lands and territories, but are finding increasingly that, rather than receiving support for their actions, they face violence, intimidation and criminalisation. In these situations, they are often powerless to stop forests and other natural habitats from being destroyed as large-scale agriculture⁽ⁱ⁾ and the extractive industries expand onto their lands.^(ii, 66)

i. Commercial agriculture is estimated to be the proximate driver for 80 per cent of deforestation worldwide. Source: Hosonuma, N., Herold, M., de Sy, V., de Fries, R.S., Brockhaus, M., Verchot, L., Angelsen, A., Romijn, E. (2012) 'An assessment of deforestation and forest degradation drivers in developing countries', *Environmental Research Letters* 7(4).

ii. At present, there are no clear data on the lands of non-indigenous local communities.

Contributions and experiences of IPLCs towards Target 5

Indigenous peoples are estimated to own and manage over a quarter of the world's land area,^(67, 68) and 36 per cent of intact forest landscapes reside within their lands and territories.⁽⁶⁹⁾ When the social, legal and economic conditions enable them to do so, IPLCs are highly effective at preventing the loss of natural habitats: comparative studies have shown that territorial management and conservation have been at least as effective at halting forest loss as government protected areas.⁽⁷⁰⁾

In many cases, IPLCs act as environmental stewards. For example:

- o The Kayapo people in Amazonian Brazil have conserved 105,000 square kilometres of forests in a frontier otherwise characterised by heavy deforestation due to agricultural expansion, logging and illegal gold mining.⁽⁷¹⁾
- o The Wampis people in Peru have formed a collective self-governing body which takes peaceful direct action to remove illegal miners and land-grabbers.⁽⁷²⁾ Similarly, in the Resguardo Cañamomo Lomapieta in Colombia, indigenous communities have established a guard to patrol and monitor their lands, removing illegal miners.⁽ⁱⁱⁱ⁾

iii. For more details on the Resguardo Cañamomo Lomapieta, see Target 15.

However, many IPLCs working to defend their lands and ways of life are facing increasing levels of violence, intimidation and criminalisation, an issue recog-

nised by the UN Human Rights Council in March 2019.⁽⁷³⁾ Although statistics are hard to come by due to a lack of systematic reporting, important investigations by Global Witness, the Business & Human Rights Resource Centre, Front Line Defenders, various UN special rapporteurs and others all point to a rising tide of criminalisation and assault:

- Victoria Tauli-Corpuz, the UN Special Rapporteur on the rights of indigenous peoples, highlighted in her 2017 report to the UN Human Rights Council that indigenous peoples have been subjected to a spectrum of abuse including attacks, stigmatisation, forced displacement, criminalisation, and threats.⁽⁷⁴⁾ She herself was placed on a terrorist list by the government of the Philippines in February 2018 after speaking out against the administration's human rights violations.
- In 2018, Front Line Defenders found that 77 per cent of the human rights defenders killed in 2018 were defending land, indigenous rights or the environment. Research by the same organisation in 2019 continued to show that those working in defence of land rights are disproportionately represented in the statistics of killings, and that 85 per cent of those killed had previously been threatened either individually or as part of the community or group in which they worked.⁽⁷⁵⁾
- In 2018, Global Witness also noted that businesses that relied heavily on the use of natural resources were most implicated in the killings of environmental human rights defenders. The extractive industries were the deadliest sector, followed by agribusiness, water projects and dams, and logging.⁽⁷⁶⁾
- Similarly, the UN Special Rapporteur on the situation of human rights defenders noted in his 2016 report on environmental human rights defenders,⁽⁷⁷⁾ that the commodification of the environment is a driver of social and environmental conflict, meaning that increasing intensification of competition for natural resources could lead to worse outcomes for defenders.
- Apart from killings and other direct physical attacks, environmental human rights defenders are also subject to threats, intimidation and smear campaigns; arrest and legal action; and disappearance.⁽⁷⁸⁾ The Business & Human Rights Resource Centre has documented more than 2,000 such attacks on human rights defenders raising concerns about business-related human rights abuses since 2015, with mining and agribusiness being the most dangerous sectors.⁽⁷⁹⁾

Clearly, this rise in criminalisation and assault has created a climate of fear and insecurity in many communities, where the strongest allies in fighting biodiversity loss are most at risk of attack. It has created severe environmental conflicts and heightened calls for environmental justice.⁽⁸⁰⁾

In Latin America and the Caribbean (LAC), where the highest numbers of killings are taking place, an important step towards addressing the issues is the opening for signature of the *Escazu Agreement* (the regional agreement on access to information, public participation and environmental justice in Latin America and the Caribbean).⁽⁸¹⁾ The *Escazu Agreement* is the first environmental human rights treaty in the region. So far, it has been ratified by eight LAC countries, and it will come into force when 11 ratifications are submitted. Its implementation is currently being piloted and there are hopes it will come into force later this year. However, much greater action is needed to address these conflicts. Situations such as those described in Box 8 and Box 9 undermine the ability of IPLCs to effectively manage their lands and territories, and this, in turn, accelerates the loss of habitats and biodiversity.



Box 8: Dayak Bahau Busaang community of Long Isun and Forest Peoples Programme

A man explaining the use of plants for medicine in Long Isun, Indonesia. Credit: Angus MacInnes.

Case study: Criminalisation of a Dayak community in Long Isun, East Kalimantan, Indonesia

“Dayaks can’t be separated from the forest; our lives are spent in the forest. Without her we lose our identity.”

— Inui Yeq, spiritual leader, Long Isun

So-called *responsible logging*, which has been brought into the community as part of a larger transnational conservation project, The Heart of Borneo, has caused serious conflict between Long Isun and a neighbouring community, Naha Aruq. This is primarily thanks to a flawed participatory mapping process carried out for the conservation project by The Nature Conservancy.

In 2014, the Long Isun community protested the initial entry onto their land of the Forest Stewardship Council (FSC) certified logging company PT Kemakmuran Berkah Timbers, including onto their ancestral grave sites. Community members halted the logging tractors to force dialogue, in accordance with Dayak customary law.

However, in response, the police arrested village representatives in retaliation. Long Isun community member Theodorus Tekwan was jailed for 109 days, only to be released without charge. Tekwan noted of his arrest: *“I remember boats full of police coming and surrounding me and my wife while we were in our garden... It was like they were arresting a terrorist.”* On his eventual release, Tekwan was intimidated into signing a document stating he had spent only one evening in jail. The criminalisation of Tekwan deterred the community from putting up any formal resistance for over two years, but they are now continuing their struggle, engaging with the FSC over the lack of consent for certification of logging on their lands.

This said, the threat of future imprisonment still looms for Tekwan. As recently as October 2019, the indigenous activist was coerced into signing a letter which rescinded his right to seek compensation for past harms committed by the violating timber company. These events have since triggered a second FSC Policy of Association complaint which aims to achieve remedy for the community for the loss of over 2,000 hectares of forest. The results of which are expected in May 2021.

Box 9: Mastupang Somoi,
Jawatankuasa bio Komuniti
Gabungan 6 kampung and
Lanash Thanda, Sabah
Environmental Protection
Association

Mangroves being destroyed for shrimp farming in Sabah, Malaysia. Credit: Alice Mathew.



Case study: Communities fight to protect mangroves in Pitas, Sabah, Malaysia

The villages around the Telaga River in Pitas, Sabah, Malaysia, depend on the local mangroves for their livelihoods, through farming, fishing and foraging. However, their way of life has been threatened by a shrimp aquaculture project that is being promoted by the Malaysian Government, allegedly to reduce poverty in the area. The project, operated by Sunlight Inno Seafood Sdn Bhd, a joint venture between state-owned Yayasan Sabah and a private investment firm, was dogged by controversies from the start.

Between 2012 and 2014, about 1,000 hectares of pristine mangrove forest were clearfelled to make way for the aquaculture project. The six affected communities, with a population of approximately 3,000, complained that the mangroves were important breeding ecosystems for the species they depend on. The promised jobs generally failed to materialise. After complaints from the villagers and environmentalists, the company was fined for failing to obtain an environmental impact assessment (EIA) report for the swamp clearing in 2013 and ordered to stop work until an EIA was submitted. To the consternation of villagers, the EIA subsequently submitted was approved in 2015.

Mastupang Somoi, the chairperson of a village action group, noted in response that “the company do not have any approval to develop this area. We were not informed that this was an approved project.” As part of the land clearance, the company stands accused of displacing villagers; of denying them their right to their customary lands and access to traditional areas of natural resources; of polluting wells and tributaries with soil and siltation; and of damaging sites that are sacred to the villagers.

The affected communities have come together, with the support of NGOs such as the Sabah Environmental Protection Association, to protect what is left of their mangroves. They want to halt further expansion of the project, and ensure that the government supports their own self-determined development. The communities are now developing a management plan to protect the remaining 400 hectares of mangrove.

IPLCs have also been working at the policy level to prevent the loss of natural habitats:

- In 2014, indigenous peoples joined with governments, multilateral institutions, companies and civil society to release the New York Declaration on Forests which seeks to ‘strive to halve deforestation by 2020 and to end it by 2030.’
- In a related initiative, also in 2014, a global coalition of indigenous peoples pledged to protect 400 million hectares of forests.⁽⁸²⁾
- IPLCs worked hard to get the CBD’s Plan of Action on Customary Sustainable Use⁽⁸³⁾ passed in 2014, and have continued to engage with its implementation at the local level across the globe.⁽⁸⁴⁾
- In 2014, a group of IPLCs and supportive NGOs gathered to develop the Palangka Raya Declaration on Deforestation and the Rights of Forest Peoples, which calls for urgent action to address rights violations and to secure the world’s forests.⁽⁸⁵⁾
- At the sectoral level, IPLC representatives are working with the Roundtable on Sustainable Palm Oil to promote a mosaic land-use approach for palm oil, including zones where community landowners can grow oil palms, but also zones with multiple uses, including small-scale agriculture and conservation areas for protecting high carbon-stock forests and high conservation values.
- In 2019, indigenous peoples’ organisations launched the Global Initiative to Address and Prevent Criminalization and Impunity against Indigenous Peoples, spearheaded by the UN Special Rapporteur on the rights of indigenous peoples ‘to prevent, respond, reduce and prevent acts of criminalization and impunity against indigenous peoples and to provide better protection and access to justice for actual and potential victims not only as individuals but as collectives or communities.’
- At the 2019 UN Forum on Business and Human Rights, indigenous peoples’ representatives, community leaders and supportive organisations launched the Zero Tolerance Initiative, calling for businesses to take a leading role in addressing violence and threats linked to global supply chains.

“If we are going to save the planet, we have to stop killing and criminalising the people who protect it.”

— Victoria Tauli-Corpuz, former UN Special Rapporteur on the rights of indigenous peoples

Opportunities and recommended actions

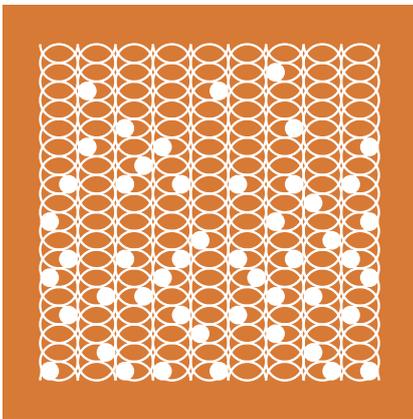
- Governments and all relevant actors should support IPLCs who protect their lands, territories and resources, and the biodiversity within them, from external forces that cause biological and cultural diversity loss.
- Governments should commit to providing a safe and enabling environment in which environmental defenders—with particular attention to indigenous peoples, local communities and women—can operate free from threats, harassment, intimidation and violence.⁽⁸⁶⁾
- The United Nations Secretary-General, Human Rights Council special procedure mandate-holders, the UN Office of the High Commissioner for Human Rights, other global and regional rights-related institutions, and governments should harmonise across international environmental and human rights conventions to: respect, protect and fulfil the rights of environmental human rights defenders; support prevention and protection measures; and strengthen the independence of investigative and judicial bodies.
- Governments and donors should commit to expanding the extent of IPLC lands and resources under secure tenure, including through: national legislation related to land rights; new forest tenure funds accessible to communities; new incentive mechanisms; and monitoring and reporting based on appropriate indicators.
- Governments should support the contributions of IPLCs to Target 5 and to related key processes, including but not limited to the Sustainable Development Goals (particularly SDG 15), the CBD Plan of Action on Customary Sustainable Use of Biological Diversity, the UN Environment Programme’s resolution on innovation on biodiversity and land degradation (UNEP/EA.4/Res.10), and climate change processes.⁽⁸⁷⁾
- The private sector and conservation NGOs must commit to zero tolerance of human rights violations linked in any way to their work, and implement policies and procedures that actualise those commitments.

Key resources

- Martone, F. (2019) *Enough! Pledging zero tolerance to attacks against environmental and human rights defenders*. Moreton-in-Marsh: Forest Peoples Programme. Available at: <https://www.forestpeoples.org/en/lands-forests-territories/report/2019/enough-pledging-zero-tolerance-attacks-against-environmental>
- Global Witness (2019) *Enemies of the state? How governments and businesses silence land and environmental defenders*. London: Global Witness. Available at: <https://www.globalwitness.org/en/campaigns/environmental-activists/enemies-state/>
- Fa, J.E. et al. (2020) ‘Importance of indigenous peoples’ lands for the conservation of intact forest landscapes’, *Frontiers in Ecology and the Environment* 18(3).



● A woman carries out an offering ceremony at the Tiny House Warriors' camp. The Tiny House Warriors are a group of activists who constructed a series of homes in the path of the Trans Mountain oil sands pipeline development. Credit: Ian Williams.



Target 6: 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 messages

- Globally, small-scale marine and inland fisheries employ over 90 per cent of fishers and fishworkers and contribute nearly 50 per cent of the total fish catch.
- Small-scale fisheries have less bycatch, use less destructive gear, and consume less fuel than industrial fisheries.
- Despite evidence that community resource governance can reduce or reverse degradation, the roles of IPLCs continue to be undervalued and marginalised.
- A radical transformation in governance, which secures the rights and customary practices of IPLCs and promotes co-management of resources by small-scale fishers, is required to protect and restore fish and invertebrate stocks and aquatic plants.

Significance of Target 6 for IPLCs

About one third of marine stocks are overfished, and the proportion of both marine and inland fish stocks that is exploited unsustainably continues to grow. ⁽⁸⁸⁾ This is in spite of the fact that an increasing percentage of marine fisheries, accounting for about 15 per cent of wild-caught seafood, is certified under a



standard that recognises progress towards sustainable management.⁽⁸⁹⁾ Less attention has been paid to freshwater fisheries which, importantly, account for about 40 per cent of all fish destined for human consumption.

● The community fishing area of Kampung Melangkap Tiang. Credit: Alice Mathew.

Unsustainable fisheries—especially industrial fisheries—threaten marine and coastal biodiversity severely, and therefore they threaten the food security and ways of life of IPLCs, including most of the 800 million people worldwide who depend on fishing or small-scale fisheries for their food and livelihoods.⁽⁹⁰⁾

Small-scale fisheries tend to be more sustainable because they have less by-catch, use less destructive gear, and consume less fuel.⁽⁹¹⁾ However, the scale of their contributions and their potential role in global sustainable fisheries production are insufficiently recognised and supported, and small-scale fishers continue to be marginalised, particularly when facing large-scale fisheries; coastal and upstream industries; reclamation projects; ports; and dams.⁽⁹²⁾

Small-scale fisheries contribute nearly 50 per cent of the global fish catch, almost all of which is for direct human consumption, and employ over 90 per cent of the world's fishers and fishworkers.⁽⁹³⁾ Women represent 14 per cent of fishers and hold 60–90 per cent of fish-processing jobs,⁽⁹⁴⁾ making a critical contribution to the nutrition of more than three billion people. However, women are often excluded from consultation processes in the mainstream fisheries industry and they remain vulnerable to marginalisation, poverty and insecure resource rights.⁽⁹⁵⁾

To make progress towards Target 6 and the SDGs, it is imperative that the central role of small-scale fishers, including IPLCs and women, in the sustainable management of aquatic resources is recognised.

Contributions and experiences of IPLCs towards Target 6

IPLCs are increasing their contributions to Target 6 both by revitalising and strengthening customary sustainable practices; through collaboration and shared governance schemes with scientists and government institutions; and by progressing the recognition of the rights and interests of small-scale fishers.

- In the Asia-Pacific region, a very active network of locally managed marine areas (LMMAs) has emerged. An LMMA is defined as ‘an area of nearshore waters that is actively being managed in a *local* practitioner context by residing or neighbouring communities and/or families, or being collaboratively managed by both resident communities and local government representatives based in the immediate vicinity.’ Typically, they involve the creation of no-take areas (community marine protected areas) and restrictions on fishing equipment, species or seasons in order to improve sustainability or increase overall yields.
- In Costa Rica, responsible marine fishing areas (RMFAs) take a similar approach.⁽⁹⁶⁾ In an RMFA, the government and local fishing communities work together to agree rules and decisions related to responsible fishing, and co-develop a fisheries management plan. The first RMFA was recognised in 2009. In 2019 there were eleven formally recognised RMFAs and two more had been requested. All RMFAs are linked through a national network, which aims to implement the FAO’s *Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication* (the SSF Guidelines).⁽⁹⁷⁾ The network also facilitates sharing of experiences and lessons learned; monitors and promotes the generation of knowledge that incorporates both traditional and scientific knowledge; and implements a human-rights-based approach to marine conservation.
- In Zanzibar, the village of Kukuu on Pemba Island is one of many villages that has established a permanent no-take zone within a wider area that is subject to a temporary fishing closure, which is in turn part of the 1,000-square-kilometre Pemba Channel Conservation Area. These measures are designed to protect the villagers’ lucrative octopus fisheries and ensure sustainable use, and are supported by the Mwambao Coastal Community Network (a local NGO).⁽⁹⁸⁾ Mwambao collaborates with the government to improve fishery management and secure the future for local people and for the rich biodiversity of the area, which includes mangroves, seagrass beds and coral reef. It has played a key role in introducing and facilitating the implementation of the SSF Guidelines in Tanzania.⁽⁹⁹⁾
- In Madagascar, since 2015 Fanamby (an NGO working with local community organisations) has been monitoring the marine protected area of Loky Manambato, which has 15,000 hectares of coral reefs and eight archipelagos. Ten rangers from the local communities patrol the sea throughout the year to make sure that season closures and core marine protected areas are respected. In 2018, 400 fishermen from four village pilot sites began monitoring their catches of fish and octopus. These fishermen are members of five associations which are all involved in elaborating the *Dina* (local communities’ laws, which are recognised at the national level).⁽¹⁰⁰⁾



An octopus hunter searches for octopus in the clear waters of the lagoon off Bwejuu in Zanzibar, Tanzania. Credit: Tommy Trenchard.

IPLCs also contribute to sustainable management of fish and other aquatic resources in inland waters such as rivers, lakes and streams. For example:

- In Cambodia, over 500 community fisheries institutions cover an area of over 850,000 hectares and with some 188,000 members, including over 61,000 women. Registration of a community fisheries institution requires the development of internal rules and regulations based on a calculation of sustainable yields. In 2012, an evaluation of 450 community fisheries institutions documented teeming fish stocks and real benefits to local people in terms of raised standards of living.⁽¹⁰¹⁾
- In Nepal, the Kirant indigenous peoples protect lakes and wetlands through a focus on language, cultural, religious and spiritual values.⁽¹⁰²⁾ The protection of the sacred lake Shalpa Pokhari in Bhojpur province, while benefiting from a multi-stakeholder approach, is based on an ancient intangible heritage that emphasises the spiritual aspects of diverse habitats, including the wetlands' birds, frogs and wildlife in the wider 'Himalayan Sacred Landscape'.⁽¹⁰³⁾
- In Indonesia, *Sasi* is a 400-year-old traditional conservation system and natural resource management concept applied to both terrestrial and aquatic resources; it is effective in regulating the use of resources in indigenous communities, and solving conflicts and protecting vulnerable groups such as women and children, particularly widows and orphans. In the Haruku community where *Sasi* has been used, community regulations have been put in place to implement customary laws and traditional knowledge for a more sustainable use of natural resources and lands owned by the community, including inland and coastal waters, and to successfully protect the community's territory through collective and united action against development projects pushed forward by powerful external actors.⁽¹⁰⁴⁾
- In Sabah, Malaysia, the customary *tagal* system, a sustainable system for inland fisheries, has received government recognition in recent years (see Box 10).

Case study: The community-based tagal system in Sabah, Malaysia

Tagal means prohibition in the Dusun language, and has been practised by the indigenous peoples of Sabah for many generations. It involves shared responsibilities and management, not only for rivers but also for other natural resources. This traditional concept has been adopted by the Sabah Fisheries Department and about 400 river co-management systems have now implemented the *tagal* concept.

One participating community is the Dusun community in Kampung Melangkap. Located at the foothills of Mount Kinabalu, their territories are rich in terrestrial and aquatic biodiversity. The high value they place on the rivers is clearly reflected in the village *adat* (customary rules), which include written by-laws and other rules for protecting and managing rivers.

The *tagal* system was formalised in Melangkap in 1986 and since then the community has seen an increase in fish numbers and in the number of endemic species. *Bombon* committees of elected villagers were set up to manage *tagal* areas (*bombon* is a Dusun word referring to an area where strict rules are applied). Some common rules apply to *tagal* areas:

- *Tagal sungai*: part of the river may be demarcated as an area where access by others is prohibited; for example, the *lubuk* (deep pool).
- Fish poisoning, blast fishing and the use of harmful fishing equipment are prohibited.
- Entry by outsiders without the community's prior permission is prohibited.
- Penalties are issued to those who violate the *tagal* rules and regulations.

In the past, there was a three-year no-take period followed by an open season, but the current *bombon* committee has decided to *tagal* the river with no harvest at all, due to benefits from ecotourism, which relies on fish as a major attraction.

The *tagal* system is now linked to the Melangkap community protocol, which includes strict *adat* rules and defines free, prior and informed consent processes for activities by external actors that may affect the community and their territories. Thus, the Melangkap community has one of the most comprehensive access and benefit-sharing models, which complements the Sabah Biodiversity Enactment 2000 and Malaysia's Access to Biological Resources and Benefit Sharing Bill 2017. To date, the Melangkap Protocol has been used successfully by the community to negotiate the avoidance of a sacred site during planning of road infrastructure; to limit externally driven tourism development to communal land; and to establish a benefit-sharing system for the community's ecotourism project.



In some cases, IPLCs are also addressing the decline in fisheries and aquatic biodiversity using an integrated rights-and-ecosystem approach. This is particularly well exemplified by the case study from the Pacific Northwest in the United States (see Box 11). Successful IPLC projects related to salmon have also been reported elsewhere, including Arctic Finland, where Saami people are rewilding salmon in the Näättämö River,⁽¹⁰⁵⁾ and the Kamchatka Peninsula in the Russian Federation (Box 3).

● A child plays with fish in Sabah. The Mel-angkap community protocol has been used to establish equal sharing of benefits from ecotourism. Credit: Lano Lan.

Box 11: Preston Hardison, Tulalip Natural Resources Treaty Rights Office

In 2014, tribes led the way for dismantling the Glines Canyon Dam on the Elwha River, the largest dam removal in US history, and they are working to remove others. Credit: J Daracunas.



Case study: Tribes address salmon declines in the US Pacific Northwest

The Pacific salmon is a cultural keystone species for many indigenous peoples of the West Coast of Canada and the United States. Salmon are our relatives, central to our histories, identities, stories, expressions, culture and economies. We honour them every year with the first salmon ceremony, through which we communicate with the salmon people in order to renew our relations.

The tribes of Washington State possess inherent rights to salmon stocks, and these rights were re-affirmed by the United States Supreme Court in 1989. The Northwest Indian Fisheries Commission was established for tribes to manage salmon harvesting, allocation, conservation and restoration. Tribal representatives sit on the bi-national US–Canada Pacific Salmon Commission and other salmon technical advisory and management boards.

Nearly US\$1 billion has been spent in the last 20 years on salmon recovery. However, despite this, most salmon stocks are listed under the *Endangered Species Act* as threatened or endangered, and salmon are in decline in three quarters of the state.⁽¹⁰⁶⁾ The loss of salmon is having many ripple effects, from the loss of marine nutrient delivery to upper watersheds to the endangerment of killer whales that rely on them.

Our fishing rights are a critical precondition for sustainable salmon fisheries, and the recognition of these rights in Washington has contributed to salmon co-management in which we have legally mandated equal standing with federal and state agencies. But this is not sufficient if underlying causes of decline, some of them far from us, are not addressed. Some causes are local: hydroelectric dams; agrochemical pollution from farms and dairies; the failure to maintain culverts and fish passage; flooding that destroys spawning grounds; and the discharge of pollutants, nutrients, pharmaceuticals and stormwater into coastal waters by cities. Others are distant: streams and oceans are warming; rainfall patterns are changing; carbon in the atmosphere is causing acidification; and there are atmospheric changes that span

many jurisdictions. Some of these causes of decline cannot be mitigated by actions taken at a particular site.

We are addressing this in multiple ways. The Tulalip Tribes led in establishing the Sustainable Lands Strategy, a coalition of tribes and farmers that works to develop win-win solutions that benefit farmers and salmon. In 2014, tribes led the way for dismantling the Glines Canyon Dam on the Elwha River, the largest dam removal in US history, and they are working to remove others. The Tulalip Tribes are also developing a version of the ecosystem management decision-support system that provides scenario building and decision support for restoration and regulations based on differing levels of analysis.

However, recovery work is based on local symptomatic treatment of the impacts, rather than addressing large-scale underlying causes. The latter will not be resolved without transformative change that matches the scale of the impacts that endanger our brother salmon. Because of the nature of the life cycle of the salmon, which runs from mountains to the north Pacific Ocean, salmon problems cannot be solved without involving multiple jurisdictions. While we take all the necessary actions at the local level, a whole-of-context approach to problem-solving is needed to achieve fisheries sustainability.

Opportunities and recommended actions

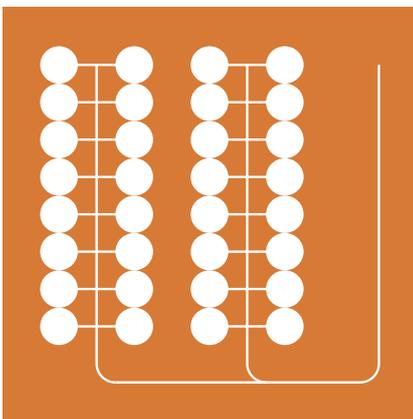
- IPLC fishers should continue to assert and renew their customary tenure rights and relationships to waters and aquatic living resources, and expand their local, regional and global contributions and solutions towards sustainable aquatic ecosystems.
- Governments and all relevant actors should formally recognise IPLC fishers' traditional tenure and customary rights to aquatic resources as a matter of urgency, consistent with a human-rights-based approach to fisheries management and conservation, including through upscaling of implementation of the *FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries* (the SSF Guidelines).
- Governments should reform policy and legislation, with the full and effective participation of IPLCs, to recognise and support their role in sustainable fisheries and in managing aquatic resources, and grant IPLC fishers preferential access for fishing in waters under national jurisdiction. This includes recognising and supporting the role of women and youth.
- Governments and relevant actors should fully implement the ecosystem approach, addressing linkages between terrestrial and marine ecosystems and synergies between sustainable aquatic resources and the SDGs.
- Governments should reduce subsidies that contribute to overfishing and overcapacity, and redirect investments to sustainable small-scale fisheries and community-managed and community-conserved aquatic areas.



Indigenous Moken children swimming off the coast of Mu Ko Surin island, Thailand. Credit: Andrew Testa.

Key resources

- Food and Agriculture Organization of the United Nations (2015) *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*. Rome: FAO. Available at: <http://www.fao.org/documents/card/en/c/I4356EN>
- International Collective in Support of Fishworkers: <https://www.icsf.net/en/page/588-About%20ICSF.html>
- Harper, S., Zeller, D., Hauzer, M. Pauly, D. and Sumaila, U. R. (2013) 'Women and fisheries: Contribution to food security and local economies', *Marine Policy* 39(1), pp. 56–63. Available at: <https://doi.org/10.1016/j.marpol.2012.10.018>.
- The LMMA (Locally Managed Marine Area) Network: <http://lmmanetwork.org/>



Target 7: Sustainable agriculture, aquaculture and forestry

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

Key messages

- Over the past decade concerns have been growing about global approaches to food and agricultural policy, and about the need to promote the role of indigenous peoples, small-scale farmers and producers, and local farm and forest enterprises.
 - Bringing agriculture, aquaculture and forestry under sustainable management requires mainstreaming and empowerment of IPLCs as central actors in transforming rural development.
 - Long-standing laws, policies and programmes that have promoted the growth of a globalised agro-industrial system of production and consumption, causing the widespread decline of biodiversity and the erosion of local management systems and customary sustainable use, need to be reformed.
-

Significance of Target 7 for IPLCs

IPLC production systems based on agroforestry, fishing, hunting and pastoralism constitute a large part of rural economies, which are hugely important for both their subsistence and market values.⁽¹⁰⁷⁾ However, customary land use and resource management systems have been under pressure from large-scale commodity production linked to global supply chains, to the neglect of small-scale producers.⁽¹⁰⁸⁾ The impact on IPLCs of export-led economic strategies has been dispossession of their territories, lands, forests and other natural resources; impoverishment; exploitation of their knowledge; and marginalisation in decision-making over matters affecting their futures.

Bringing agriculture, aquaculture and forestry under sustainable management requires mainstreaming and empowering IPLCs to be central actors in rural development, and reversing long-standing laws, policies and programmes that have resulted in the decline of biodiversity and the erosion of indigenous and local knowledge in rural landscapes. The sustained, local, collective actions of IPLCs combined can have a transformative global impact.⁽¹⁰⁹⁾

UN Decade of Family Farming; A global plan of action

Box 12

The Global Plan of Action adopted by the UN Decade of Family Farming 2019–2028 covers ‘all types of family-based production models in agriculture, fishery, forestry, pastoral and aquaculture and includes peasants, indigenous peoples, traditional communities, fisher folks, mountain farmers, forest users and pastoralists’.⁽¹¹⁰⁾

It acknowledges family farming as the predominant form of food and agricultural production in both developed and developing countries, producing over 80 per cent of the world’s food in terms of value.

‘Beyond food production, they [farming families] simultaneously fulfil environmental, social and cultural functions, preserving landscapes and biodiversity and maintaining community and cultural heritage.

[...] As widely recognized, the current food and agricultural system is largely responsible for deforestation, water scarcities, biodiversity loss, and soil depletion along with high levels of greenhouse gas emissions, which have significantly contributed to climate change. Today’s food production and consumption have been shifted from their culturally and socially embedded systems towards a system disconnected from local ecological and social systems. In order to meet the needs of present and future generations, it is essential to accelerate a transition towards more sustainable food and agriculture systems that can simultaneously provide economic and social opportunities, while protecting the ecosystems upon which agriculture depends and respecting the cultural and social diversity of territories. Territorial development needs to be reconnected with the people (and families) who carry out the productive activity, with their practices, their values, and with the knowledge traditionally and locally determined.’

Contributions and experiences of IPLCs towards Target 7

IPLCs have been fostering innovation in local production systems to meet the changing needs of their communities, including new forms of livelihoods and income-generating activities.⁽¹¹¹⁾ They are also forming new networks of small-scale producers, embodying the message of *eat locally and eat what's in season*—an important lesson for wider society as it embarks on transitions in food and in production and consumption systems. Investing in community-based social enterprises is another pathway towards Target 7.

“Indigenous people are here to maintain survival as a plausible goal. Subsistence is a moral relationship with nature. In many ways, it is the indigenous cultures’ relationship to the earth that represents the only real hope for the long-term survival of people on any scale in the world. Subsistence means that there’s a forest here today, and we find a way to make a living here. Then tomorrow, there’s still a forest here. That’s subsistence.”⁽¹¹²⁾

— John Mohawk, respected indigenous teacher from North America

Box 13: Brenda Asuncion, Kevin K.J. Chang, Miwa Tamanaha; Kua‘āina Ulu ‘Auamo

Restoring the wall of Waia‘ōpae fishpond, Lānai, Hawaii. Credit: Scott Kanda, courtesy of Kua‘āina Ulu ‘Auamo.



Case study: Loko i‘a; Indigenous aquaculture and mariculture in Hawai‘i, USA

Loko i‘a are advanced, extensive forms of aquaculture unique to Hawai‘i. While techniques of herding or trapping adult fish in shallow tidal areas, in estuaries and along their inland migration can be found around the globe, Hawaiians have developed fishponds that are technologically unique, advancing the cultivation practice of *mahi‘i a* (fish farmer).

Loko'i take advantage of natural coastal ecology and tidal cycles, enhancing nearshore areas to efficiently provide algae to feed and fatten herbivorous fish. Additionally, where high surf, storms and other weather phenomena can influence and interrupt fishing practices, or when ocean fishing may not yield sufficient supply, fishponds provide a regular supply of fish.

The variety of *loko i'a* designs and construction methods demonstrates an unparalleled understanding of engineering, hydrology, ecology, biology and agriculture. *Loko i'a* practice is the result of over a thousand years of generational knowledge, experimentation and adaptation, and reflects a deep indigenous understanding of the environmental, ecological and social processes specific to our islands.

Loko i'a were essential components of traditional food systems in Hawai'i, providing food security and community resilience. Their revitalisation goes hand in hand with the revitalisation of Hawaiian language, arts, architecture and diet.

Today, most *loko i'a* sites are highly degraded. Barriers to restoration include altered watersheds and diversion of water; invasive species; permitting processes that are not well designed to accommodate *loko i'a* restoration; and the loss and scattering of generational knowledge of managing and caring for *loko i'a*. Yet, *loko i'a* remain important components of the *ahupua'a* (traditional land division) and still have the potential to contribute to a healthy and robust food system.

Collaboration and the collective movement of Hui Mālama Loko I'a

Over past decades, Hawaiian communities and *kia'i loko* (fishpond guardians) worked to restore *loko i'a* around the islands and reclaim the knowledge and practice of *loko i'a* culture. Hui Mālama Loko I'a, a network of *loko i'a* and *kia'i loko* from six Hawaiian Islands, was formed in 2004, meeting annually and opportunistically to strengthen working relationships and share experience and expertise.

Most recently, our network of committed and skilled site-based caretakers leveraged its collective influence to streamline the permitting processes in collaboration with the State of Hawai'i, and has generally improved co-management relationships with government and private entities. Sharing and social cohesion are key components of *loko i'a* culture because of the scale of physical labor needed for construction and maintenance. The surrounding community comes to help and, in return, shares in the abundance produced from the pond. Today, *loko i'a* serve as *kīpuka* (oases or receptacles) for the renewal of traditional practices and values in contemporary ways. They are thus celebrated for their past and future potential to contribute to the needs of their *ahupua'a* and our broader community in Hawai'i.

Box 14: Nutdanai Trakansuphakon,^(iv) Pgaz K'Nyau Association for Sustainable Development

Assam tea tree flowers are extremely important for pollinators, and contribute to the unique taste of honey from Hin Lad Nai. Credit: Gleb Raygorodetsky, from his book *The Archipelago of Hope: Wisdom and Resilience from the Edge of Climate Change*.

^{iv} Nutdanai Trakansuphakon is a new-generation activist and social worker, working to add value to local non-timber forest products of Hin Lad Nai and other communities as alternative social enterprises.



Case study: Pgaz K'Nyau community social enterprise as alternative livelihoods for young generations, northern Thailand

The Pgaz K'Nyau (Karen) practise rotational farming as a self-reliant economy for our own food consumption. But, today, we also need cash incomes for our expenses in everyday life. The Pgaz K'Nyau Association for Sustainable Development works with Pgaz K'Nyau communities on community social enterprise because young people are migrating to work in urban areas, leaving a gap between elders and youth. Elders have not had a space to transmit their knowledge to the new generations, so the concept of social enterprise is a great tool to sustain and improve the livelihoods of our indigenous people while preserving cultural identity.

In Hin Lad Nai village, we started to design a community social enterprise with young people; they are the owner of the brand. We started to think about how to use non-timber forest products (for example, wild honey, tea, bamboo shoots) adding Pgaz K'Nyau knowledge and wisdom to run the brand.

We believe that our wisdom and traditional knowledge will ensure our brand remains sustainable. In branding and marketing Hin Lad Nai honey products, we don't promote them as better than other brands, but we tell the community story, including through tastings, of how they have taken care of their forest based on their traditional knowledge. Hin Lad Nai honey has diverse tastes: each bottle of honey does not have the same taste because it comes from a variety of flowers from the biologically diverse Hin Lad Nai ecosystem. The Hin Lad Nai honey brand is spreading wide and creating a big impact on wider Thai society. People in the city not only like these good honey products, but also that they are made by people who coexist very well with nature.

Creating more and more added value to the diverse products is motivating young people to come back to their community, to play an important role in innovation, and to find new occupations. It has created opportunities for younger generations willing to return home, with hope and security for their futures in their home community.



● A man practices rotational farming in a Karen community, Thailand. Credit: Chalit Saphaphak.

Part of the income from the sale of products goes to a community collective fund—e.g. 20 baht for one bottle of honey, 20 cents from 1 kilo of tea leaves. From Hid Lad Nai branded products, 30 per cent of profits goes to the community collective fund. This fund is kept for collective activities, particularly caring for and conserving our environment; for example, creating fire breaks and controlling fire in summer time; and replanting or planting more local trees and plants for biodiversity. It is also used for urgent needs such as helping people with serious health problems to go to hospital, supporting education for young people, and following up government policies.

We are trying to upscale the Hin Lad Nai honey brand model by sharing it with other Pgaz K’Nyau communities. The honey and coffee network has established a new Pgaz K’Nyau brand name linking five Pgaz K’Nyau communities from four provinces. Young leaders from these communities have designed a common plan to promote their new brand, they have established their governance board, and they are strengthening their network for future sustainability goals of their self-reliant economy.

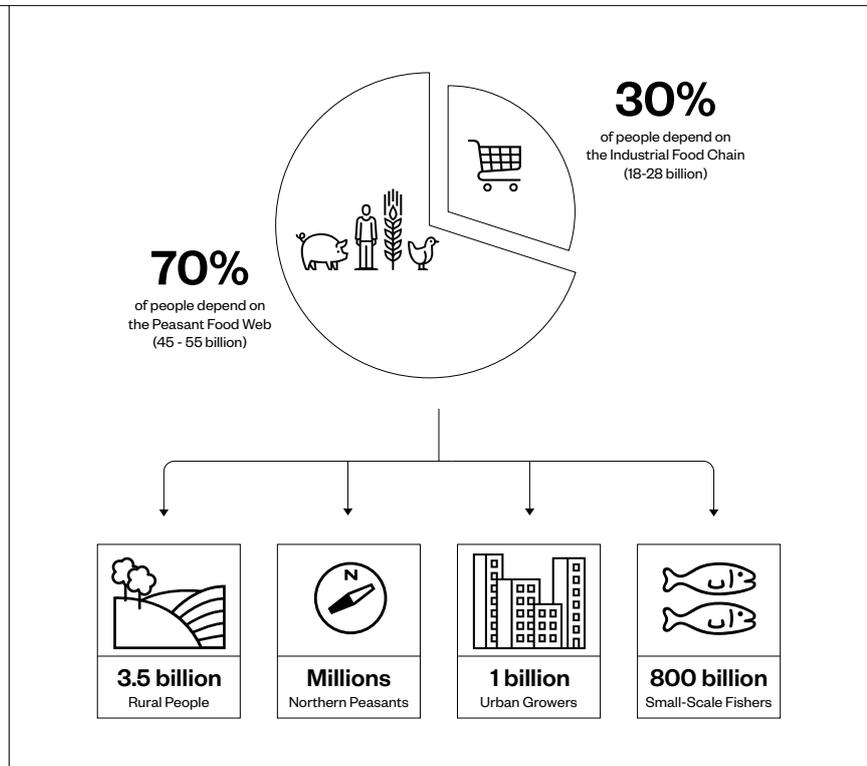
Emerging initiatives

Farmer networks such as La Via Campesina (the Peasant Way) are reclaiming the term *peasant* and building a shared peasant identity across national borders and cultures. Their main concerns are: promoting food sovereignty; agrarian reform; people's control over land, water and territories; popular peasant feminism; participation of youth in agriculture; human rights, including of migrant workers; promoting agroecology and peasant seed systems; and resisting free trade and the power of transnational corporations.

The *peasant food web* (see Figure 2)⁽¹¹³⁾ has been defined as the web of small-scale producers—usually family or women-led, and including farmers, livestock-keepers, pastoralists, hunters, gatherers, fishers, and urban and peri-urban producers—who together feed 70 per cent of the world's people. Rural peoples who look to *famine foods* in the seasons of scarcity before harvest will survive thanks to the peasant food web's protection of agricultural biological diversity.

Figure 2: The peasant food web

Source: ETC Group⁽¹¹⁴⁾





Young Karen women dry tea leaves. Credit: Visarut Sankham.

Multiple initiatives and instruments provide fertile opportunities for including IPLCs as central actors in the transition towards sustainable agricultural and food systems.

UN initiatives include:

- UN Decade of Action on Nutrition 2016–2025
- UN Water Action Decade 2018–2028
- UN Decade of Family Farming 2019–2028
- UN Decade on Ecosystem Restoration 2021–2030.

Policy instruments include:

- *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security;*⁽¹¹⁵⁾
- *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security;*⁽¹¹⁶⁾
- *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication;*⁽¹¹⁷⁾
- UN Declaration on the Rights of Peasants and Other People Working in Rural Areas.⁽¹¹⁸⁾

Securing legal recognition of customary tenure of IPLCs to their lands, territories and resources is critical for progress in sustainable agriculture, aquaculture and forestry, and also for achieving poverty eradication, conserving biodiversity, and climate change mitigation and adaptation.

Opportunities and recommended actions

- IPLCs should ensure the full and effective participation of women and men, elders and youth, and people with disabilities, in their ongoing revitalisation of customary resource management and sustainable use practices.
- Governments must protect IPLC territories and smallholder landscapes from incursions by agro-industrial production systems.
- Governments must develop joined-up national strategies and action plans, under the various UN decades—Family Farming; Action on Nutrition; Water Action; Ecosystem Restoration—while implementing the CBD Plan of Action on Customary Sustainable Use of Biological Diversity, including through strengthening IPLC organisations and networks engaged in ecological restoration and community livelihoods; and providing greater support and investment in smallholder production, traditional occupations and community social enterprises.
- Governments, UN agencies, IPLCs and research organisations should establish partnerships to improve the collection of data (local, national and global statistics) on the contributions of small-scale producers towards their recognition in policy and actions.
- Development funders and donors, in particular the development banks and major foundations, should change their funding approach, reallocating funding towards the agroecological transformation of the food system, including revitalisation of indigenous food systems.
- All actors should promote farmers' rights and support farmers to continue to maintain, develop and manage genetic resources, including IPLC in-situ gene banks for traditional seed production, and recognise and reward them for their indispensable contributions to the global pool of genetic resources.

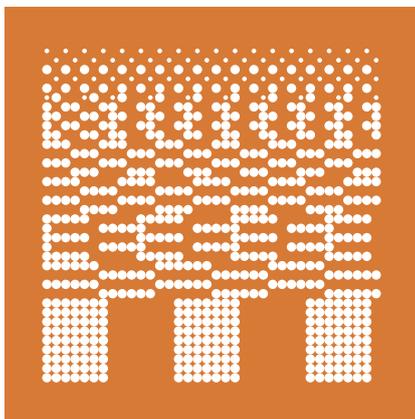
Key resources

- Forest and Farm Facility: <http://www.fao.org/forest-farm-facility/en/>
- ETC Group (2017) *Who will feed us? The Peasant Food Web vs The Industrial Food Chain*, 3rd edition. ETC Group. Available at: <https://www.etcgroup.org/whowillfeedus>
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- The International Partnership for the Satoyama Initiative: <https://satoyama-initiative.org/>
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- International Panel of Experts on Sustainable Food Systems (2016) 'From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems'. Bonn: International Panel of Experts on Sustainable Food systems. Available at: http://www.ipes-food.org/_img/upload/files/UniformityToDiversity_FULLL.pdf



Kahina Pōhaku fishpond in Molokai, Hawaii.
Credit: Scott Kanda, courtesy of Kuaʻāina Ulu
'Auamo



Target 8: Pollution reduced

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

Key messages

- Because of their high dependence on nature, IPLCs are particularly vulnerable to the impacts of pollution and continue to suffer disproportionately from its effects.
- IPLCs have knowledge systems and practices, beliefs and customary laws aligned with protecting nature and preventing pollution; their communities are monitoring and reducing pollution on the ground and limiting chemical use.
- Links with international campaigns and external support for pollution-related complaints and legal challenges have empowered some IPLCs in combating pollution.
- However, the full potential contribution of IPLCs remains largely unrealised, and requires greater governmental support, including through strengthened laws and regulations.

Significance of Target 8 for IPLCs

Pollution is the largest environmental cause of disease and death in the world today and is responsible for an estimated nine million premature deaths each year. IPLCs are highly vulnerable to the impacts of pollution, given their close links to the local environment, their relative poverty, and their history of colonial displacement and discrimination. They also continue to suffer disproportionately from pollution's effects, often lacking the power to prevent external activities from polluting their lands and waterways.⁽¹¹⁹⁾

Documented cases of the effects of pollution on IPLCs include cases related to persistent organic pollutants; to organochlorines such as PCBs; to lead exposure, and to mercury.⁽¹²⁰⁾ There is a growing body of evidence that women's re-



productive health is uniquely affected by exposure to environmental toxins;⁽¹²¹⁾ and research has also shown that Navajo women in the USA exposed to uranium contamination can pass on the exposure to their foetus.⁽¹²²⁾ Indigenous women in Alaska measured comparatively high levels of persistent organic pollutants in their breast milk, at levels that were considered unsafe.⁽¹²³⁾

● Polluted waterways also impact on local biodiversity - such as giant otter, which now only live in Guyana. Credit: Elizaveta Kirina.

The contamination of traditional lands and territories can have major impacts on the social, economic, political and cultural fabric of IPLCs. For example, pollution can lead to a fear of consuming traditional wild foods and foster increased reliance on nutrient-poor and expensive market foods, increasing the risk of malnutrition and chronic diseases. Similarly, fears about environmental contamination can lead to a decline in the use of traditional remedies, as has been documented among the Mohawk of North America,⁽¹²⁴⁾ resulting in worsening health conditions. Therefore, for IPLCs, understandably, pollution levels are of great concern.

Contributions and experiences of IPLCs towards Target 8

IPLCs are making significant contributions to reducing environmental pollution through actions on the ground and through participation in local, national and international policy processes. In terms of actions on the ground, community-based monitoring systems have emerged as a valid and cost-effective component in pollution control. For example:

- Since 2016, indigenous reindeer herders and fishermen in the Arctic region of North Yakutia, Russia, have been monitoring river pollution, particularly for coal dust and other industrial and biological contaminants. In October 2018, high levels of pollution were recorded in the River Viluy. Since then, local indigenous communities have established their own analytical laboratory, and this has empowered them in dialogues with the Zhigansky district administration and relevant mining companies.
- In Guyana, the Wapichan have undertaken a monitoring project to limit the damage done by miners (see Box 15), and this has led them to securing government support for protecting their lands and environment against further pollution. This approach is also being applied by other indigenous peoples, including the Achuar in the Peruvian Amazon (in relation to pollution from oil extraction)⁽¹²⁵⁾ and the Akwesasne Mohawks in Canada and the USA (in relation to the health consequences of environmental contamination).⁽¹²⁶⁾

Box 15

There is evidence of illegal gold mining at this creek near Parabara Village, where monitors test water quality. The surrounding forest has been cut down in the past five years and the water is no longer safe to drink. Credit: Vicki Brown.



Case study: Wapichan Monitoring Programme, Guyana⁽¹²⁷⁾

The South Rupununi District Council (SRDC), the representative institution of the mostly Wapichan indigenous people in Guyana, established a monitoring programme in 2013 focusing partly on mining activities. The SRDC monitors use handheld GPS sets, smartphones and drones to gather data, and report back to the village councils and the SRDC.

One focus of the monitoring programme has been unlawful mining on the Marudi Mountain, which is sacred to the Wapichan and is also a major watershed. Many creeks are polluted, which directly impacts the fragile ecosystems and local communities. For example, sampling by the Wapichan, with support from WWF, has revealed that local women in one village have mercury contamination levels above the recommended WHO safety limits.

Reports produced by the monitoring programme and advocacy by the SRDC have moved the Guyanese Government to introduce stronger enforcement of mining regulations in Marudi so that there is less illegal mining in the area, and the Cabinet has ruled that there will be no

mining in waterways below the 4th parallel. The efforts of the SRDC and its monitoring programme have led to the creation of a government task force to work with the SRDC to collectively address the issues affecting Wapichan territory. The model is now being introduced in other regions where there are environmental problems.

Like the Wapichan, many other communities are opposing pollution on their lands from mining and hydrocarbon extraction:

- In Australia, the local Mirrar people in the Kakadu area compelled mining company Rio Tinto to shelve plans for the Jabiluka uranium mine, primarily because of pollution concerns.⁽¹²⁸⁾ At nearby Koongarra, traditional owner and sole surviving member of the indigenous Djok clan rejected compelling offers from uranium miner Areva for his ancestral land, instead pledging it to the Australian Government to become part of the World Heritage-listed Kakadu National Park.⁽¹²⁹⁾
- In Colombia, the indigenous peoples of the Resguardo Canamomo Lomapieta mounted and won a court case for the delimitation and titling of their lands, based on their concerns about pollution from gold mining. All further mining permits or formalisation of mining activities were to be suspended during this time. ^(v, 130)
- In Ecuador, the Waorani people won a landmark legal case against the Ecuadorean Government, suspending any possibility of selling the community's land for oil exploration without a free, prior and informed consultation process.⁽¹³¹⁾
- In Papua New Guinea, concerns about the potential environmental damage caused by a proposed deep-sea mining project led by Canadian mining company Nautilus Minerals has united coastal communities to form the Alliance of Solwara Warriors. Together they have mobilised local opposition, providing education on the potential impacts, and participated in court cases which have, so far, left the mining company unable to proceed.⁽¹³²⁾

v. See Target 15 for details of further developments in the Resguardo Canamomo Lomapieta.

Several pollution-related cases raised by IPLCs have been moved to the home jurisdiction of the companies responsible for the pollution, or have become cases submitted to international complaints mechanisms. Examples include longstanding legal battles against Chevron (formerly Texaco) for the environmental impacts of its operations in the Oriente region of Ecuador, which have included variously a class action lawsuit in the US federal court, international arbitration, and even proceedings in Canada.⁽¹³³⁾

IPLCs have also made complaints focusing on pollution under the *OECD Guidelines for Multinational Enterprises*. For example, communities in Cameroon have alleged that UK company Victoria Oil and Gas polluted their waterways,⁽¹³⁴⁾ and a case has been brought against Credit Suisse in Switzerland on behalf of indigenous communities for failing to carry out risk-based and human rights due diligence in connection to the North Dakota Access Pipeline in the USA.⁽¹³⁵⁾



At the international level, IPLCs have contributed to the Convention on Biological Diversity, the Stockholm Convention on Persistent Organic Pollutants, and the Minamata Convention on Mercury.⁽¹³⁶⁾ In addition, the Initiative for Responsible Mining Assurance has IPLC representation on its steering committee,⁽¹³⁷⁾ and the Aluminium Stewardship Initiative has an Indigenous Peoples' Advisory Forum.⁽¹³⁸⁾

In other cases, communities are working directly to clean up pollution, reduce their own chemical impacts, and develop or contribute to local or regional plans for pollution control and waste management:

- In Antigua and Barbuda, the Adopt a Coastline project has become a national movement involving local community actions to clean up beach pollution (see Box 16).
- In Panama, the Guna people have developed ways of monitoring and managing waste to reduce pollution from plastics and other forms of waste (see Box 17).
- Many indigenous groups have participated in Canada's Arctic Environmental Strategy to include a Northern Contaminants Program; others have minimised pollution via extractive industry 'impact benefit agreements', or have participated in pollution assessments.⁽¹³⁹⁾
- More broadly, many indigenous communities maintain traditional agricultural practices, which make minimal use of agrochemicals and rely on natural pest control.⁽¹⁴⁰⁾

Case study: Communities tackle beach pollution in Antigua and Barbuda

The Adopt a Coastline initiative is changing the attitudes and behaviour of local children through fostering and mentoring youth stewards to conserve and protect the marine and coastal assets in Antigua and Barbuda. The Youth Stewardship programme is restoring and preserving Antigua's coastlines through a grassroots campaign that includes beach clean-ups, community action and education, public awareness-raising via social media, and citizen science. The programme has become a nationally significant movement and has widened public understanding of the fragility of the island's marine and coastal habitats and the impacts of pollution (especially from plastics).

Several beach clean-ups were organised in areas where birds, fish and turtles nest and feed, to introduce people to these pristine places where wildlife is struggling to survive. As a result, known turtle nesting sites are now kept clean, and articles collected are made into usable items such as artefacts and crafts for sale. For example, old tyres dumped on Falmouth Beach have been made into bins, and signs to ensure the beach is kept clean has been constructed from recycled wood.

Additional benefits achieved include:

- Increased commitment to the protection of natural resources;
- Engaged and educated communities, especially young people;
- Long-term sustainability, with local community ownership and buy-in at all levels.

Private individuals and businesses are now donating money, time and resources to beach cleaning and maintenance programs. The Antigua Barbuda Marine Association has introduced a Zero Waste Cup initiative to the Antigua and Barbuda Sailing Week, which has resulted in the diversion of 38,375 plastic cups from landfill.

The vision of the project is to reach more communities and sites, to train more youth stewards, and to create a viable means of support for their activities through further product development, social media output, and sponsorship from businesses and property owners.

Box 16: Jennifer Moranto,
Adopt a Coastline

Box 17: Jorge Andreve and Onel Masardule, Foundation for the Promotion of Indigenous Knowledge, Guna Indigenous Peoples

A Guna Yala man explains how waste is negatively impacting water quality. Credit: Eddie Gerald.



Case study: Reducing and reusing waste in the Guna Yala region, Panama

In recent decades, waste, especially plastic waste, has been accumulating in every corner of Panama's Guna Yala region. Waste pollution has been recognised as one of the greatest threats to the biological diversity of the Caribbean.

The Guna people accept our responsibilities for the generation of waste and have given ourselves the task of finding simple, rapid, low-cost measures to deal with it. The highest Guna political-administrative authority, the Guna General Congress, has committed to numerous actions on this issue. The most important is the Zero Waste: recycling routes in Guna Yala project, which aims to create a centre for the collection and sale of recyclable material and a landfill site for the disposal of non-recyclable waste. Novel solutions need to be found, given the absence of appropriate sites for landfill in the region, and more broadly the lack of industrial development.

The Foundation for the Promotion of Indigenous Knowledge has also been studying the situation, and potential solutions, in various parts of the region. Some of the findings are as follows:

- The waste recorded consisted of 70 per cent organic material, 20 per cent plastics, seven per cent paper and cardboard, and three per cent glass.
- Much of the organic waste is currently dumped on land or at sea, where it causes changes in the ecology of the coasts, including eutrophication and an increase in algae. However, this waste offers an opportunity to produce compost for fertiliser.
- Plastic waste is the most serious pollution problem, mainly due to its long persistence in the environment. The study recommends placing low density plastic crushing plants in the communities, and, if possible, machines for converting it to plastic fibres. This could reduce the remaining plastic waste by half, which would benefit the marine environment and decrease the spread of infectious diseases in coastal systems.

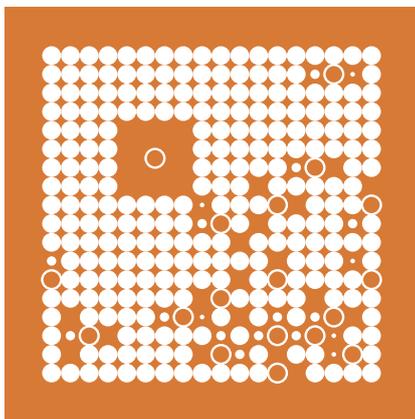
Public awareness is an important part of the solution. It is also important to change the current linear approach to the economy—based on acquisition, consumption and abandonment—towards a more circular approach incorporating re-use and recycling. However, because the Guna Yala coast is subject to macro- and micro-currents from the Caribbean, waste originating in other countries is constantly washed up, and waste management plans must take this into account. Only then will we really reduce the impacts of waste on the natural environment and people of Guna Yala.

Opportunities and recommended actions

- IPLCs should mobilise collective actions to tackle pollution, including through community-based monitoring systems based on cultural, health and ecosystem-based indicators, in conjunction with relevant national and global monitoring and reporting systems.
- Governments and relevant institutions should establish mechanisms that enable IPLCs to fully and effectively participate in policy and decision-making processes, upholding their knowledge and experiences. This includes SDGs 6 and 12, the Minamata Convention on Mercury, the Stockholm Convention on Persistent Organic Pollutants, and the UN Environment Programme’s Strategic Approach to International Chemicals Management.
- Governments should strengthen local and national institutions to ensure polluting industries are accountable and to accelerate the development of clean energy sources and clean technologies that will ultimately prevent pollution at source.
- All actors should foster cultural values and behaviour upholding minimal waste and pollution.

Key resources

- Fernández-Llamazares, Á., Garteizgogea, M., Basu, N., Brondizio, E.S., Cabeza, M., Martínez-Alier, J., McElwee, P. and Reyes-García, V. (2020) ‘A state-of-the-art review of indigenous peoples and environmental pollution’, *Integrated Environmental Assessment and Management*. Available at: <https://doi.org/10.1002/ieam.4239>
- Gracey, M. and King, M. (2009) ‘Indigenous health Part 1: Determinants and disease patterns’, *The Lancet* 374(9683), pp. 65-75.
- Jiménez, A., Cortobius, M. and Kjellén, M. (2014) ‘Water, sanitation and hygiene and indigenous peoples: A review of the literature’, *Water International* 39(3), pp.277-293.



Target 9: 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 messages

- IPLCs are taking proactive actions and initiatives to address the ever-growing serious threats and risks posed by invasive alien species to their cultural, economic, environmental, food and water systems.
- Effective partnerships between indigenous peoples and local communities (IPLCs) and other actors already exist at national levels, built on traditional knowledge and the actions of IPLCs to control, or use, invasive alien species; these partnerships have great potential for expansion.
- At the global level, IPLCs are actively promoting a holistic approach to reducing invasive alien species—identifying, assessing, monitoring, controlling and eradicating.

Significance of Target 9 for IPLCs

IPLCs can have differing approaches towards invasive alien species. IPLCs work to establish relations with all the species that make a home in their lands, waters and territories, and develop rules for interacting with, or protecting against, each species.⁽¹⁴¹⁾ However, many species classified by scientists as invasive alien species are also of urgent concern to IPLCs because of their severe impacts. These impacts are a major threat to the livelihoods of IPLCs because through their disruption of ecosystems they damage many of the resources that IPLCs need to sustain a good quality of life. These include resources that are critical for food, shelter, health, security, social and cultural activities, and economic opportunities.⁽¹⁴²⁾

The global cost of managing invasive alien species is estimated at US\$1.4 trillion per year—close to five per cent of global gross domestic product.⁽¹⁴³⁾ IPLCs, because of their direct dependence on local natural resources for their livelihoods, carry distinct burdens in terms of the negative impacts of invasive alien species. For example:

- Across Africa, invasive species threaten agricultural systems and crop productivity. For example, the fall armyworm can cause maize yield losses of up to 17.7 million tonnes a year, equivalent to US\$4.6 billion,⁽¹⁴⁴⁾ which is likely to affect IPLCs severely.
- Invasive species can also affect IPLC cultures. For example, over the last 10 years the emerald ash borer has infected ash trees on the lands and territories of the Mohawk people of Kahnawake in Canada. This has affected traditional basket-making and raised concern about the potential loss of knowledge about the trees, as their population declines.⁽¹⁴⁵⁾

Contributions and experiences of IPLCs towards Target 9

IPLCs have first-hand knowledge of the impacts of invasive alien species on the biodiversity in their lands, as well as on their communities and their cultures. Many IPLCs are, therefore, working to learn more about these species and combat their effects.⁽¹⁴⁶⁾ Because of their presence on the ground, IPLCs are often the first to detect the early warning signs, and are also well placed to monitor, manage and control them. In some countries they have begun to conduct risk assessments of invasive alien species, and to assess possible uses of newly arrived species. Examples of IPLC actions on the ground and involvement in relevant policy forums are highlighted below.

Community-based monitoring of invasive alien species

There are many examples where IPLCs play an important role in identifying and monitoring invasive alien species. For example:

- In Siberia and the Arctic, IPLCs have documented an increase in the appearance of ticks infected with tick-borne encephalitis virus and tick-borne borreliosis (Lyme disease).⁽¹⁴⁷⁾ The spread of this ticks to the Arctic is associated with temperature increases in the northern territories.⁽¹⁴⁸⁾
- The Guna people in Panama have developed a participatory map of lionfish sightings in their coastal marine waters. Lionfish is an invasive alien species that is extremely damaging to native fish species; it is also poisonous, posing a health risk to the Guna.⁽¹⁴⁹⁾
- The Māori in Aotearoa/New Zealand have collaborated in the development of a culturally based methodological framework for monitoring kauri die-back, which is caused by a deadly fungus-like exotic species.⁽¹⁵⁰⁾

Box 18: Polina Shulbaeva,
Centre for Support of
Indigenous Peoples of the
North

Silk moth caterpillars cause significant damage to conifers. Credit: Pavel Komogorov.



Case study: Indigenous monitoring of silk moths in the Arctic and Siberia⁽¹⁵¹⁾

Indigenous monitoring has made it possible to document an increase in the distribution of alien species across the Arctic and Siberia. One such species is the silk moth—one of the most dangerous insect pests—which is currently moving northwards. Silkworms are difficult to find and indigenous people are playing a critical role by alerting officials to new sightings.

Caterpillars of the silk moth destroy coniferous forests, and hundreds of thousands of hectares of Russian forests have already been destroyed over a short period.⁽¹⁵²⁾ In affected areas, there are no more birds and no food left for animals (including reindeer). The infected trees have to be cut down, and the profits from this go to the timber companies, many of which are Chinese. Traditional community lifestyles, land use and spiritual practices are impacted because the communities can no longer use these areas.

All of Siberia is facing an unprecedented invasion of silk moths and millions of hectares of valuable coniferous plantations and forests have already been destroyed. Silkworms have now been documented as far north as Yakutia (latitude 62°N), where the temperature ranges from +38°C to -64°C. Scientists have confirmed the findings of indigenous peoples that the spread of silk moths is due to the increasing occurrence of hot, dry weather, which is favourable to silk moth reproduction and which has also resulted in fires over huge areas of the Siberian taiga. The main driver of silk moth invasion is climate change and the lack of transboundary control (for example, in relation to the timber trade).

IPLC adaptations: finding new uses for invasive alien species

In some cases, IPLCs find uses for invasive alien species and adapt their livelihoods and cultural practices accordingly. Examples include the water hyacinth in Benin (see Box 19); the Kamchatka king crab on the Arctic coast of Russia and Norway,⁽¹⁵³⁾ which has become part of the local diet; cattails in North America, which are used both for food and for heating, replacing wood;⁽¹⁵⁴⁾ and feral domestic cats in Australia, which are managed by Aboriginal communities for food and economic gain.⁽¹⁵⁵⁾ Harvesting invasive alien species for use can be an integrated part of control mechanisms, thereby helping to protect native species from the impacts of invasive alien species.⁽¹⁵⁶⁾



Box 19: Patrice Sagbo, Actions pour le Développement Durable, Benin

Clearing water hyacinth from the lake. Credit: © Sébastien Roux/Reporterre.

Case study: Finding alternative uses for invasive species; the water hyacinth in Benin

Native to South America, the water hyacinth (*Eichhornia crassipes*) has caused problems for local lake communities and the environment across East Africa. In Benin, it makes travel by canoe difficult, and affects the livelihoods of local fishing communities.

In recent years, local communities—especially women—have managed this invasive species by harvesting it for use as compost and crafts material. Longer leaves are washed and dried, before being woven into bags, rugs, hats and other objects which are then sold. The remainder of the plant is then combined with manure and sand and left to develop into a rich compost, which is eventually used to support agriculture, or sold.

Travelling by canoe - an important way for local communities to get around - is impeded by the rapid growth of water hyacinth. Credit: Beata Tabak.



Collaborating with governments and scientists to manage and control invasive alien species

Many IPLCs actively manage and control invasive alien species on their lands, either alone or in collaboration with scientists:

- IPLCs in different parts of the world use traditional controlled burning, which destroys invasive weed species, including seeds, and allows local fire-adapted species to regenerate and recover.
- In Queensland, Australia, indigenous rangers have been working with NGOs and government since 2014 to detect, monitor and control pond apple infestations in the Eastern Kuku Yalanji Indigenous Protected Area.⁽¹⁵⁷⁾
- In Canada, invasive alien species are co-operatively managed by the Council of the Haida Nation and the Government of Canada over their land and sea; they have successfully eradicated the North American rat.⁽¹⁵⁸⁾
- IPLCs are working with the Secretariat of the Pacific Regional Environment Programme to prevent, control and manage invasive alien species across the Pacific Islands, with support from the Global Environment Facility. Invasive alien species are the most important cause of extinction of endemic species in the region, and their management is a necessary cost of trade and transport between islands. A Pacific-wide strategy has been developed that includes resources to support learning, reporting, and education, as well as the management of invasive alien species across the islands.⁽¹⁵⁹⁾

Collaborative approaches to management and control are particularly beneficial in that they can result in a more holistic approach to monitoring and management, and in the development of innovative approaches. They can also lead to improved mutual understanding and capacity-building.

In some cases, IPLCs have also taken measures to remove alien species that they had been encouraged to introduce, but which they later realised had harmed the environment. Box 20 details one such case from the Philippines.



Box 20: Venecio Lingbawan,
Indigenous Farmers'
Association of Guinaang,
Pasil and Florence Daguitan,
Tebtebba Foundation

A gmelina tree. Credit: pisitpong2017.

Case study: Controlling the invasive gmelina tree and bringing back biodiversity in Kalinga, Philippines

In the 1990s, the gmelina tree (*Gmelina arborea*) was promoted by the government (Department of Environment and Natural Resources) in our territory in Guinaang Pasil, Kalinga. It is fast-growing, they said, and can be harvested for timber after 10 years. We planted them in the *u'uma* (rotational agricultural areas) and in the *boboloy* (residential areas) in the *ba-ang* (agro-forestry zone), which is mainly planted with trees—fruit-bearing trees including orange, jackfruit, avocado and pomelo; some are dominated by coffee trees; or bananas, forest tree species such as *narra*, *obol* and *towol* for building houses, and bamboos (*bulo* and *kawayan*). Planting these perennial crops earns the family the right of ownership over the *ba-ang* and they are bequeathed to their next generation. But, while privatised, they can still be used as pasture lands, because grass also grows abundantly in most of the *ba-ang*.

With the readily available seedlings and promise of cash, we planted more gmelina but we observed that almost nothing was growing underneath them. As the gmelina grow their crown, we observed decreased yields in our crops, such as coffee and beans. We waited for the trees to be big enough for timber, then we cut them, removed the roots and replaced them with trees that we have found in our land since time immemorial. By 2015, the diverse trees were restored. We also realised that, during the years that gmelina were abundant, some birds had left our territories. When the native trees were restored, we observed the return of the birds.



IPLC involvement in policy forums

IPLCs participate in global policy processes related to invasive alien species and are also active in national policy and implementation measures in several countries:

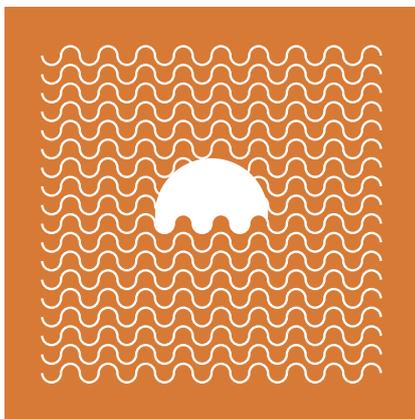
- In some countries, IPLCs are participating in the development of national inventories and monitoring systems for invasive alien species. For example, in Norway the Saami have been working alongside the government and NGOs to obtain country data on invasive alien species. The Norwegian Biodiversity Information Centre incorporates the traditional knowledge of the Saami people.
- In December 2019, IPLCs participated fully in a meeting of the UN CBD Ad Hoc Technical Expert Group on invasive alien species, which advanced work on advice and technical guidance for managing invasive alien species.
- The full and effective participation of IPLCs is expected in the invasive alien species assessment by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which will run between 2019 and 2023. The assessment will incorporate information on IPLC responses to invasive alien species and on their adaptation and management strategies.
- The IPBES has established a task force on indigenous and local knowledge; it is also recognising IPLCs who are able to contribute as authors, reviewers or participants in workshops and review processes, and who can be included as resources and sources of information. The benefits for IPLCs must be fair, equitable and realised in order to recognise and acknowledge their input. Free, prior and informed consent is also applied and central to the IPBES's work with IPLCs.
- Despite the above, there is little recognition of the role of IPLCs within the framework of the Global Register of Introduced and Invasive Species,⁽¹⁶⁰⁾ which compiles information from more than 190 countries.

Opportunities and recommended actions

- IPLCs should continue actions and initiate programmes to manage invasive alien species within their territories, as part of local biodiversity strategies and action plans, applying traditional knowledge and community-based monitoring.
- IPLCs and their partners should build awareness of community-based monitoring and information systems (CBMIS) among governments and natural resource management professionals.
- Governments and relevant actors should increase financial, technical and other forms of support to upscale CBMIS of invasive alien species and for programmes to mitigate the impact of invasive species on IPLCs.
- Governments and relevant national and international agencies, in partnership with IPLCs, should develop and strengthen multiple evidence-based monitoring and response systems for invasive species, incorporating the traditional knowledge of indigenous peoples and including mechanisms for instant response where appropriate.
- Natural resource institutions, government departments, universities, research centres and NGOs should develop two-way transferrable skills programmes to foster capacity-building and mutual learning between IPLCs and scientists.

Key resources

- Reo, N. J., Whyte, K., Ranco, D., Brandt, J., Blackmer, E., Elliott, B. (2017) 'Invasive species, indigenous stewards, and vulnerability discourse', *The American Indian Quarterly* 41(3).
- Ens, E., Fisher, J. and Costello, O. (Editors) (2015) *Indigenous people and invasive species: Perceptions, management, challenges and uses*. IUCN Commission on Ecosystem Management Community Report. Available at: https://ipm.ifas.ufl.edu/pdfs/ens_et_al_2015_indigenous_people_and_invasive_species_iucn_cem_ecosystems_and_invasiv.pdf
- Centre for Agriculture and Bioscience International. 'Impacts: Discover the economic, social and environmental impacts of invasive species'. Available at: <https://www.invasive-species.org/impacts/>



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 messages

- IPLCs contribute minimally to anthropogenic pressures but many of them live in climate-vulnerable ecosystems and are disproportionately impacted by cumulative pressures on those ecosystems.
- They mitigate and adapt to climate change through raising early warnings; applying traditional knowledge, innovations, practices and technologies to adjust their activities; maintaining and strengthening sustainable management; establishing indigenous and community conserved areas (ICCAs) or *territories of life*; and collaborating with partners to monitor and remove pressures.
- To make progress, a significant increase is needed in support for IPLC strategies and institutions engaged in protecting vulnerable ecosystems from threats and pressures, and in strengthening community conservation, sustainable management, and adaptation to climate change.

Significance of Target 10 for IPLCs

- IPLCs live in most of the ecosystems identified by the CBD as being most vulnerable to climate change, and in those identified in the International Union for Conservation of Nature (IUCN) Red List of Ecosystems.⁽¹⁶¹⁾ Although they contribute minimally to climate change, they are often highly vulnerable to its impacts.⁽¹⁶²⁾ Multiple threats, including overfishing, nutrient pollution and unsustainable coastal development, continue to affect coral reefs,⁽¹⁶³⁾ and the continued reliance on fossil fuels and extractive industries significantly impacts other vulnerable ecosystems, including mountain and low-lying areas. Polar regions are especially badly affected, with reported impacts on marine mammals, birds and the Arctic marine environment.

- The 2015 target date has already been missed, and Target 10 will not be achieved by 2020.⁽¹⁶⁴⁾ Slow and insufficient progress on this target is severely affecting the ways of life and livelihoods of IPLCs, as described in Box 21.



Box 21: Inuit Circumpolar Council, Alaska

Drying salmon in Alaska, an activity impacted by changing weather conditions that are now not aligning with traditional harvesting times. Credit: Karen Kasmauski.

Case study: Climate change and food sovereignty in the Arctic⁽¹⁶⁵⁾

The Inuit Circumpolar Council office in Alaska has facilitated a project that explores what impedes or supports Inuit food sovereignty and self-governance. In 2019, as part of this work, 24 Inuit indigenous knowledge holders gathered for a workshop exploring food sovereignty and self-governance in the Arctic. Throughout the discussion, participants underlined how the increasingly unpredictable weather patterns are affecting hunting and harvesting, and the challenges arising from regulations that are not adapting to the changes that are occurring.

Weather conditions are not aligning with traditional harvesting times. For example, it is important to harvest salmon when the weather is conducive to drying the meat and before flies arrive. The recent increase in precipitation during a time once known to be dry is requiring people to adapt to the time of harvesting. In other cases, people chose not to harvest because it was not possible to process the catch without waste. For example, in one community a decision was made not to harvest beluga because the animal could not be processed fast enough in the high temperatures.

Participants also shared their experiences of decreasing accessibility of food sources due to climate change: in one year, four Alaska communities declared harvest disasters because they were unable to access walrus due to sea ice conditions. For other community representatives, access to food has decreased due to erosion (unable to access or loss of hunting camps; loss of ground; and relocation), late ice freeze-up, early ice break-up, change in movement of ice, and unsafe weather conditions.

Participants noted that even with the change it is important to understand that animals have cycles (considering abundance, movement, etc.). As one participant shared, “Some years, we had pretty good season. And some years, look like everything is gone.” Other participants noted the importance of understanding and using our knowledge and rules. For example, when animals offer themselves and they are not taken, their numbers will decrease. Or when animals are disrespected, they will not offer themselves.

Throughout the meeting, participants stressed the need for involvement of indigenous knowledge and stronger co-management structures to have a holistic and adaptive response to the changes that are occurring.

Contributions and experiences of IPLCs towards Target 10

IPLCs contribute to Target 10 through actions on the ground and through engagement in international processes, particularly in the *United Nations Framework Convention on Climate Change (UNFCCC)*. At the local level, IPLCs act alone or in collaboration with others, including on: sustainable management and community conservation, including establishment of ICCAs/*territories of life* (see Box 22); raising early warnings and detecting climate change (see Box 23); collaborating with partners to monitor the status and trends of vulnerable ecosystems, and address threats and pressures (see Box 24).

Indigenous activists holding a 'Red Line' on the Pont des Arts during the COP 21 UN Climate Conference in Paris, France. IPLCs are participating actively in policy forums and global climate change initiatives. Credit: Jenny Matthews.





Box 22: Bakoliarimisa Tsiorisoa Mihanta, TAFO MIHAAVO, Madagascar

Two endangered species of sea turtle live in the waters around Sakatia Island, Madagascar. Credit: Jax137.

Case study: Sakatia Island (ICCA), Madagascar

Among the 14 emblematic ICCAs in Madagascar, Sakatia Island's Fokonolona (local community) territory of life covers 1,230 hectares and includes the Ambohibe forest reserve (12.4 ha), the Andranomatavy mangroves (10.5 ha), sandy beaches (7.2 ha) and a traditional fishing zone of 110 ha where two protected species of sea turtles live (*Chelonia mydas* and *Eretmochelys imbricata* are respectively endangered and critically endangered species, according to the IUCN Red List).

The first inhabitants arrived on Sakatia Island in 1883 and it is now home to 1,452 people, including eight ethnic groups (Sakalava Antakarana, Sakalava Boina, Antandroy, Mahafaly, Antanosy, Antemoro, Betsileo and Merina), and a small group of Europeans. The main sources of livelihoods are tourism, handicrafts, farming and fishing.

The island's marine and coastal ecosystem is sustainably managed, conserved and governed by means of traditional rules called *Dina*, which have been developed over time and are overseen by customary institutions. The latter involve a traditional leader, a customary leader and a king of the island, and these are recognised and supported by the municipal and national governments. A community-based organisation was set up in 1995, and in 1998 it was given legal responsibility for natural resource management. The management transfer contract, which was signed by the communal municipality, the community-based organisation, the Ministry of Environment and Sustainable Development, and the Ministry of Fisheries Resources and Fishing, is based on *Dina* rules.

Local culture plays a major role in strict forest conservation at Ambohibe, which is a sacred forest (*ala fady*). Likewise, the mangroves in Andranomatavy are protected from unsustainable exploitation. Customary rights to collect medicinal plants in the forests and mangroves are granted by traditional community and legal institutions.

In July 2018, seagrass was planted and marker buoys were put in place to delimit turtle zones and prevent the decline of the two sea turtle species. The community is also working to control invasive bamboos, and to address the threat posed by a proposed new hostel, which is planned in a turtle spawning area that is part of a sacred site.

Sakatia Island is part of the TAFO MIHAAVO network, a national network of local communities managing natural resources. The network is expanding and seeking to collaborate in the establishment of national enabling policies, legal instruments and mechanisms. During 2019, TAFO MIHAAVO and MIHARI (Madagascar Locally Managed Marine Area Network) teamed up to secure indigenous and community areas nationally, through the full recognition of community rights to land and community-managed marine areas. There is currently a government initiative to develop a legislative framework on special status areas, including on areas subject to community land rights, and this offers an important opportunity.

A clear message coming out of the collaboration in Madagascar is the need to recognise all forms of community-based natural resource management, including the underpinning structures, rules and customary practices which have enabled local communities to manage the resources on their lands sustainably for generations. This recognition must consider, at least, two inseparable aspects: first, the need for recognition of ICCAs as well defined physical territories, over which legal status must be secure; and second, the maintenance and recognition of customary natural resource governance systems.

When the Choroka makes its nest longer than usual, it is a sign that the onset of winter will delay farmers in their planting systems. Credit: PJR Photography.



Early warning and detection of changes in climate

With intimate knowledge of their lands and territories based on daily contact and deep indigenous and traditional knowledge, IPLCs notice detailed changes to ecosystems, often before they are recognised by scientists. This understanding provides an early-warning system for a wide range of environmental impacts⁽¹⁶⁶⁾ and can aid IPLCs in adapting to the changing climate, as described in Box 23.



Box 23: Ramiro Batzín, Indigenous Peoples Maya Kaqchikel, Sotz'il

Kaqchikel farmer tending to his crops. Credit: Latitude Stock.

Case study: Maya early-warning systems in Guatemala

Indigenous peoples have traditional and ancestral knowledge that has helped them study the behaviour of climate, precipitation and possible droughts. This in turn helps them make decisions and take actions necessary for climate adaptation and mitigation to avoid the negative effects of floods, droughts and crop diseases, which could put food security at risk.

In Guatemala, signals can be read by indigenous elders; for example:

- Exposed roots of corn during the winter months: Like all living beings, plants perceive vibrations from the universe and transmit them to other beings in different ways. In corn, if roots are borne higher than normal on the stem, they announce that in the following winter months there will be very strong winds (hurricanes and/or storms).
- The nest of the *chorcha*: A yellow bird with black wings, the *chorcha* (*Oriolus oriolus*) creates its nest in the form of a bag. When it makes its nest longer than normal, it is a sign that the onset of winter will delay farmers in their planting systems.

Collaborative partnerships

Collaborative partnerships between IPLCs and researchers hold much promise for addressing anthropogenic pressures on climate-sensitive ecosystems, because many of the problems occur at a large scale, requiring considerable resources to find solutions, and requiring co-operation across boundaries and jurisdictions.

There are, however, challenges in working across worldviews, concepts, values, goals, and political and social status. Care must be taken to remove power asymmetries, privileged positions and forced outcomes in what are often political negotiations.⁽¹⁶⁷⁾ Despite these challenges, the number of cases of successful collaboration is growing, including, for example, between the Coast Salish peoples and Parks Canada. Indigenous Coast Salish peoples in the Pacific Northwest have built clam gardens for over 11,000 years.⁽¹⁶⁸⁾ The gardens support biodiversity, provide an important source of food, reduce climate stressors from sea-level rise and wave energy, and can filter excess nutrients from marine waters.⁽¹⁶⁹⁾ WSANEC and Hul'q'umi'num First Nations have formed a joint venture with Parks Canada to protect traditional knowledge about the gardens' construction and maintenance, and to help youth reconnect to their culture.

Box 24: Laura Pearson, Alex Carter, Michael Rasheed, Jane Mellors

Rangers monitoring the health of seagrasses.
Credit: TropWater.



Case study: Monitoring seagrass in the Torres Strait, Australia

“We are one society, sharing resources across the region. When you see the water change, you know the people responsible for that area change too.”

— Sereako Stephen, Traditional Owner, Ugar

Indigenous peoples of the Torres Strait practise traditional land and sea management in accordance with *Ailan Kastom* (island custom), Aboriginal lore/law, and native title rights and interests. Because of this continuing stewardship, the Torres Strait remains one of the richest and most intact ecological and cultural regions on Earth.

Torres Strait Island communities rely on coastal marine habitats for subsistence and have strong cultural and spiritual links to these environments. Some of Australia's most extensive seagrass meadows grow in Torres Strait waters. These seagrasses—which are, unfortunately, affected by climate change—support the largest dugong population in the world and globally significant populations of green turtles, and provide valuable habitat and nurturing grounds for fish, prawns, *bêche de mer* (sea cucumber) and tropical rock lobster.

Seagrasses show measurable responses to environmental conditions, so are ideal indicators to monitor marine environmental health. In recent years, members of the Torres Strait Indigenous Ranger Program have been working with research providers to combine indigenous knowledge with western science to enhance the understanding of the Torres Strait environment.

The rangers and researchers produce a report card, which is an annual assessment of the condition of Torres Strait seagrasses. The report card incorporates the most up-to-date and best available data on the most important indicators of seagrass health—abundance, spatial extent, and species composition—into a series of grades and scores that enable comparisons among sites, meadows and island groups.

The partnership has resulted in a robust scientific assessment of seagrasses as well as local ownership and acceptance of the program. The program results have also become a key element of community-based dugong and turtle management plans.

IPLC engagement in policy forums

In addition to their work on the ground, IPLCs are participating actively in relevant international policy forums and global climate change initiatives. Positive developments over the past 10 years include the creation in 2015 of the Local Communities and Indigenous Peoples Platform in the *UNFCCC* to improve the participation of IPLCs in climate-related policy⁽¹⁷⁰⁾ and the adoption by the board of the Green Climate Fund of its Indigenous Policy in 2018, which should ensure that the rights of indigenous peoples are recognised, respected and promoted in climate-related funding.⁽¹⁷¹⁾ IPLCs also made a series of commitments at the Climate Action Summit in New York in September 2019, including commitments to lead the implementation of holistic plans to protect biocultural diversity, ensuring the inclusion of the people most marginalised; to develop actions to secure the rights of IPLCs to lands, territories and resources; and to promote the development of renewable energy in accordance with the principles of self-determination and free, prior and informed consent.



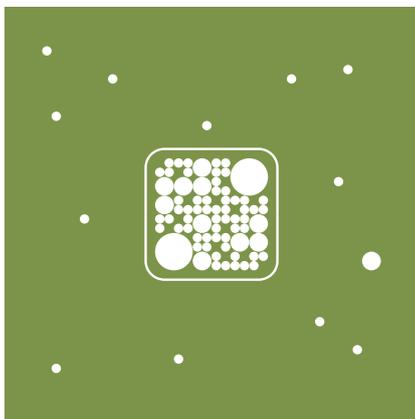
● Seagrasses - visible here at Masig Island
- are vital to the biodiversity of the Torres
Strati, supporting a wide range of marine life.
Credit: Suzanne Long.

Opportunities and recommended actions

- IPLCs should enhance and strengthen vulnerability assessments, community-based monitoring of climate change impacts, and adaptation capacities.
- Governments and relevant actors should increase support for community strategies and institutions engaged in providing early warnings, monitoring, sustainable management, community conservation and adaptation to climate change.
- Governments and relevant actors should support IPLCs in defending and protecting vulnerable ecosystems from threats and pressures, including through legal recognition of their rights not to be harmed by actions arising from outside of their lands, and effective enforcement of those rights.
- Governments and relevant actors should ensure IPLCs can fully and effectively participate in any planning, policy-making and decision-making that affects their ecosystems.
- Partnerships should be established at all relevant levels to enhance collaboration between traditional knowledge holders and scientists to improve understanding of climate change impacts and to devise adaptation strategies.

Key resources

- IPCC (2019) 'Summary for Policymakers', in Shukla, P.R., Skea, J., Calvo Buendia, E., Masson-Delmotte, V., Pörtner, H.-O., Roberts, D.C., Zhai, P., Slade, R., Connors, S., van Diemen, R., Ferrat, M., Haughey, E., Luz, S., Neogi, S., Pathak, M., Petzold, J., Portugal Pereira, J., Vyas, P., Huntley, E., Kissick, K., Belkacemi, M., Malley, J. (eds.) *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. Geneva: Intergovernmental Panel on Climate Change. Available at: <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/>
- *United Nations Framework Convention on Climate Change* (n.d.) 'Introduction to the Local Communities and Indigenous Peoples Platform (LCIPP)'. Available at: <https://unfccc.int/LCIPP>
- Inuit Circumpolar Council Alaska (2019) *Food sovereignty and self governance - Inuit role in managing Arctic marine resources*. Anchorage: Inuit Circumpolar Council Alaska.
- Nakashima, D., Galloway McLean, K., Thulstrup, H., Ramos Castillo, A. and Rubis, J. (2012) 'Weathering uncertainty: Traditional knowledge for climate change assessment and adaptation'. UNESCO. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000216613>



Target 11: Protected and conserved areas

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

Key messages

- The 17 per cent and 10 per cent conservation targets are likely to be met on a purely spatial accounting basis, but progress on effectiveness and equity lags far behind. This has resulted in continued conflict with, and alienation of IPLCs, including, at times, gross human rights violations.
- IPLCs govern at least 50 per cent of the global land area, under customary or community-based regimes, with mounting evidence that in these areas biodiversity is being conserved effectively, thus revealing a major opportunity to boost conservation globally being missed under current conservation regimes.
- A radical transformation in conservation policy and practice is needed, towards rights-based and collaborative approaches that recognise the huge conservation potential of securing IPLC rights to lands and territories.
- A conceptual change is called for from *conservation as the objective* of external interventions in seemingly *natural* areas without human influence, towards understanding that high conservation outcomes arise from ongoing culturally rooted relationships between humans and nature, as manifested by IPLCs with their lands, territories and resources.

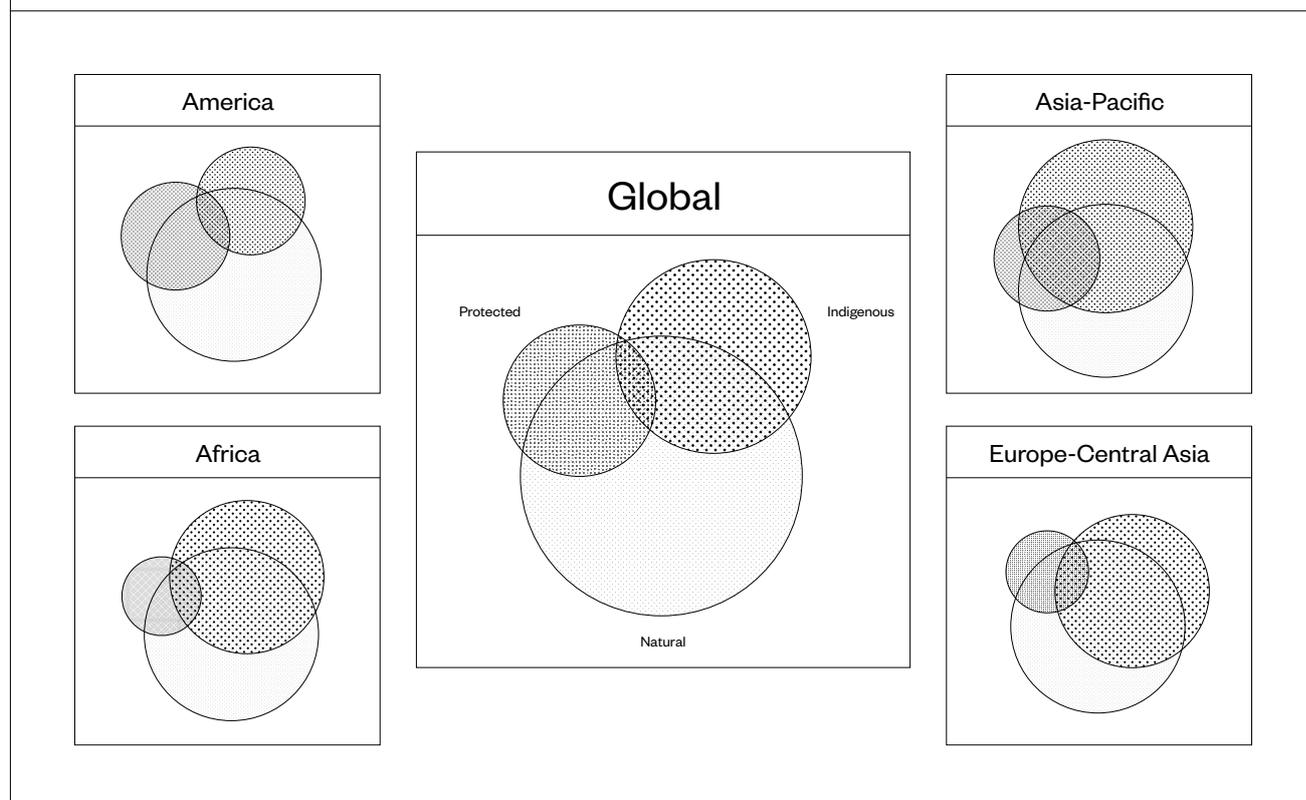
Significance of Target 11 for IPLCs

Target 11 is extremely important for IPLCs because, depending on how protected and conserved areas are conceptualised and implemented, they can either constitute major human rights violations and displacement, or they can recognise and support the efforts of IPLCs to conserve and sustainably manage their lands, territories and natural resources. From the perspective of IPLCs, Target 11 has proved to be an opportunity to enable positive action on indigenous and community-led or co-managed sites and conserved areas, but also a serious threat where increasing restrictions have been imposed under more conventional exclusionary protected-area models.

The potential contribution of recognising IPLC's management systems and land rights to increasing the global area that is legally recognised as protected and conserved is huge. At least a quarter of the world's land area is traditionally owned, managed, used or occupied by indigenous peoples (about 38 million square kilometres).⁽¹⁷²⁾ This area includes about 40 per cent of all land that is formally protected, and about 40 per cent of all remaining land with ecologically intact landscapes⁽¹⁷³⁾ and, therefore, high biodiversity and carbon storage.⁽¹⁷⁴⁾

- **Figure 3: Overlap between the area of land formally designated protected ('Protected'); lands traditionally owned, managed, used or occupied by indigenous peoples ('Indigenous'); and remaining land with very low human intervention ('Natural'); at the global and regional level**

Source: Garnett, S.T. et al.⁽¹⁷⁵⁾



When other forms of communal management by local communities are included, estimates of lands under the communal management of IPLCs range up to at least 50 per cent of the world's land area, covering a wide range of biomes including forests, rangelands, deserts and coastal areas.⁽¹⁷⁶⁾

Scientific evidence is now well established that much of the world's terrestrial wild and domesticated biodiversity is on IPLC lands and territories.⁽¹⁷⁷⁾ They include areas where IPLC rights are legally recognised, as well as areas where they lack legal recognition but claim, use, and manage land and resources in practice. However, these lands are subject to increasing resource extraction; commodity production; and mining, transport and energy infrastructure—all of which drive deforestation and environmental degradation.⁽¹⁷⁸⁾

The need to recognise effective community conservation

Many studies confirm the value of IPLC lands for biodiversity at the national, regional and local levels. Recent research has shown that in Canada, Brazil and Australia, native vertebrate species richness is higher in indigenous-managed areas than in all other areas, including protected areas. 'These comparisons confirm...that positive steps to maintain or enhance already existing values on Indigenous-managed lands have the potential to substantially advance global biodiversity conservation.'⁽¹⁷⁹⁾ Thus, indigenous-managed lands are an important repository of vertebrate species richness in three of the six largest countries on Earth.⁽¹⁸⁰⁾

Multiple studies have shown that deforestation rates are lower in areas where IPLC land rights are secure than in government-managed areas; and local participation in conservation management can improve biodiversity outcomes.⁽¹⁸¹⁾ A 2018 study concluded that 'understanding the scale, location and nature conservation values of the lands over which indigenous peoples exercise traditional rights is central to implementation of several global conservation and climate agreements.'⁽¹⁸²⁾

The need to recognise rights

In addition to documenting coverage of IPLC lands in relation to biodiversity, an important question is whether biodiversity on IPLC lands will be conserved into the future. Indigenous peoples strongly assert that the exercise of self-determination has historically delivered the best conservation outcomes. Evidence confirms that, while biodiversity is decreasing on all lands, it is declining less rapidly overall on indigenous peoples' lands than elsewhere.⁽¹⁸³⁾ Simply recognising and effectively supporting the land rights and management systems of IPLCs would greatly increase progress towards Target 11.

Conservation policy at a global level increasingly recognises the role of IPLCs in biodiversity conservation and the need to respect their rights.^(vi) Similarly, the 2019 *IPBES Global Assessment on Biodiversity and Ecosystem Services* emphasises the vital role of IPLCs in conservation.⁽¹⁸⁴⁾ However, in many countries conservation policy, programmes and projects at the national and local levels too often remain based on outdated colonial approaches and laws enforcing 'fortress conservation'^(vii) and the alienation of people from nature.⁽¹⁸⁵⁾ This not only fails to support IPLCs to continue to play a role in conservation, but in too many cases still generates conflict with IPLCs, severe negative socio-economic impacts, and, too often, blatant human rights abuses.⁽¹⁸⁶⁾

vi. This is particularly evident through measures agreed at the IUCN World Parks Congress in 2003 and the CBD Programme of Work on Protected Areas in 2004; in the formation of the 'Conservation Initiative on Human Rights'; and in several resolutions passed in subsequent World Conservation Congresses.

vii. Fortress conservation is based on the belief that the best way to protect biodiversity is to fully isolate wilderness from humans under the assumption that all local and traditional land-uses contribute to biodiversity loss and degradation of the environment. See: Brockington, D. (2002) 'Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania. Melton: James Currey.

While good progress has been made towards the quantitative conservation target of 17 per cent of terrestrial and inland waters, severe gaps remain in the implementation of the qualitative aspects of the target. Measurement of the effectiveness of government-led protected areas is patchy in terms of biodiversity outcomes,^(viii) and assessment of the equity of governance arrangements lags far behind that which is needed to achieve this spatial target in qualitative terms.⁽¹⁸⁷⁾

viii. A recent review noted that “of the 29% of all PAs that were assessed globally, only 24% had sound management.” Source: Tauli-Corpuz, V., Alcorn, J., Molnar, A., Healy, C. and Barrow, E. (2020) ‘Cornered by PAs: Adopting rights-based approaches to enable cost-effective conservation and climate action’. *World Development* 130.

A conceptual change is called for from *conservation as the objective* of external interventions in seemingly *natural* areas without human influence, towards understanding that high conservation outcomes arise from ongoing culturally rooted relationships between humans and nature, as manifested by IPLCs with their lands, territories and resources. A radical transformation is needed from current conservation approaches that exclude and alienate IPLCs, to rights-based collaborative approaches that support and promote community-led conservation and customary sustainable use, and that celebrate the mutual relations between nature and culture.

Contributions and experiences of IPLCs towards Target 11

IPLCs are contributing significantly to achieving Target 11 in a myriad of ways and in very different national and local circumstances. Their contributions are grouped below under three headings:

IPLC-led conservation, indigenous protected areas, and ICCAs ‘territories and areas conserved by indigenous peoples and local communities’ or *territories of life*.

- Collaborative management of protected areas
- Challenging human rights violations and promoting equity and justice in conservation.

The transformative conservation required in the next decade must be positively rights-affirming, going beyond outreach and collaboration towards full recognition of IPLC rights to land, territories and resources, and increased support for the many genuine instances of IPLC-led conservation.⁽¹⁸⁸⁾

IPLC-led conservation

IPLC-led conservation initiatives are widespread, as documented throughout this report, yet they still receive only limited recognition and support from most governments and conservation organisations. International conservation policy (and, sometimes, national policy) can recognise these initiatives and sites as indigenous protected areas (IPAs); as ICCAs; or perhaps as *other effective area-based conservation measures* (OECMs). IPLCs assert and insist that these areas should be recognised as ancestral lands and territories with larger meaning and purpose beyond the confines of the conservation paradigm. Indigenous peoples hold a special relationship with their territories, lands, waters and resources, which is recognised in international law as arising from customary law and practice. Alongside other political IPLC initiatives to realise their rights, advocacy linked to biodiversity and conservation is leading to reforms in national protected areas systems in several countries, including Australia (see Box 25), Canada (see Box 26) and Madagascar (Box 22) where responsive national frameworks have effectively sought to apply the achievements of global policy.

Box 25: Damein Bell, CEO,
Gunditj Miring Traditional
Owners Aboriginal
Corporation

Gunditjmarra rangers are restoring the environment, and revitalising their cultural heritage.
Credit: Tyson Lovett-Murray, Gubdudj Miring Traditional Owners Aboriginal Corporation RNTBC.



Case study: World Heritage listing as a tool to heal Gunditjmarra Country; Budj Bim Indigenous Protected Area, Australia

The importance of our traditional homelands is inherent to our belief, culture, practice and life. The Gunditjmarra community in southwest Victoria, Australia, knows that our ancestors engineered water channels, making barriers with the lava flow and stones to farm *kooyang* (eels) and fish. This practice continued for thousands of years to build our societies and our stone village sites. The invasion, colonisation and dispossession of our traditional homelands since the early 1800s by Europeans impacted greatly on our lives and culture, but the stone aquaculture systems stayed mostly in place.

From the 1980s, the Gunditjmarra regained control over parts of the aquaculture system through recognition of our right to protect our cultural heritage, which included securing a freehold title. This restored our community's sense of self-determination and pride. The Gunditjmarra worked with government and archaeologists as partners to document the engineered stone works along the Budj Bim Cultural Landscape, and to analyse and interpret how our cultural systems worked—how our ancestors had managed the hydrology of the Budj Bim systems and how the systems adapt during floods and droughts.

Over the past 40 years, our Gunditjmarra community has continued to partner with universities and research organisations to produce technical scientific reports that are rich with contextual information on our ancestors and their practices. Weaving this new generation of science and reporting with our principles of self-determination and informed consent, the Gunditjmarra community has increased its capacity to partner with the broader community and with government, and, in this way, to increase the area of country being returned to us.

We value the opportunity to manage and grow our country through the Indigenous Protected Area programme. This means that we are managing our country in line with IUCN standards. Additionally, in 2019 Budj Bim was accepted by the UNESCO World Heritage Committee for inscription.

Just as importantly, we have managed to keep working on country with our Elders, young ones and families, continuing our connection to Gunditjmarra country. An immense body of our ancestral knowledge was lost through invasion, colonisation and dispossession of our Gunditjmarra country, but we now have a platform to work with our traditional homelands and waters, and to see how traditional Gunditjmarra knowledge will transform and heal the country that we are culturally obliged to look after.



Box 26: IISAAK OLAM Foundation, Canada

Members of Tla-o-qui-aht First Nation gather at Tsisakis (aka heel boom bay) on Meares Island in 2019 for the 35th Anniversary of the peaceful blockades that took place there in 1984 which established Meares Island as a Tribal Park. Credit: Eli Enns.

Case study: Indigenous Peoples' Protected and Conserved Areas; The Pathway to Canada's Target 1

In Canada, through the Pathways Initiative, indigenous peoples and governments are taking leadership together to establish indigenous protected and conserved areas (IPCAs). The Pathways Initiative recognises the integral role of indigenous peoples as leaders in conservation, and respects the rights, responsibilities and priorities of First Nations, Inuit and Métis peoples. Canada Target 1, which was designed to relate to the domestic application of Aichi Target 11, was a catalyst for the initiative, which seeks to support collective and collaborative efforts to conserve nature for the benefit of all Canadians, in the spirit and practice of reconciliation. The initiative has led to the establishment of the following key supporting mechanisms:

- The Indigenous Circle of Experts (ICE) has been involved in an intense engagement process with indigenous knowledge holders

ix. Ethical space is a concept and a process through which the integrity of Indigenous and western knowledge systems are respected and are equal. It provides a venue for collaboration and advice, sharing and cross-validation.

from across Canada. Guided by traditional ways of knowing and principles of mutual respect, reciprocity and models of ‘ethical space’,⁽¹⁸⁸⁾ it has introduced and developed the concept of indigenous protected and conserved areas (IPCAs) in Canada. ICE’s 2018 report, *We Rise Together*,⁽¹⁸⁹⁾ defines IPCAs as: ‘Lands and waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems.’ The report recommends 28 ways that international organisations, governments, civil society and other actors can support the implementation of IPCAs in Canada.

- The IPCA Working Group was convened by the National Steering Committee for the Pathway to Canada Target 1 to enable further development of IPCAs across Canada following the release of the ICE report. The working group includes representation from federal, provincial and territorial governments as well as the Assembly of First Nations.
- In the 2018 Budget, the federal government committed CAD\$1.3 billion over the next five years to create new protected areas.⁽¹⁹⁰⁾ Across Canada, 27 IPCA projects are expected to receive funding through this program, and there is potential for a second round of proposals. The federal government has also committed an additional CAD\$25 million over five years to support Indigenous Guardian⁽¹⁹¹⁾ programs, modelled on Australia’s Working on Country program, and as of 2019 more than 40 Indigenous Guardian programs were in place across Canada.

Examples of indigenous-led conservation in Canada:

- Indigenous-led Pimachiowin Aki,⁽¹⁹²⁾ in the boreal forests of Manitoba and Ontario was declared a UNESCO World Heritage site in 2018. Pimachiowin Aki is the first mixed UNESCO World Heritage Site in Canada, recognised for both its cultural and natural values. It covers 29,040 square kilometres.
- In December 2018, the Cree Nation in northern Quebec announced its intention to seek protected status for 30 per cent—80,000 square kilometres—of its territory.⁽¹⁹³⁾
- Tallurutiup Imanga, Canada’s newest national marine conservation area, covering 108,000 square kilometres, was declared in August 2019. An Inuit impact and benefit agreement⁽¹⁹⁴⁾ established a cooperative management board and an Inuit stewardship program for the area. Together with the 319,411-square-kilometre Tuvaijuittuq marine protected area, Tallurutiup Imanga brings Canada’s total marine protected areas to 14 per cent, exceeding the 2020 commitment of 10 per cent.

There is tremendous opportunity to scale up this recognition, and to replicate in other countries the successes in recognising conservation outcomes in territories and areas managed by IPLCs, and the tenure rights on which they depend. A key opportunity to achieve international commitments, including the Strategic Plan for Biodiversity 2011–2020 and post-2020 global biodiversity

framework, lies in recognising the rights of IPLCs to their lands, territories and resources, and appropriately recognising and supporting the territories and areas collectively governed, managed and conserved by IPLCs.⁽¹⁹⁵⁾

→ ICCAs / Territories of life

ICCAs are inherently diverse and context-specific. Collectively, they are part of a global phenomenon more broadly called *territories of life*, with certain common defining characteristics:

- The community has a close and deep relationship with its territory, including through histories, worldviews, identities, cultures and ways of life.
- The community makes and enforces its own decisions and rules for its territory through a self-determined governance system, whether or not it is formally recognised by the government.
- Regardless of intentions or motivations, the community's decisions and efforts contribute to conserving nature in the territory, as well as to its own livelihoods and wellbeing.

The global movement towards recognition of ICCAs is relatively mature and reflects many years of hard work and advocacy by indigenous peoples and community representatives. In some countries, organisations and networks of indigenous peoples and local communities have successfully engaged with governments to adopt recognition of ICCAs in national and sub-national laws and policies, including those on biodiversity, protected areas and forests.⁽¹⁹⁶⁾

Efforts to highlight the crucial role of ICCAs in key international arenas have achieved important advances. The IUCN recognises four *governance types* of protected areas, which includes governance by IPLCs. Meanwhile in CBD forums, ICCAs have moved from a peripheral position to a more central one, with recognition across multiple thematic and programme areas. These include protected and conserved areas; resource mobilisation; traditional knowledge and customary sustainable use; sustainable development; climate change; ecosystem restoration; and agricultural biodiversity. This broad recognition of the contributions of ICCAs, at least at a global level, has encouraged IPLCs to pursue sustainable self-determination even more powerfully, and to defend their lands and territories against the forces that threaten their survival and wellbeing.

In many countries, however, the contributions of IPLCs to conservation remain largely *out of sight* of national conservation, and in many cases are still under direct threat from dominant political and economic forces. A significant gap remains between what has been agreed internationally and what is being implemented at national and sub-national levels.

The newly agreed definition of an *other effective area-based conservation measure* (OECM) may help bridge this gap, though only under certain circumstances.

→ Other effective area-based conservation measures (OECMs)

In 2018, at COP 14, Parties to the CBD agreed the following definition of an OECM: 'A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity with associated ecosystem

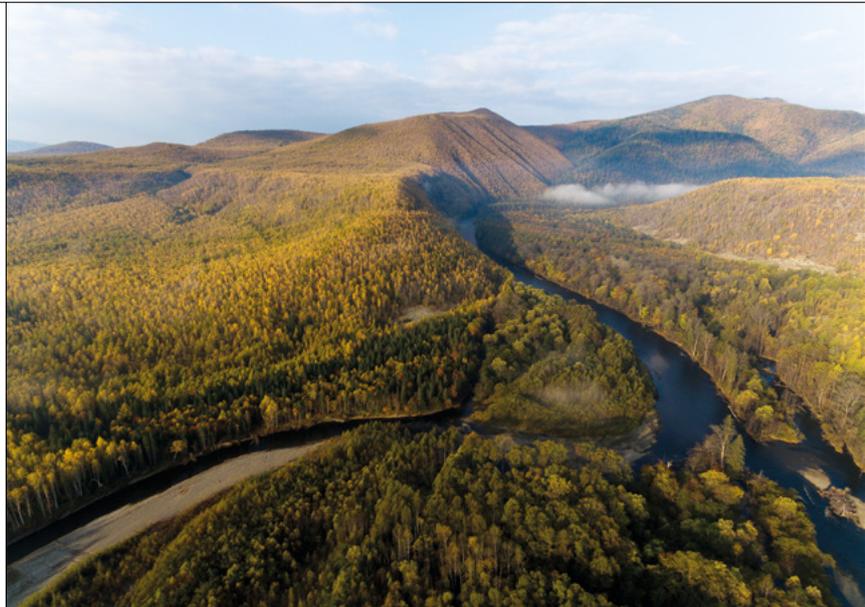
functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values.¹⁹⁷ While OECMs should produce biodiversity outcomes, they do not need to be dedicated to the conservation of nature. They may, in certain circumstances, enable areas governed, managed and conserved by IPLCs to be recognised, reported and supported in ways that are more appropriate than declaring them as protected areas. How effectively this will occur depends on a range of factors, including the level of participation by IPLCs in developing national-level legal and policy frameworks for OECMs and the subsequent level of respect for the rights and responsibilities of IPLCs.¹⁹⁸

Collaborative management of protected areas

In theory, collaborative management of protected areas has been a part of mainstream conservation policy for several decades, but in practice, the degree to which IPLCs have been empowered to participate fully and equitably has been variable. Box 27 describes an innovative example of collaborative management in Bikin National Park in the Russian Federation, where indigenous peoples are involved at all levels of management, from strategy and goal setting through to operations and monitoring.

Box 27: Polina Shulbaeva, Center for Support of Indigenous Peoples of the North

Created in 2015, Bikin National Park is the largest protected virgin forest in Eurasia's pre-temperate zone. Credit: Dilbara Sharipova.



Case study: Bikin National Park; innovative co-management in the Russian Federation

Bikin National Park, an area of 1,160,469 hectares in the Far East of the Russian Federation, is the largest protected virgin forest in Eurasia's pre-temperate zone. The park was created in 2015¹⁹⁹ with objectives not only to preserve and restore the habitats of wild animals and rare species (such as the Amur tiger), but also to protect the forest culture of the indigenous peoples of this territory—the Udege and the Nanai. As a result of collaboration among indigenous peoples, federal, regional and local authorities, and representatives of environmental and scientific organisations during the long process leading up to the creation of the national park, most of the proposals developed to guarantee the

rights and interests of the territory's indigenous peoples were included in the title documents of the park.⁽²⁰⁰⁾

The uniqueness of Bikin lies in its co-management by the indigenous peoples living inside the park and research staff, based on a combination of traditional knowledge, practices and rituals, and new technologies. To this end, a permanent Indigenous Council has been established,⁽²⁰¹⁾ which guarantees the participation of indigenous peoples in decisions on protecting nature and wild species, and coordinates programs and projects that may affect their traditional way of life. The council also develops guidance on norms and behaviour for local communities and monitors the preservation and use of traditional knowledge.⁽²⁰²⁾ The council's chairman is the deputy director of the park.

The regulations developed to manage the park include clear delineation of zones; 70 per cent of the total area is zoned for the traditional management of nature for indigenous people living inside the park and no reduction of this area is possible. All local residents retain the right to visit the park freely, wherever they live, and indigenous hunters can carry out traditional economic activities free of charge in their historical hunting grounds and dispose of the products at their own discretion.

Of the 114 people who work in the park, 70 are indigenous.⁽²⁰³⁾ Indigenous park employees carry out tasks related to protecting and controlling the territory and to community-based monitoring, which makes use of traditional knowledge, practices and rituals together with new technologies and information systems. Researchers and representatives of environmental organisations such as WWF are helping to educate indigenous people about modern environmental protection technologies (such as camera traps, modern navigation devices, and unmanned aerial vehicles or drones). The development of ecotourism and education is also encouraging co-management of the park.

On 2 July 2018, the World Heritage Committee declared the park a part of the Central Sikhote-Alin UNESCO World Heritage site, confirming the uniqueness of this region. Bikin National Park is the first protected area in Russia with a goal to protect the habitat and traditional way of life of indigenous peoples, as well as their involvement in the management of the park.

Challenging human rights violations and promoting equity and justice in conservation

There are still too many cases where conservation is carried out in a coercive manner, causing negative impacts and serious human rights violations, despite widespread policy commitments to the contrary. In 2016, a report by the UN Special Rapporteur on the rights of indigenous peoples highlighted that about half of the planet's protected areas have been established on indigenous peoples' lands and in many cases this has been associated with violations of their human rights. The report also highlighted that conservation organisations were not doing enough to address continuing human rights violations.⁽²⁰⁴⁾ Further instances of human rights abuses have continued to come to light since then. For example:

- In February 2019, a decision by the Supreme Court of India put up to nine million people at risk of being evicted from their forest homes, in a case brought by wildlife organisations to prevent ‘encroachment’ on protected areas.⁽²⁰⁵⁾
- A water management project related to a protected area led to evictions of the Sengwer people of Kenya from their traditional territories and to the death of a Sengwer man in early 2018. Following protests and expressions of concern—which included a joint letter from the UN special rapporteurs on human rights; human rights defenders; and the rights of indigenous peoples—the European Union suspended its support for the water project and the evictions ceased.⁽²⁰⁶⁾
- In 2019, evidence emerged of human rights violations by conservation organisations operating in several parts of the world.⁽²⁰⁷⁾

Since the 1990s, conservation agencies have repeatedly been making policy commitments to uphold human rights⁽²⁰⁸⁾ and it is high time that they take definitive action to ensure that their operations fully uphold these commitments. To achieve the SDGs in synergy with the post-2020 global biodiversity framework by 2030, effective mechanisms are needed to ensure that no more human rights violations happen in the name of conservation.

At this critical juncture in the evolution and implementation of the CBD, IPLCs call for the recognition of their rights to land, territories and resources, and for the development and implementation of effective mechanisms for ensuring measurable improvements in effectiveness and equity.

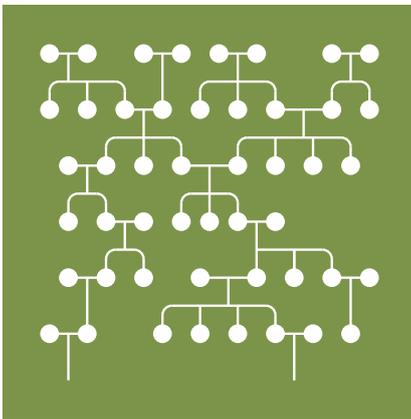
Opportunities and recommended actions

- IPLCs should continue to exercise their inherent rights to self-determination and governance over their lands, waters, territories and resources according to their cultural and spiritual traditions and their reciprocal relationships with nature, and consolidate their community-based conservation.
- Governments and other actors should recognise and support the complex and enriched ecological mosaic that IPLC lands and territories deliver, with high conservation outcomes blossoming from culturally rooted approaches.
- Governments and other actors, in partnership with IPLCs, should enact appropriate legal recognition of IPLC lands and waters as a distinct land-use category contributing to conservation, in accordance with customary laws, management practices, and free, prior and informed consent.
- Governments and other actors, including conservation organisations and funding agencies, should recognise IPLCs as rights-holders and key actors in conserving biodiversity, and support them in this. This could involve, for example, support for community-led conservation models that recognise, secure and appropriately advance various types of IPLC-led conservation, including ICCAs and community conservancies, in national laws, policies and programmes.

- Governments and other actors, including conservation organisations and funding agencies, should actively uphold human rights and the fundamental principle of equity, including gender equity, as integral to conservation governance, management, strategy and programmes, in all forms of protected and conserved areas. Effective avenues to redress actions that negatively impact IPLCs should be established to restore trust and common understanding.
- Governments, IPLCs and other actors should develop collaborative platforms, partnerships and projects to achieve both conservation and human wellbeing goals, including in national and transboundary areas, World Heritage-listed sites, Ramsar sites and biosphere reserves.

Key resources

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- Whitehead, J., Kidd, C., Perram, A., Tugendhat, H. and Kenrick, J. (2019) *Transforming conservation—a rights-based approach*. Moreton-in-Marsh: Forest Peoples Programme. Available at: <https://www.forestpeoples.org/en/lands-forests-territories-rights-based-conservation/news-article/2019/transforming-conservation>



Target 12: Reducing the 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 messages

- Many IPLCs view plants and animals relationally through kinship—having spirit, due care obligations, and moral standing equal to humans. Relational values often motivate people to protect and restore threatened species.
 - IPLCs measure species recovery using, for example, cultural indicators; community-based monitoring and information systems; indigenous and local knowledge; and community governance and management.
 - Partnerships with IPLCs have great potential but must ensure mutual respect, reciprocity, benefit-sharing, accountability and cultural safety.
-

Significance of Target 12 for IPLCs

In many places, threatened species are integral to IPLC livelihoods, values, identities and human rights.⁽²⁰⁹⁾ Traditional knowledge, expressed through stories, songs, prayers and languages, is linked to species' ongoing existence, survival and recovery.⁽²¹⁰⁾ Humans exist in sacred kinship relationships with other-than-human beings that bear custodianship obligations.⁽²¹¹⁾ IPLCs create biocultural habitats and manage the environment in ways that can support recovery.⁽²¹²⁾ Restoring threatened species is part of their wider healing relationships with the environment, based on mutuality, accountability, and reciprocity.⁽²¹³⁾ Given that the root causes of endangerment change over time, it is also important to recognise that IPLCs have long experience of adapting to change and will best navigate the turbulence if their territorial and species management systems are respected.

IPLCs may have different beliefs about endangerment and extinction than scientists or society, and these should be respected.⁽²¹⁴⁾ Target 12 should accommodate the full range of IPLC governance regimes, values, evidence and motivations.⁽²¹⁵⁾ IPLCs exist in many different political, legal, cultural and historical contexts. Inappropriate governance regimes imposed on IPLCs, regimes that do not take their contexts, institutions and constraints into account, can result in non-cooperation and failure.⁽²¹⁶⁾



The Arctic landscape. Credit: US Fish & Wildlife Service.

Processes involving species used by IPLCs should be led, self-managed or co-managed by IPLCs, and take fully into account their governance, institutions, values, languages, concepts, sustainable uses, methodologies, traditional knowledge and evidence bases.⁽²¹⁷⁾ IPLCs are in the best position to monitor and develop indicators for species that are relevant to them and that are compatible with their specific circumstances, and to manage knowledge and data that may or may not be shared. Funding and support for these kinds of activities need to be upscaled and made accessible to them.

Contributions and experiences of IPLCs towards Target 12

IPLCs are contributing to threatened species recovery in many ways. They are extremely knowledgeable about the behaviours, habits, habitats, associations, relationships, distribution, abundance and many other aspects of threatened species. They can use this knowledge to manage the species on their lands and to aid scientists and planners. They often manipulate their environments to create *biocultural habitats* that support threatened species, through techniques such as traditional burning and soil fertility management. Through sustainable use and innovations, they can prevent local impacts and avoid endangerment.

Actions to support threatened species recovery often occur on a site- and species-specific level on IPLC lands and territories, but many threats come from outside their jurisdiction and/or span multiple jurisdictions (for example, climate change, population growth, urbanisation, habitat fragmentation, dispersal barriers and pollution).⁽²¹⁸⁾ A broad interdisciplinary approach, often at multiple scales, is required for long-term success.⁽²¹⁹⁾ Species' range shifts, local eradication, feral animals, and disease also complicate recovery.⁽²²⁰⁾ Recovery may be fragile if the underlying causes of endangerment, including social and biophysical drivers, are not mitigated and plans are not flexible enough to adapt to change.⁽²²¹⁾ It should also be recognised that although IPLCs may not have caused endangerment, they are often asked to carry conservation burdens.

Below is a small sample of approaches IPLCs have taken, which range from political measures to self-monitoring and management to partnerships.

- In Australia, three-quarters of listed threatened vertebrate species overlap indigenous lands.⁽²²²⁾ Traditional owners are establishing indigenous protected areas (IPAs) and, at the same time, identifying biocultural hotspots and providing expert knowledge on threatened species.⁽²²³⁾ For example, the Threatened Species Recovery Hub is working with Aboriginal rangers and communities to monitor and recover the threatened greater bilby (*Macrotis lagotis*), a small nocturnal mammal.⁽²²⁴⁾ More broadly, the hub supports the development of community protocols and indigenous-led processes.⁽²²⁵⁾ Similarly, the Country Needs People campaign supports Aboriginal and Torres Strait Islander Indigenous Protected Areas and species protection activities.⁽²²⁶⁾
- In Guatemala, indigenous communities monitor community forests for forest health and for endangered birds, mammals and plants.⁽²²⁷⁾ They maintain a community-based monitoring and information system that tracks status, trends, cultural values and practices associated with threatened species, and provides information for them to manage their forests.
- In Samoa, indigenous hunters have provided detailed information on the critically endangered tooth-billed pigeon (*Didunculus strigirostris*). Information on its detection, behavioural ecology, food sources and terrestrial habits is providing the basis for short-term conservation recommendations.⁽²²⁸⁾
- In the United States, Joint Secretarial Order 3206,⁽²²⁹⁾ related to the *Endangered Species Act* and tribes, recognises that tribes often bear conservation burdens for harms they have not caused. It employs a mitigation hierarchy of actions to prevent endangerment; preferentially imposes burdens on those who have caused the harms; and, when harms are unavoidable, minimises tribal burdens in consultation with tribal authorities.
- In Ghana, the Ashanti people's management of their forest reserve is dictated by strongly held cultural beliefs, spiritual connections to the forest, and taboos. Their forests were found to be largely undisturbed, with closed canopies and high amounts of commercial timber. Comparatively, forests managed by the forestry commission of Ghana had poor structure and productivity, indicating that the traditional system of management is a useful tool for conservation.⁽²³⁰⁾
- The *Buffalo Treaty* is a modern-day inter-tribal alliance among US Tribes and First Nations in Canada with the long-term aim of allowing the free flow of the buffalo (bison), across the international border and restoring its central role in the food, spirituality and economies of many American Indian tribes and First Nations. It is guided by traditional elders to steer the younger generation back to a path of cultural and ecological balance by closing the gap left by the near extinction of the buffalo, thus renewing the ancient cultural and spiritual relationships with buffalo and grasslands in the Northern Great Plains.



Box 28: Chief Dana Tizya-Tramm, Vuntut Gwitchin First Nation

The Gwich'in have relied heavily on the strength and vitality of the Porcupine caribou herd for thousands of years for their food security. Credit: Minden Pictures.

Case study: The Gwich'in and the porcupine caribou herd, North America

The porcupine caribou herd (*Rangifer tarandus granti*) is an iconic group of animals in North America with a range that stretches from Alaska in the United States to the Northwest Territories in Canada. In the world's longest mammal migration, the porcupine travels over 2,400 kilometres each year across the traditional territory of the Gwich'in nation. The porcupine and the Gwich'in now face complex persistent threats that include ineffective interjurisdictional management, impacts from industrial activity, and climate change.

The Gwich'in are a caribou people whose nation spans 15 communities across the migratory route of the porcupine in the high Arctic. They have relied heavily on the strength and vitality of the porcupine for thousands of years for their food security. They share an intimate connection with the lands and waters that make up the very substance of their spiritual and cultural identity and livelihoods. The health and productivity of the porcupine and the physical and cultural survival of the Gwich'in are one and the same.

Canada has combined the porcupine as a subpopulation of the barren-ground caribou (*Rangifer tarandus groenlandicus*) in its Species At Risk classification.⁽²³¹⁾ This artificially inflates population numbers for the declining barren-ground caribou herds and creates the perception that the porcupine occurs more widely, which has resulted in the approval of major industrial projects without an accurate or adequate impact assessment.

One example is the De Beers Gahcho Kue diamond mine, which is in barren-ground caribou calving grounds in the Northwest Territories. The calving grounds are located in *lizhik Gwats* and *Gwandaii Goodlit* (The Sacred Place Where Life Begins), in the 1002 Area of the Arctic National Wildlife Refuge (ANWR, in Alaska). ANWR, one of the largest intact ecosystems in the world, was established in 1960 and expanded in 1980 to include a moratorium on oil and gas development with the intention of preserving the ‘fish and wildlife populations and habitats in their natural diversity’.⁽²³²⁾ However, recent pressure from the United States oil and gas lobby has successfully opened the 1002 ANWR to accelerated oil and gas exploration through the *Tax Cuts and Jobs Act* of 2017 which allows lease sales, seismic testing, and drilling to take place. The *Act* required that lease sales be completed by the end of 2019, limiting the scope and rigour of the environmental impact assessment typically associated with major projects. Bipartisan legislation, the *Arctic Cultural Coastal Plain Protection Act*, has been passed in the United States House of Representatives by those who believe that the purpose of the wildlife refuge is antithetical to oil and gas development. This has been passed on to the Senate.⁽²³³⁾

This development puts strains on achieving the objectives of *Treaty E100687: Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd*—a bilateral international treaty in force since 17 July 1987. The treaty is administered by the International Porcupine Caribou Board, whose core responsibility is management of the herd. The board was established in 1985 following the negotiation of the Porcupine Caribou Management Agreement and includes representation from both government and indigenous nations/organisations.⁽²³⁴⁾ It has the authority to make recommendations to the federal and territorial ministers based on information gathered in any manner—including information based on traditional knowledge, innovations and practices—to inform recommendations on an equal footing to science. However, the board’s last report was released in 1998⁽²³⁵⁾ and it has not convened a meeting since November 2016.

Recognising the significant historical, spiritual, and cultural impacts that any industrial activity will have on the porcupine and the Gwich’in people, the 634 First Nations Chiefs of the Assembly of First Nations have demonstrated overwhelming and continuous support to the Gwich’in through passing of resolutions and calling on the governments of Canada and the United States to ensure that the critical habitat located in the Arctic National Wildlife Refuge be permanently protected through designation as a protected area.



Box 29: Alexandra McGregor and Wanli Ou, AFN Fisheries

Durney Nicholas, a traditional Mi'kmaw fisher from Pictou Landing, Mi'kmaq territory. Credit: Amy Moulton

Case study: Indigenous eels in Canada

Pimizi (the Anishinaabemowin word for *eel*) has long co-existed with the indigenous peoples of the Canadian eastern seaboard on Big Turtle Island. Otherwise known as the American eel (*Anguilla rostrata*), this serpentine creature has been vital to the health and wealth of indigenous peoples for thousands of years. Eels have not only been a significant source of food and medicine but are key to indigenous cultures, traditions and knowledge systems that demonstrate respect, co-existence, and responsible governance.

Given its reputation as a magical being with healing powers, it seemed fitting that the American eel played a restorative role in the long struggle for Aboriginal rights to fish in Canada. In August 1993, Donald Marshall Jr., a member of the Mi'kmaq Nation, was accused and charged with three offences set out in the federal fishery regulations: the selling of eels without a licence, fishing without a licence, and fishing during the closed season with illegal nets. In September 1999, Mr Marshall was acquitted on all charges and the Supreme Court of Canada upheld the Treaty rights of the Mi'kmaq to fish for a *moderate livelihood*. This landmark ruling in Canada involving eels affirmed the Nation-to-Nation relationship between the Canadian state and Indigenous Nations on the Atlantic coast.

American eels spawn in only one place—the Sargasso Sea—and the eiders travel up the eastern seaboard of North America, populating the rivers and streams of the United States and Canada. Since the 1950s, populations of this catadromous species (one that migrates down rivers to the sea to spawn) have declined dramatically over vast areas of Canada due to multiple factors, including continuing habitat degradation, dams, pollution and commercial fisheries.

To the Anishinaabeg indigenous peoples, eels are an excellent indicator of habitat integrity and can signal the vulnerability of other species in the ecosystem. Therefore, the decline of eels is seen by some local First Nations communities as a sign of interference with the natural sacred order, a symbol of a looming potential broader environmental collapse and a symbol of society's willingness to endorse policies that have led to their decline.

In 2012, the Committee on the Status of Endangered Wildlife in Canada categorised this iconic species as threatened. The recommendation by this independent body of scientific experts triggered a legal process to have the species listed for protection under Canada's *Species at Risk Act*, a federal law developed as part of Canada's commitments to the Convention on Biological Diversity. Given the responsibility indigenous peoples have to their territory and all its inhabitants, as well as their legal stake in resource conservation and management decisions, many First Nations believe that efforts to recover the species should be driven by their knowledge systems. For First Nations, these recommendations mean that minimum levels for food sustainability should be maintained, gear restrictions should mirror traditional practices, and adaptive management and monitoring programs should be based on food sustainability requirements.

“The plight of the eel must awaken us to the crucial need to transform our relationship with Mother Earth and All Our Relations, and awaken us to the pivotal role of Indigenous Peoples in this process”.

— The late William Commanda, Algonquin Elder

Where partnerships between IPLCs and researchers are based on mutual respect, reciprocity, benefit-sharing, accountability and cultural safety, evidence shows that they have significantly furthered collective understanding of species' ecological distribution ranges, baselines and trends.⁽²³⁶⁾ However, it is also evident that historic and remembered prejudice and biases against indigenous ways of knowing and being cast long shadows, and, too often, they continue to characterise the scientific approach to IPLCs.

‘Two-way healing’ / ‘two-way knowing’ / ‘both-way learning’⁽²³⁷⁾ can promote transformative change in IPLCs and society for living in harmony with nature.⁽²³⁸⁾

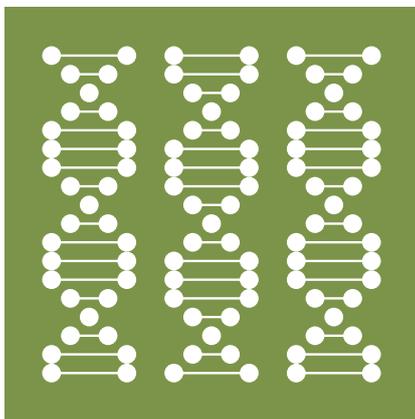
Where mutual respect and trust is in place, or emerging, there are real opportunities for working with IPLCs on targeted recovery efforts, and, through those, commitment to supporting their ways of life, thinking, wellbeing and human rights.

Opportunities and recommended actions

- IPLCs should be supported to upscale initiatives to reduce species extinctions, including monitoring and reporting species recovery actions at national and international levels.
- Governments, donors and relevant actors should provide continued support for community-based initiatives for reducing risk of extinction, including community-based monitoring and information systems.
- Governments and all relevant actors should ensure coordination and co-operation across scales and jurisdictions, and involve IPLCs in developing laws, policies and planning processes to protect their rights and interests. Successful recovery of threatened species over the long run requires mitigating the underlying causes of endangerment, as well as cumulative and combined impacts.
- All actors should mainstream species protection into production landscapes and biocultural habitats.
- All actors should recognise and value the range of IPLC institutions, values, concepts, contexts, interests and rights that maintain their ways of life and prevent species endangerment; they should also avoid imposing conservation burdens that could degrade the custodianship of IPLCs and their relationships to nature.

Key resources

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- Reyes García, V., Fernández Llamazares, Á., McElwee, P., Molnár, Z., Öllerer, K., Wilson, S.J. and Brondizio, E.S. (2018) 'The contributions of Indigenous Peoples and local communities to ecological restoration'. *Restoration Ecology* 27(1): 3–8.



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 messages

- For millennia, through their customary sustainable use practices and traditional knowledge, IPLCs have created, maintained and nurtured biological and genetic diversity in agriculture for the purposes of food, medicines and cultural values.
- Globalised agro-industrial food systems, which are linked to land dispossession and land-use conversions, continue to displace and transform local food-production systems; in many cases, they are undermining local food security, and human health and wellbeing, and are eroding genetic diversity.
- IPLCs are acting to renew and revitalise indigenous and local food systems as part of broader social movements for food sovereignty and agroecology; safeguarding genetic diversity; and contributing to local livelihoods, improved health and nutrition, and self-determined development.

*The elders still order us
The elders still tell us,
Order us to conserve the taro seeds
Tell us to preserve the yam seeds
To save at least 30 kinds of seeds
Even in a famine, we will not die.*

— Hta (poem) of the Karen people, Thailand



Women work in rice terraces that climb the hills of Luzon Island. Credit: National Geographic Image Collection / Alamy Stock Photo.

Significance of Target 13 for IPLCs

Diverse local economies underpinned by subsistence values have prevailed over much of human history, much longer than more recent industrialised food regimes. IPLCs have evolved dynamic relationships with the lands and waters with which they have lived, using traditional knowledge and customary sustainable use practices for food production and community livelihoods.⁽²³⁹⁾ Indigenous food systems embodying cultural values and governed by customary institutions have promoted community wellbeing and solidarity; collective action and ritual celebrations; and spiritual values of care and reciprocal relations with the natural world.

Contributions and experiences of IPLCs towards Target 13

Livelihood diversity

The Kyrgyz nomad diet is described as based on livestock activities, simple in preparation and cooking, rich in protein and calcium, good for transportation and storage, and meals are usually taken together with the family.⁽²⁴⁰⁾ African pastoralism relies heavily on livestock as a source of economic and social wellbeing, comprising at least 50 per cent of the average pastoralist household's production (both subsistence and marketed). Pastoralists are the custodians of key natural resources found in arid and semi-arid areas covering 40 per cent of Africa's land mass; they move strategically to access water, pastures and other grazing resources. Pastoralist culture is part of the cultural heritage of Africa. Animals and plants in pastoral areas are among the most important genetic resources on the continent.⁽²⁴¹⁾

Indigenous food systems rooted in traditional small-scale agriculture are well established agricultural systems that generate great diversity of domesticated crop and animal species; this diversity is maintained through customary resource management and sustainable use practices, and sustained by indigenous institutions and knowledge systems. Localised food systems have provided the foundations of people's nutrition, incomes and economies in culturally specific ways and in highly diverse contexts around the world.

Seed and crop diversity

x. A local cultivar or animal breed that has been improved by traditional agricultural methods.

Seed maintenance and local seed exchanges have been important for plant domestication, exchanges of improved crops, and maintenance of crop biodiversity. Seed flows (through the market or through other forms of seed exchange) are networks through which planting material flows and genetic diversity is disseminated and conserved. Today, many IPLCs continue to maintain home gardens with high landrace^(x) diversity and species diversity, contributing to conservation in situ.

Box 30: Partners for Indigenous Knowledge Philippines

Making imbuleh, an indigenous dish from the Cordillera. Credit: PIKP.



Case study: Heirloom recipes of the Cordillera, Philippines^(2,42)

Extract from a recipe book of indigenous peoples in the Cordillera region of the Philippines:

‘The ingredients in this book are diverse. They come from the land and the waters of the indigenous territories in the Cordillera. They include grains, roots, stems, shoots and fruits of plants; fish, crabs and snails from the waters; domestic animals and those that grow wild in the forests; and insects. They are fresh, natural, packaging-free, and simply delicious. The great variety of the ingredients point to the people’s deep familiarity with their land and territory, their skill in foraging, hunting and gathering, and their physical strength and perseverance in working the land. From careful observation and experience, the people learned when is the best time to plant the seeds and when to harvest. They know when and how to catch the fish; gather the snails, crabs, frogs and tadpoles from the waters; and collect the edible mushrooms. Children get involved in gathering the next meal. After school they would go to the river or to the rice paddies and catch and gather ingredients for their mothers to cook. This way, the knowledge is passed on and kept for another generation.’

Culinary uses often drive women to maintain a variety of landraces in their home gardens. For example, women in West Asia maintain a high number of cereal, legume and fruit tree landraces, which are seen as better suited for traditional meals, jams, and syrups than their commercial counterparts.⁽²⁴³⁾ When it comes to the wild relatives of cultivated species, women again play a key role in their conservation. For example, in Armenia's Erebuni State Reserve, rich in biodiversity, it is mainly women who pass down their knowledge of crop wild relatives through the generations.⁽²⁴⁴⁾



Box 31: Astrid Álvarez

Carmen Tirado tending to seedlings in the community of Flores de Mochá. Credit: CEPALC.

Case study: Engendering biodiversity, Zenu Women, San Andrés De Sotavento, Colombia⁽²⁴⁵⁾

The Zenú women of Colombia use their critical knowledge of natural resources and cultural practices in the meaningful space of the front yard, or patio, which survives despite the fragmentation of their ancestral territories over the past three centuries. The Zenú de San Andrés de Sotavento reserve is located in the Caribbean region of Colombia, and although the Zenú people possessed a land title for 83,000 hectares of land dating from the colonial era, their territory underwent a series of fragmentations, first at the hands of the Spanish State and later by the newly established and strengthened Colombian State in the republican era.

Zenú women interact with biodiversity in three fundamental ways to contribute to the survival and wellbeing of their people. First, the Zenú front yard is used for raising small animals, fruits and vegetables, for food and to involve children in learning. Second, dozens of wild and cultivated medicinal plants are used to support the indigenous health system. Third, they conserve and sustainably use wild palms for producing cultural materials such as construction goods, dyes, ornamentation, firewood, and artisanal creations incorporating centuries-old patterns. Such practices are vital contributions to sustainable agriculture, with many benefits including organic composting, seed selection for greater biodiversity, auto-consumption rather than market dependency, and support for bee populations. They also help maintain, reproduce, and transmit Zenú identity and culture to future generations.

On a global scale, a study by ETC Group,⁽²⁴⁶⁾ highlights the contributions of peasants to global genetic diversity: ‘Peasants have bred and donated (to national and international gene banks) 2.1 million varieties of 7,000 domesticated plant species. 80–90 per cent of peasants’ seeds are saved, shared or locally traded [...] Importantly for adapting to climate change, peasants protect and sometimes interbreed 50,000–60,000 wild relatives of cultivated species at no cost, with a potential economic value of \$196 billion. While many of these species are minor crops, they may be important to countries or ecosystems as essential *famine foods*.’

Hundreds of millions of rural people regularly turn to local food systems in times of scarcity. Ironically, many of the world’s farmers and small-scale food producers are also among the world’s poorest in terms of cash incomes and adequate food.

Threats to agricultural biodiversity

Rapid transitions from subsistence economies to market-oriented production systems are changing local livelihoods, food systems, traditional diets and nutrition, and the health and wellbeing of IPLCs; they are also disrupting women’s customary productive roles, and management and control in local food systems. Land-use changes associated with large-scale mono-crop production of agricultural commodities are displacing multi-mosaic landscapes rich in genetic diversity.

Today, indigenous food systems persist, but they are threatened and marginalised by a global food regime shaped by the neoliberal tenets of deregulation, international trade liberalisation, reduction of public expenditure, and privatisation. The 2019 *IPBES Global Assessment on Biodiversity and Ecosystem Services* found that: ‘Globally, local varieties and breeds of domesticated plants and animals are disappearing. This loss of diversity, including genetic diversity, poses a serious risk to global food security by undermining the resilience of many agricultural systems to threats such as pests, pathogens and climate change. Fewer and fewer varieties and breeds of plants and animals are being cultivated, raised, traded and maintained around the world, despite many local efforts, which include those by indigenous peoples and local communities’.⁽²⁴⁷⁾

Enabling conditions

^{x1}. Terminator Technology genetically engineers plants to produce sterile seeds at harvest.

Strategies to maintain genetic diversity need to be seen through the lens of the power dynamics governing the current food regime. Multi-level economic, social, cultural and political governance systems decide on the policies and strategies affecting genetic diversity and associated diversity in food systems and ecosystems at local, national, regional and global scales. The interactions between local food initiatives and the dominant regime on food and agriculture will shape the future of genetic diversity, including the struggle for control of seed between the corporate seed companies and smallholder farmers, and the effects of genetic engineering and terminator technologies^(x1) on seed diversity and seed sovereignty.⁽²⁴⁸⁾

Safeguarding genetic diversity requires amplifying IPLCs historic and ongoing dynamic management of genetic resources, which optimise the diversity and complementarity of species; increase synergies between crops, livestock and trees; maximise resource efficiency and productivity; and enhance ecosystem functions and resilience.⁽²⁴⁹⁾

Supporting IPLC customary resource management and sustainable use practices will guarantee the recovery and reproduction of biological resources and increase the availability of diverse, nutritious, sustainably produced and culturally appropriate food for healthy diets.

Renewal and revitalisation of indigenous and local food systems, as part of a broad social movement for food sovereignty and agroecological transitions, would safeguard existing in-situ pools of genetic diversity and contribute to local livelihoods, improved health and nutrition, food sovereignty and self-determined development.⁽²⁵⁰⁾



Foods and seeds from the Krayan Highlands.
Credit: Elias Yesaya.



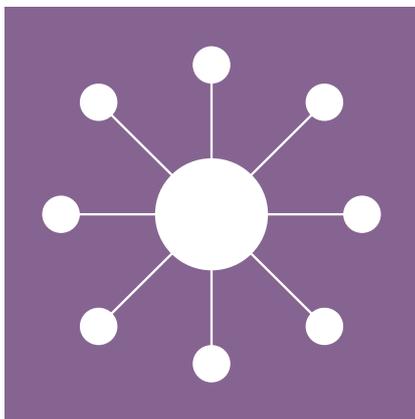
Plantations and deforestation have a grave impact on the ways of life of nearby communities, who, despite these encroachments, often play a vital role in preserving biodiversity. This illustration depicts subsistence agriculture surrounded by plantations. Credit: Agnès Stienne, *Dépaysages de palmiers à huile*, Visionscarto.net.

Opportunities and recommended actions

- IPLCs should redouble their efforts to revitalise indigenous food systems, including: strengthening community-based institutions; values and knowledge transmission; technological innovations; and livelihoods.
- Governments should adopt comprehensive policies to empower customary sustainable use and management of lands, waters, territories and resources—including security of customary land tenure and protection from harmful agro-industrial interventions and technologies—while upholding the free, prior and informed consent of women, men, elders and youth.
- All actors must take *whole system* approaches to safeguarding genes, species and ecosystems by establishing inclusive multi-level partnerships, platforms and networks on sustainable food systems, biodiversity, nutrition and ecosystem restoration, while ensuring full and effective participation of IPLCs.
- All actors should uphold farmers' rights and empower farmers to maintain, develop and manage crop genetic resources, including through seed fairs and community seed banks, and rewarding them for their indispensable contributions to the global pool of genetic resources.
- All actors should enhance knowledge and information on the state of genetic diversity, including through community participatory research and by documenting tangible and intangible cultural heritage across the landscape, including transboundary exchanges.

Key resources

- Food and Agriculture Organization of the United Nations (2018) 'High-level expert seminar on indigenous food systems: Building on traditional knowledge to achieve Zero Hunger'. 7-9 November 2018. Rome: FAO. Available at: http://www.fao.org/fileadmin/user_upload/partnerships/docs/LAST_FINAL_REPORT_HLESIFS_2018_01.pdf
- International Panel of Experts on Sustainable Food Systems (2016) 'From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems'. Bonn: International Panel of Experts on Sustainable Food Systems. Available at: http://www.ipes-food.org/_img/upload/files/UniformityToDiversity_FULLL.pdf
- ETC Group (2017), *Who will feed us? The Peasant Food Web vs The Industrial Food Chain*, 3rd edition. ETC Group. Available at: <https://www.etcgroup.org/whowillfeedus>
- FAO and IFAD (2019) *United Nations Decade of Family Farming 2019-2028: Global Action Plan*. Rome: FAO. Licence: CC BY-NC-SA 3.0 IGO. Available at: <http://www.fao.org/family-farming/detail/en/c/1195619/>
- General Assembly resolution 73/165, *United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas*, A/HRC/RES/39/12 (2018).
- *International Treaty on Plant Genetic Resources for Food and Agriculture*. Available at: <http://www.fao.org/plant-treaty/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 messages

- For IPLCs, ecosystems and habitats that provide *essential services* are their customary lands, territories, waters and resources, which fulfil their livelihood, spiritual and cultural needs.
- Secure IPLC land tenure is fundamental to progress on achieving this target and is critical not only for IPLCs but for their continued substantial vital contributions to the whole of humanity.
- IPLC women play important roles and hold distinct rights as knowledge holders and resource managers.

Significance of Target 14 for IPLCs

Customary land tenure systems of IPLCs have co-evolved in all biomes on Earth, embodying dynamic, ecosystem-based and culture-based resource management systems for fulfilling human needs. Securing these *territories of life* is a cross-cutting theme for many Aichi Biodiversity Targets, but is perhaps most relevant to Target 14. Secure land tenure is a prerequisite for restoring and safeguarding nature's contributions to women, IPLCs and people in impoverished and vulnerable situations, which are integral to their health, wellbeing and livelihoods. It is also a prerequisite for the maintenance of natural and social resilience. However, the experiences of IPLCs as they strive to defend and secure their lands and territories continue to be marred by hostility and persecution. This has severe ecological, social and cultural consequences, distinctly for women and men, given their differentiated gender roles, responsibilities and opportunities with regards to ecosystem governance and management.⁽²⁵¹⁾



Maasai medicine woman.

“Indigenous women are keepers of our natural resources. As a medicine woman I have to go far away to look for medicinal plants; we do not even have a forest anymore near us. I am even thinking of creating a small forest in my home. Am glad as indigenous women we are working together to share knowledge and have these plants just next to our kitchen gardens. We have the first step. We need you all to work with us and us with you.”

— Nailepu Naiguta, a Maasai medicine woman from Paran women's group Ololulung, Narok, Kenya

Contributions and experiences of IPLCs towards Target 14

The figures related to customary ownership of the world's land are staggering. At least half of the world's land area is estimated to be under indigenous and community tenure.⁽²⁵²⁾ One quarter of the world's land area (about 38 million square kilometres) is under the customary ownership and management of indigenous peoples.⁽²⁵³⁾ Up to 2.5 billion people make their living in rural economies through the stewardship of community forests and other community lands that play an essential role in maintaining ecosystem services at the landscape level.⁽²⁵⁴⁾

These areas have very high significance for nature's global contributions to people⁽²⁵⁵⁾ and yet only 10 per cent of IPLC lands are legally secured.⁽²⁵⁶⁾ IPLC contributions towards Target 14 include both the safeguarding of these lands and territories against multiple external drivers of environmental destruction, and also the measures they are taking to conserve, sustainably use, and restore them, with women playing a particularly important role.

IPLC actions to safeguard their lands and territories

IPLCs are taking significant action across the world to safeguard their lands and territories, and the nature and biodiversity found therein. Examples provided throughout this report and further examples include:

- In Cambodia, Bunong indigenous communities in Mondulkiri province claim that since a private company received a 70-year lease to some 2,386 hectares for a rubber plantation and agricultural products, their ancestral lands, traditions and customs, and their livelihoods that depend on local ecosystems, have been under threat.⁽²⁵⁷⁾ In 2018, the Cambodian Center for Human Rights reported that more than 800 families had been affected. After losing any hope of obtaining justice in Cambodia, the communities successfully filed a lawsuit against the company, Socfin-KCD, under French law on the basis that the plantation is funded by French firm Bolloré. In October 2019, community representatives appeared for questioning at the tribunal in Nanterre, France.⁽²⁵⁸⁾
- In Belize, the Maya have mounted several court cases to defend their lands and ecosystems against degradation from oil exploration, road construction and uncontrolled logging.⁽²⁵⁹⁾
- In Peru, the Shipibo-Conibo people have raised a court case against illegal deforestation of an area on their lands for conversion to oil palm.
- In Kalimantan, Indonesia, the Dayak community of Long Isun is opposing logging on their lands without consent.
- In Sabah, Malaysia, villagers around the Telaga River in Pitas are fighting against the clearfelling of mangroves for intensive shrimp production.
- In Guyana, the Wapichan have been waging a campaign over many years to safeguard their lands and forests from external threats, including from illegal mining.
- In Colombia, indigenous peoples are working to protect their lands and territories in the Cañamomo Lomapieta Indigenous Resguardo from illegal extraction activities and are carrying out ecological restoration of damaged lands.

A Maya Q'eqchi attorney addresses the United Nations Permanent Forum on Indigenous Peoples Issues. Credit: Jamie Malcolm-Brown.



Case study: Safeguarding lands and territories: court cases mounted by the Maya, Belize⁽²⁶⁰⁾

Box 32: Maya Leaders' Alliance

In the Toledo District of Belize, which is part of the Mesoamerican Biodiversity Hotspot, the Maya are stewards of an estimated 200,000 hectares of tropical rainforest, savannah and wetland ecosystems. In each Maya village, land and resource use follows sustainable stewardship practices, with areas reserved for farming, medicinal use, spiritual use, hunting, and conservation to sustain a healthy watershed.

On 22 January 2001, the Government of Belize granted an exclusive concession to US Capital Energy Belize to conduct oil exploration within Maya territory in southern Belize. There was no consultation with the affected Maya communities. The concession covers 313,906 hectares, including all the traditional Maya lands in the Toledo District and land within the Sarstoon-Temash National Park, which encompasses land belonging to the Maya communities of Crique Sarco, Midway, Sunday Wood, Conejo, and the Garifuna indigenous community of Barranco. In 2014, US Capital Energy Belize installed a drill pad and rig within the national park to conduct exploratory drilling.

In addition, in 2011, despite a court injunction, the government issued logging permits on Maya lands to third parties without consultation or the consent of Maya people. Maya village leaders monitored vast quantities of timber illegally removed from their land for export to China; seven times more rosewood was logged that year in Toledo than permitted by the Forestry Department. Initially the government took no action to curb this illegal logging.

Two more cases have recently been filed by the Maya Leaders' Alliance and other aggrieved leaders for incursions onto Maya lands without consultation or consent:

- The government seized a large area of farmland in Jalacte Village for construction of a major highway and associated infrastructure. The highway runs directly through the village and disrupts community access to farmland.
- An individual took up residence near a protected sacred site that was understood by the community to be off limits for building. They bulldozed a road and damaged an ancient Maya temple. They did not seek or receive permission, either from the government or from the local community.

The Maya have fought these cases in the Belize Supreme Court, the Caribbean Court of Justice, and the Inter-American Court of Human Rights. In 2015, the Caribbean Court of Justice—the highest court of the Belize judicial system and the Caribbean—awarded 'legal and constitutional effect to the umbilical relationship between the Maya people of southern Belize and the land and its resources that have long provided physical and spiritual sustenance to them and their forebears'. The decision of the court led to recognition of collective and individual property rights for the Maya people within the scope of Sections 3(d) and 17 of the *Belize Constitution*.



● Beehives in a Mayan community in Mexico.
Credit: Alessandro Banchelli.

Actions for conservation, sustainable use and restoration

In addition to protecting their lands from externally driven destruction, many IPLCs actively conserve and manage nature, based on traditional knowledge and customary practices and on new approaches developed collaboratively with scientists.⁽²⁶¹⁾ For example, the Maya people in Quintana Roo, Mexico, are actively restoring populations of *balché* and other native tree species, to ensure that sufficient food is available for bees (see Box 33).

Women may differ from men both in their reliance on nature and in their roles in management of nature, according to their different responsibilities and priorities. In certain cases, inequalities between women and men in access, control and ownership of land and natural resources, as well as socio-cultural barriers to economic opportunities for women, can mean that women are more dependent on local access to nature and are more vulnerable to the effects of environmental degradation.

In many societies, women are taking their own collective actions towards Target 14, asserting their distinctive roles as knowledge holders and protectors. Examples include:

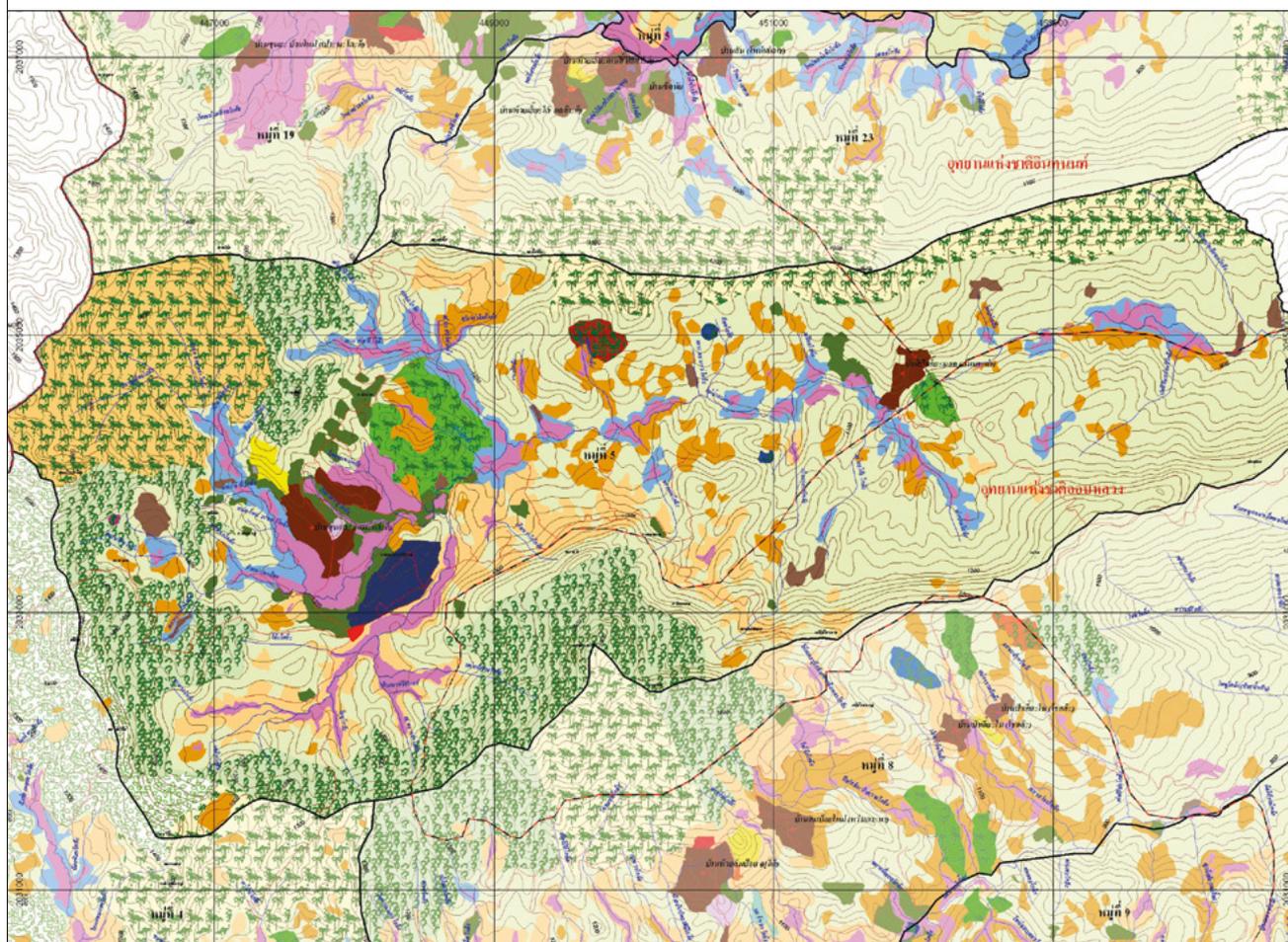
- In Armenia, since 2011, the Berd Women's Resource Centre Foundation has been working with rural communities and local women's groups to address environmental degradation in the Tavush region. The Centre focuses on gender equality and women's unemployment, and promotes women's empowerment and self-employment opportunities by engaging local women in the sustainable harvesting of wild plants. In addition, some 2,000 shrubs have been planted. The Centre teaches women how to process the

plants and sell them to generate income. This project has also involved the sale of wild berry jams and jellies, and 80 women have benefitted indirectly through participation in training and workshops.⁽²⁶²⁾

- In the Dolakha district of Nepal, women play essential roles in community forests, using their knowledge and experience to develop effective strategies to conserve, manage and use the forests. As a result of these success stories, women are increasingly being recognised as important actors engaged in biodiversity conservation in this region.⁽²⁶³⁾
- In Egypt, the Bedouins in Wadi Allaqi Biosphere Reserve are facing challenges to adapt to their new environment after being resettled away from their homelands of Lake Nasser in 2002. Their tradition of agro-pastoralism was restricted in the reserve and it is expected that the new generation will gradually lose their traditional knowledge. Despite these difficulties, women are still trying to ensure that their experience and knowledge about medicinal plants, food, and grazing resources and adaptations as a result of their resettlement are sustained and contribute to their community's sustainable livelihoods.⁽²⁶⁴⁾

- **Figure 4: A community map created by the *Pga k'nyau* (Karen) community of Khun Tae, in northern Thailand. The detailed land use patterns revealed in the map show that 47% of the 6,064 acres land area is customary use forests, 11.2% for farming and 38.2% is under strict community protection.**

Source: IMPECT



Case study: El Balché; Sacred trees and bees of the Maya people, Mexico

Beekeeping is an important source of foreign exchange in our country and a source of income for much of the Maya community of Felipe Carrillo Puerto, Quintana Roo. However, it has decreased because of the low price paid to honey producers. In addition, populations of pollen- and nectar-producing trees have decreased in the area as a result of forest resource exploitation, so the quantity and quality of honey has also decreased. Therefore, it is necessary to monitor the hives constantly, and also to monitor and reforest the flora around beekeeping farms, to ensure a supply of pollen and nectar for the bees. There has been minimal support from government agencies for this and, therefore, the U Lool Xaam Cooperative Society and its members have organised themselves to carry out part of these tasks.

In Tihosuco and in the Quintana Roo region, one of the most affected species is the *balché* (*Lonchocarpus longistylus*). This tree has become scarce over the past 10 years or so. The *balché* is a tree of great importance for the Maya people. It is used in rites and ceremonies: a drink is made from its bark which is presented as an offering during the *cha' chaakc* ceremony in which Chaak, the god of rain, is asked to show favour to the crops. The drink has medicinal properties: an infusion of its leaves is used to treat coughs and to disinfect wounds. *Balché* flowers are a source of nectar for the bees, and the tree is ideal for the conservation of the hives, avoiding excessive swarms and keeping them in good condition for the honey harvest; this strengthens beekeeping as an economic activity and therefore strengthens the social development of families dedicated to beekeeping. *Balché* also has broader environmental importance, helping to combat the effects of pollution by purifying the air and preventing soil erosion.

Discussions between men and women in the community have identified, revalued and confirmed the cultural and environmental importance of *balché* trees, which has motivated not only their care but also ongoing reforestation. The CIELO partners of the Lool Xaam venture have reforested areas in the immediate vicinity of their beehives with native plants of the region, including *balché* and other species that are sources of nectar. The locations chosen for reforestation have been used for agriculture, and the intention is to regenerate the vegetation by planting diverse tree species which collectively can produce various types of nectar.

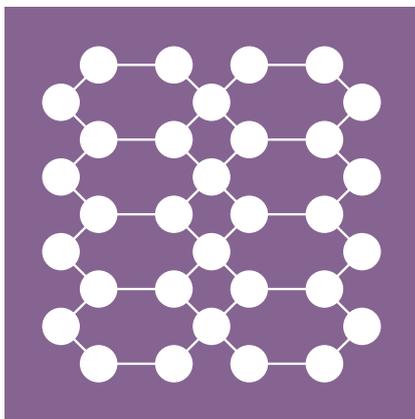
The reforestation and conservation of planted areas in the community of Tihosuco will contribute to the reproduction of native plant species, which in turn will increase bee production and strengthen its presence within the agri-food sector. This has great benefits for beekeeping as a sustainable productive activity, as well as for the promotion and maintenance of floral diversity in the region.

Opportunities and recommended actions

- IPLCs should continue to defend their collective lands and territories, and upscale partnerships with relevant actors to secure customary land tenure, paying particular attention to women's cultural and socio-economic context and distinct rights.
- Governments should fulfil their human rights obligation to respect and protect the rights of IPLCs to their lands, territories, waters and resources, and to promote health, livelihoods and wellbeing for women, the poor and the vulnerable, leaving no one behind.
- Governments and relevant actors should respect IPLC cultural and material values, their spiritual relationships with sacred sites, culturally important species, and other contributions of nature to people.

Key resources

- Sangha, Kamaljit, K., Russell-Smith, J. and Costanza, R. (2019) 'Mainstreaming indigenous and local communities' connections with nature for policy decision-making', *Global Ecology Conservation* (19). Available at: <https://www.sciencedirect.com/science/article/pii/S235198941930229X>
- IPBES (2019) *Summary for policymakers of the global assessment on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). Bonn, Germany: IPBES. Available at: <https://doi.org/10.5281/zenodo.3553579>
- Indigenous Peoples Major Group for Sustainable Development (n.d.) *Global report on the situation of lands, territories and resources of indigenous peoples*. IPMG. Available at: <https://www.indigenouspeoples-sdg.org/index.php/english/all-resources/ipmg-position-papers-and-publications/ipmg-reports/global-reports/116-global-report-on-the-situation-of-lands-territories-and-resources-of-indigenous-peoples/file>
- Pearce, F (2016) 'Common Ground. Securing land rights and safeguarding the Earth'. Oxford: Oxfam, International Land Coalition, Rights and Resources Initiative. Available at: <https://policy-practice.oxfam.org.uk/publications/common-ground-securing-land-rights-and-safeguarding-the-earth-600459>



Target 15: 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 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Key messages

- The lands, territories and forests of IPLCs play a vital role in maintaining global carbon stocks, in building ecosystem resilience, and in mitigating and adapting to climate change. Yet they continue to be destroyed and degraded by external interventions.
- IPLCs around the world are working to safeguard and restore their lands, in many cases based on territorial defence and on their traditional knowledge and customary systems of sustainable resource use.
- However, IPLC contributions require much greater recognition and support, and safeguarding measures need to be improved to reduce the impacts of climate change on them and to enable them to upscale their contributions to this target.

Significance of Target 15 for IPLCs

“The Ts’msyen Nation in Northern British Columbia is currently experiencing the effects of climate change and industrial development within our region. Rain patterns are shifting, drought is occurring, ocean temperatures are rising, and industry threatens our way of life and the coastal ecosystem every single day. Support is required from all sectors and government to safeguard our way of life and to

help Indigenous peoples and communities mobilize to advance the clean-energy, net-zero-carbon sustainable future that is desperately needed to keep global temperature rises below 1.5°C.”

— Braden Etzerza, Metlakatla First Nation

IPLCs around the world are already experiencing serious effects of climate change, especially those who depend directly on the local environment for their daily needs; this Target 15 is, therefore, of particular concern to them. They are in a good position to contribute to the maintenance and restoration of ecosystems because of their intimate relationship with their lands and resources,⁽²⁶⁵⁾ but harmful subsidies, inappropriate development policies, and continued lack of recognition of customary land rights in many countries means that they are still struggling to maintain forests and ecosystems against large-scale environmental destruction by external actors.⁽²⁶⁶⁾ Indigenous and local knowledge is particularly valuable in ecological restoration and resilience building, but it continues to be undervalued, and is still often neglected in ecological restoration programmes.⁽²⁶⁷⁾ Overall, IPLC contributions and concerns related to Target 15 are still under-recognised, on the ground and in relevant policy forums.⁽²⁶⁸⁾

Contributions and experiences of IPLCs towards Target 15

“I want to be a good ancestor. Indigenous Peoples’ commitments to climate action ensure that we are thinking of the seven generations to come.”⁽²⁶⁹⁾

— Chief Howard Thompson, Haudenosaunee

IPLCs play a crucial role in maintaining the health of ecosystems on their lands, and their actions contribute significantly to global ecosystem resilience. Globally, at least 22 per cent (218 gigatons) of all carbon in tropical and sub-tropical forests (including above- and below-ground) is stored in the collective forestlands of IPLCs, and at least a third of this carbon lies in areas where IPLC land tenure is not formally recognised.⁽²⁷⁰⁾ Community lands commonly experience lower rates of deforestation and forest carbon emissions than other areas, and maintain higher levels of biodiversity, resulting in more resilient landscapes.⁽²⁷¹⁾ This is due in part to the greater sustainability of customary natural resource management systems based on traditional knowledge, such as those for enriching soil and managing fire,⁽²⁷²⁾ in comparison to more intensive forms of use.

As fires swept through many parts of Australia at the end of 2019 and beginning of 2020, releasing at least 409,700,000 metric tonnes of carbon dioxide⁽²⁷³⁾—more than half of the country’s carbon emissions for the entire year of 2018—various scientists and policymakers called for a revitalisation of Aboriginal fire management systems⁽²⁷⁴⁾ to rebuild ecosystem resilience and avoid similar carbon-releasing disasters in the future. By comparison, the 2019 Brazilian Amazon fires emitted 392,000,000 metric tonnes of carbon dioxide. The Australian bushfires burned more than six million hectares, including national park forests, with smoke reaching as far as Argentina;⁽²⁷⁵⁾ the fires devastated many communities and killed an estimated 480 million animals.⁽²⁷⁶⁾

“States must understand that we are the guardians of these territories, of our mother Earth, just as the Amazon forest and other ecosystems in which we live are the hope of the planet. We indigenous women and youths are on the front line defending the rights of indigenous peoples, and now we are facing climate change in our territories and we can provide solutions to this global concern and bring it to all the spaces for political advocacy.”

— Rayanna Maximo Franca, indigenous youth of the Baré people, Indigenous Youth Network of Brazil

Communities are also working actively to restore and reforest degraded environments. Three different examples are featured in this chapter: in Colombia, indigenous peoples are planting trees, cleaning up water sources, and improving waste management (Box 34); in Antigua and Barbuda, the Barnes Hill community has been restoring an abandoned community reservoir and the surrounding environment (Box 35); in Galicia, in Spain (Box 36), a legal mechanism based on traditional systems of communal land tenure has enabled the Froxán community and others to regain control of their lands and work to restore the degraded environment.

Héctor Jaime Vinasco taking part in community reforestation efforts. Credit: ROMLP.



Case study: Restoring and reforesting the Cañamomo Lomaprieta Indigenous Resguardo, Colombia

The Cañamomo Lomaprieta Indigenous Resguardo^(xii) in Colombia was created by a royal warrant issued by Carlos I of Spain in 1540. It covers 4,837 hectares and involves 32 communities. The history of Cañamomo Lomaprieta has been concerned largely with territorial defence; its rich gold deposits motivated the conquistadores to found villages within the indigenous territory, and it became a centre for slavery. The indigenous inhabitants were exploited almost to the point of extermination.

In spite of this history, the indigenous community has maintained its ancestral community traditions of respect, care, and balanced management of its relationship with Mother Earth. These practices are now being changed by state economic production schemes and by pressures on forest areas for cultivation. These and many other factors have affected the natural balance, and this means that, today, new policies and thinking are needed that focus on un-learning harmful practices and on environmental and agro-ecological thinking. It is still possible to recover, protect and conserve our environment, but for this to happen we must strengthen local people's sense of care for our natural heritage and develop an environmental management plan that will allow us to maintain healthy surroundings.

Our entire organisation, our authorities and our community members have concentrated our efforts, and will continue to do so, on environmental restoration within the territory. To this end, a strategic plan is being developed focusing on seven areas: water, solid waste management, risk management, environmental education, biodiversity, climate change and mining.

Our activities to date have included:

- Holding environmental workdays and running a Plant a Tree for the Resguardo campaign, which has involved community tree nurseries and the planting of 61,000 trees;
- Establishing living fences and maintenance of an inert fence;
- Managing wild species of flora and fauna and creating a nursery for local species;
- Analysing domestic wastewater and its decontamination;
- Running an *I don't take garbage to my house* campaign focusing on proper management of waste, recovery of forest strips, and maintenance of tree plantations;
- Creating an Environmental Council and an Environmental Recovery Association;
- Developing an environmental education policy and a natural heritage programme;
- Strengthening our organisation.

Box 34: Héctor Jaime Vinasco, Governing Council of the Resguardo Cañamomo

xii. *Resguardos indígenas* are 'the collective property of the indigenous communities for which they are established and ... are inalienable, imprescriptible and unseizable.' Source: Colombian Ministry of the Interior (2013) *Resguardo Indígena*. Available at: <https://www.mininterior.gov.co/content/resguardo-indigena>



● Sharing information on plants near the Barnes Hill community reservoir, Antigua and Barbuda. Credit: Timothy Payne.

These actions have been carried out without external financing. We are strengthening the social fabric of our community, creating intergenerational unity, and involving both women and men. We are carrying out these actions in the context of conflict, hate speeches and threats against our indigenous leaders, to better defend our territory. Our actions are a hope—a light amid a chaotic and turbulent world of armed conflict.

Case study: Addressing drought through revival of a historic reservoir; Barnes Hill Community, Antigua and Barbuda

The people of Barnes Hill community are working together to restore their community reservoir, which was built in the 1890s to provide the village with fresh water in times of drought but had fallen into disuse and disrepair. Water shortages during a recent four-year drought led to serious impacts, not only on plants and animals but also on human health and sanitation. The village nurse documented illnesses at the clinic that were directly related to a lack of water for basic needs. The drought and the need for water brought the people together to seek solutions, and in 2015 this led to the formation of the Barnes Hill Community Development Organization.

Since the project began, the villagers have cleared out the mud and debris that had accumulated in the reservoir over many years, and have controlled invasive species, including coralita vines (*Antigonon leptopus*). Most of the original structure for the reservoir was still present and villagers are repairing the walls and other features, and will add a new roof. There is also a plan to build a second reservoir, because the community has grown significantly since the original reservoir was built and it is not large enough now to supply the whole community during severe droughts. This expansion has been made possible because of a gift of land, which means that the site has grown from two to seven acres.

The BHCDO is also working more broadly to develop the area as a heritage site, with green spaces and historical trails. The vision is to revive and restore the community's culture, environment and identity, and to build new sources of sustainable livelihoods, especially for women, through community-based tourism. A natural resource inventory is ongoing, archival information is being matched with features found on the site, and older members of the community are sharing their knowledge and experiences with youths to better connect them with the past. The BHCDO has written to the Cabinet proposing the creation of a new cultural and heritage site, which would provide legal protection for the site, and which would continue to be managed by the community.

The effective management of this site rests on strong partnerships based on the passion, commitment and connectedness of the people involved. This initiative has motivated other community groups to mount actions and find community solutions, based on respect for our local biodiversity and heritage and a vision of living in harmony with our natural environment.

Box 35: Leonard Philip,
Barnes Hill Community
Development Organization

Box 36: Joám Evans Pim, Froxán Common Lands Community

Restoring the woodland at Froxán Common
Lands Community, Spain. Credit: Verdegaia.



Case study: Climate change adaptation; Restoring community common lands in Galicia, Spain

Monte veciñal en man común (community common lands) is a legal mechanism in Galicia, Spain, recognising communal land tenure. It is based on traditional customary systems that recognised community rights and obligations under the ancient feudal tenure system. During the mid-20th century, these systems were undermined in favour of commercial forestry and mining, resulting in severe environmental degradation and restricted community access to their lands. The legal designation has allowed many communities to regain control of their lands and start to restore the degraded environment since the 1970s. This land tenure designation now covers more than 700,000 hectares in Galicia and involves almost 3,000 local communities.⁽²⁷⁷⁾

One example is the Froxán Common,⁽²⁷⁸⁾ which is an area of common land covering 100 hectares (one square kilometre) under the care of families in Froxán (or Frojám), a village in the municipality of Lousame. The area was recognised as *monte veciñal en man común* in 1977, after the entire Froxán community signed a petition to the Civil Governor demanding devolution of their common lands.

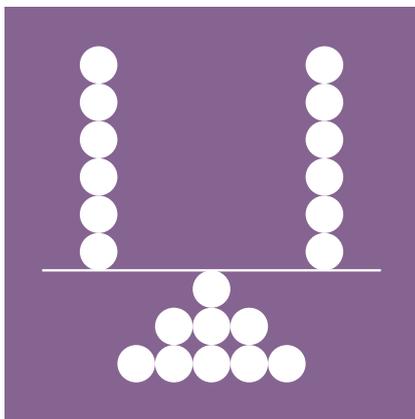
The Froxán community commenced restoration in the 1990s, and initially these efforts included filling in abandoned mine pits and shafts that had been created by mining companies. Since 2002, when the community regained full management over their lands, they have also been working to restore natural habitats, eradicate exotic invasive species, and restore a degraded wetland. A management plan for the wetland was selected in 2018 as one of four pilot case studies of initiatives for climate change adaptation. The community collectively self-manages its own water supply system, and the wetland restoration is perceived as critical to regulation of hydrological systems in the context of a new pattern of prolonged droughts. One positive outcome is that natural springs immediately downhill from the area, from which water is collected, are being restored.

Opportunities and recommended actions

- IPLCs should continue to implement and strengthen community-based approaches and activities for socio-ecological resilience and restoration.
- Governments and relevant actors should increase recognition and support for local community actions for ecosystem protection, restoration and resilience-building, including agroforestry, agroecology and traditional fire management systems.
- Governments and relevant actors should fully recognise the significance and role of indigenous and local knowledge in ecological restoration.
- Governments and donor agencies should upscale climate funds for IPLC actions related to resilience, restoration and carbon storage, and enhance mechanisms to make funds easily available, on an equitable basis.

Key resources

- Rights and Resources Initiative et al. (2018) 'A global baseline of carbon storage in collective lands'. Rights and Resources Initiative: Washington D.C. Available at: <https://rightsandresources.org/en/publication/globalcarbonbaseline2018/>
- Indigenous Peoples' Major Group for Sustainable Development (2019) *Inclusion, equality, and empowerment to achieve sustainable development: Realities of indigenous peoples*. Baguio City and San Francisco: Indigenous Peoples' Major Group for Sustainable Development. Available at: <https://www.indigenouspeoples-sdg.org/index.php/english/all-resources/ipmg-position-papers-and-publications/ipmg-reports/global-reports/124-inclusion-equality-and-empowerment-to-achieve-sustainable-development-realities-of-indigenous-peoples/file>
- Uprety, Y., Asselin, H., Bergeron, Y., Doyon, F. and Boucher, J-F. (2012) 'Contribution of traditional knowledge to ecological restoration: practices and applications', *Ecoscience* 19, pp. 225–37.
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Target 16: Nagoya Protocol in force and operational

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 messages

- National implementation of the Nagoya Protocol remains challenging, including the fostering of full and effective participation of IPLCs.
- Adopting a human-rights-based approach to access and benefit-sharing, and embedding the Nagoya Protocol within a holistic post-2020 global biodiversity framework, will bring new opportunities for multiple benefit-sharing arrangements with IPLCs.
- Applying innovative approaches—such as benefit-sharing arising from the use of biological resources and bio-trade—and respecting and enacting legal recognition for diverse community protocols and customary law, opens up potential for increased partnerships between governments, the private sector and IPLCs.

A farmer harvesting rooibos. Credit: Natural Justice.





A family taking a herbal bath. The bath is prepared by boiling leaves, plants and tree bark to create a traditional bath with medicinal properties and a pleasant aroma. The stem of black cardamom (thao qua) is also used in the preparation. Credit: Ian Teh.

Significance of Target 16 for IPLCs

Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts.

They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.

In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.

— UN Declaration on the Rights of Indigenous Peoples

The Nagoya Protocol goes further than the CBD in spelling out the rights of IPLCs to fair and equitable benefit-sharing, based on mutually agreed terms, arising from the utilisation of genetic resources held by IPLCs and their associated traditional knowledge. The protocol specifies that this includes:

- Rights to prior informed consent, when traditional knowledge associated with genetic resources, is accessed;

- Rights to have their customary laws, community protocols and procedures be taken into account by Parties when implementing their obligations under the protocol;
- Rights to non-restriction of their customary use and exchange of genetic resources and associated traditional knowledge.

The distinct role and contributions of women in access and benefit-sharing processes is also recognised.

IPLCs are responsible for considerable plant and animal biological and genetic diversity. However, implementation of all these provisions leave much to the discretion of governments regarding national legal, policy and administrative arrangements, and how to implement the Nagoya Protocol.

Experience with national implementation reveals a wide latitude of opportunities and risks, with potential outcomes strongly dependent on the meaningful participation of IPLCs in the national operationalisation and implementation of the Nagoya Protocol.⁽²⁷⁹⁾ A national policy framework grounded on a human-rights-based approach to access and benefit-sharing, consistent with international law and respectful of customary norms, provides a strong foundation for realising the benefits for IPLCs as envisioned in the Nagoya Protocol.⁽²⁸⁰⁾

Challenges faced in implementing the Nagoya Protocol

To date, implementation of the Nagoya Protocol has been limited, including the provisions directly relating to IPLCs and where IPLCs have established rights over genetic resources. The COP-MOP decision adopted by the Parties to the Nagoya Protocol identified priorities and practical challenges with respect to IPLCs, including: determining how the concept of *indigenous peoples and local communities* applies at the national level; clarifying the rights of indigenous peoples and local communities over genetic resources and/or traditional knowledge associated with genetic resources; identifying the different groups of indigenous peoples and local communities; understanding the way they are organised; and linking traditional knowledge with the holder(s) of such knowledge.⁽²⁸¹⁾

The following possible actions were identified: build capacity of Parties and IPLCs with respect to issues of access and benefit-sharing; build on the relevant work of the Working Group on Article 8(j) on the concept of indigenous peoples and local communities; establish national mechanisms for the participation of IPLCs; support coordination and institution building within and among indigenous peoples and local communities to address issues of access and benefit-sharing, including through the development of community protocols; and build capacity to support IPLCs in developing minimum requirements for mutually agreed terms and model contractual clauses for benefit-sharing.

Many of the above-mentioned challenges were carefully addressed by the Rooibos Benefit-Sharing Agreement (see Box 37), which shows how enabling conditions can be put in place, with lessons applicable way beyond the experience of southern Africa.

Box 37

Selling rooibos tea produced by the Khoi-San.
Credit: Ivan Vaalbooi.



Case study: The Rooibos Benefit-Sharing Agreement; Breaking new ground with respect, honesty, fairness, and care, South Africa

This is the abstract of a 2019 article by Schroeder et al. published in the *Cambridge Quarterly of Healthcare Ethics*.⁽²⁸²⁾

‘The Convention on Biological Diversity (CBD) and its 2010 Nagoya Protocol brought about a breakthrough in global policy making. They combined a concern for the environment with a commitment to resolving longstanding human injustices regarding access to, and use of biological resources. In particular, the traditional knowledge of indigenous communities was no longer going to be exploited without fair benefit sharing. Yet, for 25 years after the adoption of the CBD, there were no major benefit sharing agreements that led to significant funding streams for indigenous communities. This changed with the signing of the Rooibos Benefit Sharing Agreement in South Africa. As the authors report, the Rooibos Agreement is a superlative in two respects. It is the biggest benefit sharing agreement between industry and indigenous peoples to date. It is also the first *industry-wide* agreement to be formed in accordance with biodiversity legislation. This article is a co-production between traditional knowledge holders, the lawyer who represented their interests, the Co-Chair of the Nagoya Protocol negotiations, and an ethicist who analysed the major challenges of this historic agreement. With no precedent in the benefit sharing world, the agreement stands as a concrete example of the *art of the possible*. Although the rooibos case is unique in a number of aspects, the experience offers many transferable insights, including: patience; incrementalism; honesty; trust; genuine dialogue; strong legal support; a shared recognition that a fair, win-win deal is possible; government leadership; and unity amongst indigenous peoples. Such ingredients of success can apply well beyond southern Africa.’

Contributions and experiences of IPLCs towards Target 16

Experiences from Sri Lanka (see Box 38) and Kenya (see Box 39) demonstrate how IPLCs are using community protocols to reconcile modern legal and institutional systems with customary law systems and procedures in addressing priority concerns in their countries and communities.

Box 38: Association of Traditional Healers for Treatment of Venom Bites and Nirmanee Development Foundation

The Bio-Cultural Protocol highlights the important connections between people and biodiversity in the Kegalle District. Credit: Nuwan Liyanage.



Case study: Bio-cultural protocol of the traditional healers of snake bite, Sri Lanka

The bio-cultural protocol of the Native Healers of the Kegalle District in the Sabaragamuwa Province of Sri Lanka is a comprehensive document covering the intergenerational heritage, traditional medicinal knowledge, their acquaintance with serpents and other animals, and extraordinary treatment methods and varieties of medicine. It describes the unity of nature and the culture, beliefs, values and lifestyles affecting the protection of biodiversity, as well as challenges currently faced by traditional healers, as described in the short, edited excerpt below.

The challenges we face

- Difficulty in obtaining required medicine
- Impact on the registration of a native healer due to the laws introduced during the colonial era
- Destruction of medicinal plants due to the expansion of commercial plantations
- Restrictions imposed on entering a forest area
- The ban imposed on planting essential medicinal plants; for example, kansa
- Demeaning of the native practitioners due to pressure exerted by western medical authorities
- No recognition of native medicines within our education system

- The addition of chemicals to the medicinal plants is affecting the quality of the medicine
- The manipulation of genes of trees is affecting the quality of medicinal plants.

Threats from multi-national companies

- Indigenous medical practice is being suppressed by an authoritative market controlled by the western medical system.
- Programmes are made to undermine the native medical system, labelling it as primitive.
- Preferential government assistance is given to Indian Ayurveda, Chinese acupuncture and homeopathy systems.
- The government has minimum concern for protecting the native medical system, and the benefits are not being passed on to the lowest level.

The Integration Process of Social Protocols

We are bound to follow the main principle in the conservation of our biological diversity and medicinal plants. At the same time, the right of the citizen who uses the biological assets is also to be protected. In development of local knowledge, and in giving benefits to locals, we expect to work in collaboration with the Sri Lanka Biodiversity Secretariat, educational institutes and other relevant associations.

Our requests

In accordance with the Treaty (CBD), we request assistance from the government to:

- Utilise folk treaties on the equitable and fair sharing of the benefits accrued from genetic assets and traditional activities;
- Not complicate co-operation agreements;
- Formulate model agreements for sharing benefits.

Our main requirements

- Be educated on finding markets for our products.
- Be educated on finding technology for new production processes.
- Implementation of development programmes for managing bio-assets.

Sri Lanka's national biodiversity strategies and action plans recognise community biocultural protocols as a conservation tool, and the government is in the process of legally recognising these protocols within a national process towards the adoption and operationalisation of the Nagoya Protocol.



● Flamingoes on Lake Bogoria. Credit: Gudkov Andrey.

Case study: The making of the Endorois people's bio-cultural protocol, Kenya

The Endorois community live around the shores of Lake Bogoria and other parts of Baringo County, and in Nakuru and Laikipia counties within the Rift Valley of Kenya. We regard Mochongoi Forest and Lake Bogoria as sacred grounds and use them for key cultural and religious ceremonies. The community have been evicted several times from their ancestral home, and their 1973 eviction culminated in the gazet-ting of Lake Bogoria as a national reserve. The community filed a claim with the African Commission on Human and Peoples' Rights and suc-ceeded against the Government of Kenya when orders for restitution and compensation were made in 2010.

The community boasts of many natural resources, including medicinal trees and aloe vera; and an alkaline lake, Lake Bogoria, which hosts hot springs, flamingos, and algae that are extremely valuable for local, domestic and commercial use. The lake is also a source of tourism revenue and is managed under the Lake Bogoria Management Plan which provides for joint management of this important resource by the community and the Baringo County Government.

Having lost valuable resources in the past, the Endorois learnt to or-ganise themselves as a community to be able to determine matters of access and benefit-sharing relating to their resources, over and above the mechanisms that have been put in place by the national govern-ment. The community developed their own protocol with a view to articulating community-determined values, procedures and priorities under customary, state and international law as the basis for engaging with external actors such as governments, academia and other parties. The three-year process of development of the protocol, data collec-tion and drafting took a lot of back and forth, with the community being in charge of the content and Natural Justice, a non-profit organ-isation, providing technical advice.

The protocol goes beyond defining who we are, our culture, ways of life, food, social organisation, and relations with our resources. It an-ticipates processes that the community needs to engage in to ensure protection and conservation of our resources such that impact as-sessment processes, the government policy, planning, decision mak-ing, budgeting, resource allocation, monitoring and compliance pro-cesses take into account the community's needs. Awareness creation, the modes of resource mobilisation and dispute resolution were also addressed. The protocol is also a schedule to the Lake Bogoria Man-agement Plan, giving it legal force as part of the wider management strategy for the community resources and the lake.

The protocol outlines the community's specific challenges, threats and opportunities with specific calls to both the county and nation-al governments to act. The community's expectations include: due recognition of the community; acknowledgment of the community role in protection and conservation of biological resources; improved community cohesion; more inclusive decision making; more apprecia-tion and awareness of what the community owns; and equitable bene-fit-sharing with the community.

Box 39: Cicilia Githaiga, Programme Manager Traditional Knowledge and Benefit Sharing and Conservation and Customary Use Programmes at Natural Justice, and Eric K. Kimalit, Chair of the Board of the Endorois Welfare Council

Community protocols are usually holistic and focused on the priorities and concerns of IPLCs based on their needs in specific localities and contexts. Applying innovative, rights-based approaches to benefit-sharing, with legal recognition of diverse community protocols and of customary law, opens potential for increased partnerships between governments, the private sector and IPLCs. Learning from several examples of community protocols developed in Africa, and drawing lessons from them, researchers offer the following conclusions about implementing access and benefit-sharing in Africa:

‘... the implementation of ABS [access and benefit-sharing] is made much more meaningful for communities if it takes a broad and strategic view: by giving communities rights over their genetic resources, including obligations for national users in their national ABS frameworks, and linking ABS with biotrade and with options for local and national valorization. From a community perspective, the distinctions of what constitutes utilization in the narrow sense of the Nagoya Protocol, and the separation of traditional knowledge from the use of the resources that it is associated with, can be very artificial.’⁽²⁸³⁾

Embedding the Nagoya Protocol within the post-2020 global biodiversity framework opens the opportunity to maximise benefit-sharing arrangements with IPLCs through synergies with other global instruments such as farmers’ rights under the *International Treaty on Plant Genetic Resources for Food and Agriculture*, the Bio Trade Initiative of the UN Conference on Trade and Development, and the UN Sustainable Development Goals, underpinned by a human-rights-based approach, and leaving no one behind.

Opportunities and recommended actions

IPLCs can strengthen their capacity for engaging in access and benefit-sharing arrangements by:

- Identifying community representation and competent authorities;
- Developing processes for agreeing community by-laws and/or community protocols;
- Studying and engaging with national and regional policy and legislative processes, such as the *African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa*;
- Seeking legal and technical advice about negotiating with third parties;
- Strengthening community-based monitoring, including participation in national and regional checkpoints.

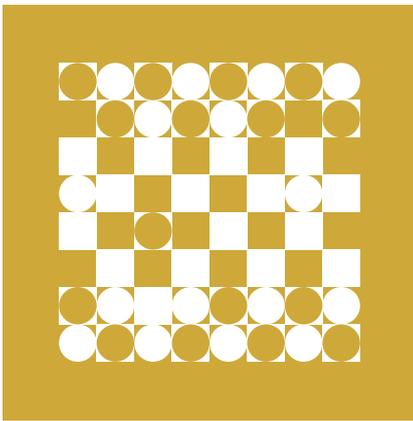
All users of biological resources and associated traditional knowledge should be informed about and open to negotiate with IPLCs access and benefit-sharing agreements, while conforming with community protocols and national regulations.

Governments, in partnership with IPLCs, should adopt broad-based policy, legal frameworks and guidance consistent with their multiple international obligations, including recognition of IPLC traditional resource rights and associated traditional knowledge. This includes:

- Recognising the rights of IPLCs to their lands, territories and resources and associated traditional knowledge, and ensuring full and effective participation of IPLCs in national processes on access and benefit-sharing;
- Putting in place mechanisms to facilitate equitable benefit-sharing arrangements between IPLCs and users of biological resources and associated traditional knowledge, including access to legal expertise and mediation at all levels in the partnership with IPLCs;
- Agreeing structural, process and outcome indicators to monitor the implementation of the Nagoya Protocol consistent with other global instruments that promote benefit-sharing with IPLCs;
- Promoting legal pluralism and interfaces between local, national and international law, including respect and recognition of community protocols, customary law and customary institutions of indigenous peoples, consistent with the UN Declaration on the Rights of Indigenous Peoples and the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas.

Key resources

- Convention on Biological Diversity (2018) *Assessment and review of the effectiveness of the protocol (Article 31)*. Decision adopted by the parties to the Nagoya Protocol on access and benefit sharing 3/1. CBD/NP/MOP/DEC/3/1. Montreal: Convention on Biological Diversity.
- Tobin, B.M. (2013) 'Bridging the Nagoya compliance gap: The fundamental role of customary law in protection of indigenous peoples' resource and knowledge rights'. *Law, Environment and Development Journal* 9(2).
- Lassen, B., Jansen, L., Rasolojaona, J., Githaiga, C., Fey, L. and Bossou, B. (2018) *Community protocols in Africa: Lessons learned for ABS Implementation*. Natural Justice and the ABS Capacity Development Initiative. Available at: https://naturaljustice.org/wp-content/uploads/2018/11/2018_Community-Protocols-in-Africa_Lessons-Learned_Natural-Justice.pdf
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- Schroeder, D., Chennells, R., Louw, C., Snyders, L., and Hodges, T. (2019). 'The Rooibos Benefit Sharing Agreement—breaking new ground with respect, honesty, fairness, and care'. *Cambridge Quarterly of Healthcare Ethics* 29(2), pp. 285–301.



Target 17: 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 messages

- The role and contributions of IPLCs in maintaining biodiversity and healthy ecosystems is poorly recognised in most national biodiversity strategy and action plans (NBSAPs) and national targets, a major missed opportunity by Parties.
- Appropriate institutional and financial mechanisms to foster the full and effective participation of IPLCs in the development, implementation and monitoring of biodiversity strategies and action plans—both community-based and national—is essential to ensure effective post-2020 progress at national, regional and global scales.

Significance of Target 17 for IPLCs

Target 17 is important for IPLCs because their full and effective participation in the development and implementation of NBSAPs and in national reporting will ensure that they can fully engage in decision-making about biodiversity. This will become even more important beyond 2020 because NBSAPs will need to be aligned with the UN Sustainable Development Goals (SDGs) and the Paris Agreement on climate change.

The fifth edition of the *Global Biodiversity Outlook (GBO-5)* concludes that: ‘Since 2010, 97 percent of Parties have now submitted at least one NBSAP, and 155 have taken the Strategic Plan on Biodiversity (2011-2020) into account. Most national targets included in NBSAPs align with the Aichi Biodiversity Targets, but the level of ambition varies, and the collective ambition of national targets does not add up to the global ambitions of the Strategic Plan’.⁽²⁸⁴⁾

Based on a review of NBSAPs submitted so far, the Secretariat of the CBD concludes that: ‘The Strategic Plan reinforced the importance of NBSAPs for national biodiversity planning, building on guidance adopted earlier, and em-



A community workshop on natural resources at Salapoumbe, Mambéle, Cameroon. Credit: Viola Belohrad.

phasing that NBSAPs should be adopted as a whole-of-government policy instrument. However, few countries have done so, undermining their effectiveness in addressing other sectors and weakening the level of implementation of NBSAPs.⁽²⁸⁵⁾

In addition to the lack of ambition and the lack of adoption of NBSAPs as whole-of-government policy instruments, the recognition of IPLC roles and contributions is poorly understood. The *GBO-5* summary for policymakers concludes despite the importance of indigenous peoples and local communities as custodians of extensive lands, freshwater and marine resources in all regions, their role is poorly recognized in the majority of NBSAPs and national targets, with some notable exceptions.⁽²⁸⁶⁾ The Secretariat of the CBD also states: ‘It should be noted that there is very limited information from which progress on implementation can be assessed for a number of Aichi Biodiversity Targets, such as Target 14, (Ecosystem services) and Target 18 (Traditional knowledge)’.⁽²⁸⁷⁾ As Targets 14 and 18 are particularly relevant for IPLCs, it is worrying that Parties have paid insufficient attention to them. In the wider picture, ignoring the contributions of IPLCs to all Aichi Biodiversity Targets should be considered as one of the Parties’ greatest missed opportunities in trying to achieve the goals of the CBD.

An initial analysis of the 150 sixth national reports submitted by March 2020 reveals that 16 reports (10.7 per cent) mention the engagement of IPLCs in NBSAP processes and 89 reports (59.3 per cent) mention the participation of IPLCs on matters related to biodiversity in general terms.⁽²⁸⁸⁾ While there has been some improvement in national reports mentioning IPLCs since *LBO-1* was published in 2016, no progress has been identified in the participation of IPLCs in NBSAP processes. *GBO-5* states that only 40 Parties reported that IPLCs were involved in the revision of NBSAPs.⁽²⁸⁹⁾ There is still much to do to make NBSAPs truly participatory.

Gender is also an important aspect to consider in NBSAPs. Reviews have found that only 76 NBSAPs (less than half) refer to gender and women;⁽²⁹⁰⁾ this represents missed opportunities to integrate gender into biodiversity policy, with likely missed opportunities in programming.⁽²⁹¹⁾ The 2015-2020 Gender Plan of Action under the CBD includes mainstreaming gender in NBSAPs as an objective for Parties. This will need more attention in the next round of NBSAPs.

“My world is of many colours, it has no price or borders, it is a simple world, of listening and knowledge. Indigenous women participate in the construction of the National Biodiversity Strategy because it is an opportunity to recover Mother Earth, our life and the ecosystems that we have used ancestrally.”

— Ms Doris Ríos Ríos, Cabécar leader of the territory of China Kichá, Costa Rica

Contributions and experiences of IPLCs towards Target 17

IPLCs are increasing their contributions to achieving this target in many ways, but particularly by advocating for improved participatory mechanisms in the development and implementation of NBSAPs, and in national reporting; by engaging in NBSAPs where possible; and by developing and implementing their own local biodiversity plans.

Advocating for, and engaging in, improved participatory mechanisms

Box 40: Donald Rojas Maroto, Brunca Indigenous People and President of the National Indigenous Bureau, Costa Rica

A Térraba leader at a NBSAP workshop in Costa Rica. Credit: Alejandra Loria Martínez, Focal Point for Article 8(j), Costa Rica.



Case study: Indigenous peoples participate in NBSAP processes in Costa Rica

In September 2015, Costa Rica made its National Biodiversity Policy 2015–2030 official by means of Executive Decree No. 39118-MINAE. This established a national path towards improved conservation and sustainable use of biodiversity, as well as fair and equitable sharing of the benefits arising from the utilisation of resources. In 2016, Costa Rica also approved its second national biodiversity strategy, which covers the period 2016–2025. This strategy is related to Costa Rica’s Biodiversity Law No.7788 of 1998. The law embraces the three objectives of the CBD and explicitly includes indigenous participation.

Many participation processes for indigenous peoples were developed, thanks to indigenous advocacy and the openness of the Ministry of Environment and Energy, with the help of the National Commission for Biodiversity Management and the facilitation of the National Indigenous Board of Costa Rica. Of great importance is the fact that these processes included the participation of youths, adults, elderly women and men, and leaders from many community organisations, including traditional authorities and integrated indigenous development associations. The processes included cultural, environmental, economic and agricultural issues, as well as issues related to crafts, ecotourism, healthcare, water and education. They have also opened up participation in many other spaces. In addition, territorial, regional and national workshops have been held, with contributions and recommendations based on different indigenous *cosmovisions*, in order to develop both the national biodiversity policy and the second national biodiversity strategy. The results of the participatory processes were returned to indigenous peoples during specific territorial and regional workshops.

In this way, Indigenous peoples have been able to make contributions and recommendations for the main points, objectives and guidelines of the national biodiversity policy. The policy's vision includes indigenous peoples explicitly. Similarly, indigenous recommendations for guidelines, actions and 57 programme and project proposals were provided for the second national biodiversity strategy. In addition, 13 proposals were prioritised and government institutions that could potentially be responsible for their implementation were identified.

The second national biodiversity strategy consists of 98 goals. Indigenous proposals contributed to 38 of those goals, which address, among other issues: the use and management of biodiversity; the governance of protected areas; traditional knowledge; indigenous participation; benefit-sharing and strengthening of indigenous economies through the development of tourism; payments for environmental services; and the marketing of agricultural products. Dialogues with public institutions have now started for the implementation of these goals. In particular, work on Goal 63 has been progressing, with regard to the productive and economic development of indigenous territories through tourism activities related to biodiversity. Important discussions and proposals related to *sui generis* community rights and traditional knowledge have also taken place.

The Government of Antigua and Barbuda has taken positive steps to improve participation of local communities in the NBSAP process. In their sixth national report, they stated:

‘Local groups were trained through workshops organized by international entities, such as the regional Capacity Building Workshop for the Caribbean Region on Traditional Knowledge and Customary Sustainable Use under the Convention on Biological Diversity in the year 2015. They also organized their own trainings for various communities with the creation of 15 community groups working on their own project documents with the support of GEF/SGP [Global Environment Facility's Small Grants Programme] as well as national projects with local buy-ins to promote sustainable activities. Additionally, revised NBSAPs undergo stakeholder review processes.’⁽²⁹²⁾



● Indigenous Day flotilla, part of the Break Free global protests against fossil fuels. Credit: John Duffy.

“Our contribution in a national dialogue led to our inclusion in Antigua and Barbuda’s 6th national report and has afforded us the opportunity to share information and knowledge. This has allowed us to contribute and communicate our experiences as an organization working on the ground to bring about environmental changes through the involvement with members of various communities, including waste pickers, many of whom are women who are severely impacted through their daily dealing with toxic and hazardous chemical products. We now see the value of data collection, monitoring and evaluation and will work toward the implementation and compliance with the CBD goals and the Vision of living in harmony with nature.”

— Hasani Williamson, Wills Recycling, Antigua and Barbuda

Local biodiversity plans

At the same time as participating in the development and implementation of NBSAPs, IPLCs also play a major role in producing and implementing their own local biodiversity plans, tailored to local cultures and circumstances. These plans can include various processes such as life plans (*planes de vida*), territorial management plans, community-based natural resource plans, and have much potential to contribute to the implementation of NBSAPs, though they are not yet fully considered in national reporting.

NBSAPs, along with other environmental and sustainable development policies, have huge potential to mobilise the collective action of IPLCs and wider society for transformations towards sustainability. However, this potential has so far not been harnessed. In fact, in most countries, IPLC contributions remain invisible in public policy, partly due to the lack of adequate data, statistics and information, and methods to generate data and indicators at the national and local level.

A fundamental pathway towards remedying this situation and harnessing the potential for collective action is through the consultation and participation of IPLCs, particularly women, across research-related matters; policy discussions; designing of legal frameworks; and decision-making on sustainable development, biodiversity and climate action. As the international community moves towards realising biodiversity objectives, the SDGs and the Paris Agreement on climate change, the urgency of ensuring that IPLCs are not left behind and of ensuring that they are empowered as partners to tackle global challenges, cannot be overstated.⁽²⁹³⁾

Some positive experiences of IPLCs participating in NBSAPs are emerging but, overall, this is far too limited. There is an urgent need to learn from these positive experiences and to replicate them, adapting to national and local circumstances.

As a first step, Parties and relevant organisations should implement the IPBES global assessment's recommendations to improve environmental governance and decision-making.⁽²⁹⁴⁾ These include improving localisation of planning by 'enabling locally tailored choices about conservation, restoration, sustainable use and development connectivity that account for uncertainty in environmental conditions and scenarios of climate change'. Recognising and supporting locally enabled diverse systems can radically improve NBSAPs, and biodiversity planning more broadly.

Also important is the recommendation for: '[i]mproving collaboration and participation among indigenous peoples and local communities, relevant stakeholders, policymakers and scientists to generate novel ways of conceptualizing and achieving transformative change towards sustainability.' This new approach to generating and understanding transformative change links to the Aichi Biodiversity Targets, especially those for Strategic Goal A on addressing the underlying causes of biodiversity loss, and to the changes sought in the post-2020 biodiversity framework, and highlights in particular how IPLCs can contribute to understanding and realising a different future.



● Participating in a community planning meeting in Dioula, Mambele, Cameroon. Credit: Viola Belohrad.

Opportunities and recommended actions

- IPLCs should continue to develop and implement their own local biodiversity plans and pursue full and effective participation in NBSAPs, national reporting and related processes.
- Governments should establish effective mechanisms at the national and local level, including through culturally appropriate tools and suitable financial allocation, for the full and effective participation of IPLCs in all stages of NBSAPs, including development, implementation, monitoring, evaluation, revision and reporting.
- Governments and relevant actors should recognise existing local plans and support IPLCs to develop local plans related to biodiversity, climate change mitigation and adaptation, and sustainable development. Local biodiversity plans should be embedded in NBSAPs so that they are mutually reinforcing.
- Governments and relevant actors should promote and support gender-responsive NBSAP processes and gender-responsive biodiversity initiatives, building on the 2015–2020 Gender Plan of Action under the CBD.
- Governments and relevant actors should promote and facilitate partnerships and collaboration among all relevant rights-holders and stakeholders, particularly government agencies, IPLCs, women and youth, to leverage ownership of NBSAP processes and wide-scale action for their implementation (a whole-of-society and whole-of-government approach), in line with the IPBES global assessment’s recommendation on inclusive governance approaches.⁽²⁹⁵⁾
- Governments and relevant actors should promote the coherence of NBSAPs with relevant national and local processes, such as strategies for implementing SDGs, climate change commitments and other environmental treaties.

Key resources

- Convention on Biological Diversity (2020) *Global Biodiversity Outlook 5*. Montréal: CBD. Available at: <https://www.cbd.int/gbo5/>
- Dhir, R.K., Cattaneo, U., Ormaza, M.V.C., Coronado, H. and Oelz, M. (2020) *Implementing the ILO Indigenous and Tribal Peoples Convention No. 169: Towards an inclusive, sustainable and just future*. Geneva: International Labour Organization. Available at: https://www.ilo.org/global/publications/books/WCMS_735607/lang--en/index.htm



Target 18: 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 messages

- Aichi Biodiversity Target 18 has not been met. Ongoing disregard of the vital contributions of indigenous peoples and local communities (IPLCs) to biodiversity conservation and sustainable use constitutes a major missed opportunity for the United Nations Decade on Biodiversity 2011–2020.
- The traditional knowledge and customary sustainable use practices of IPLCs contribute to progress towards implementation of many Aichi Biodiversity Targets but their piecemeal treatment in national biodiversity strategies and action plans (NBSAPs) impedes the full power and potential of IPLC collective actions. This neglect has affected the under-achievement of all 20 Aichi Biodiversity Targets, with fundamental lessons remaining to be learnt about securing the future of nature and cultures.
- Some Parties to the Convention on Biological Diversity (CBD) have worked to address this gap, but without reference to the indicators that have been adopted to monitor progress and often without appropriate actions on the ground.
- This gap in implementation and reporting can best be bridged by strategic partnerships with IPLCs to empower them and to renew traditional knowledge and customary sustainable use.



Women making crafts at a workshop using wood from a community-managed forest near Hetauda, Nepal. Credit: Claire Bracegirdle.

Significance of Target 18 for IPLCs

The value of traditional knowledge and customary sustainable use in preventing and addressing biodiversity loss and environmental degradation is well established, and most recently and directly captured in the Summary for Policymakers of the 2019 *IPBES Global Assessment on Biodiversity and Ecosystem Services*:

‘Recognizing the knowledge, innovations, practices, institutions and values of indigenous peoples and local communities, and ensuring their inclusion and participation in environmental governance, often enhances their quality of life and the conservation, restoration and sustainable use of nature, which is relevant to broader society. Governance, including customary institutions and management systems and co-management regimes that involve indigenous peoples and local communities, can be an effective way to safeguard nature and its contributions to people by incorporating locally attuned management systems and indigenous and local knowledge. The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through national recognition of land tenure, access and resource rights in accordance with national legislation, the application of free, prior and informed consent, and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities.’⁽²⁹⁶⁾

Tracking progress

The four globally agreed indicators for Target 18 are:

- Trends of linguistic diversity and numbers of speakers of indigenous languages;
- Trends in land-use change and land tenure in the traditional territories of indigenous and local communities;
- Trends in the practice of traditional occupations;
- Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan.⁽²⁹⁷⁾

However, an initial analysis of the 150 sixth national reports submitted to and analysed by the Secretariat of the CBD by March 2020 shows that most of them failed to report specifically on these indicators (see Figure 5 and Figure 6).

Figure 5: Reporting on Target 18's four global indicators in the 150 sixth national reports submitted to the Secretariat of the CBD, March 2020

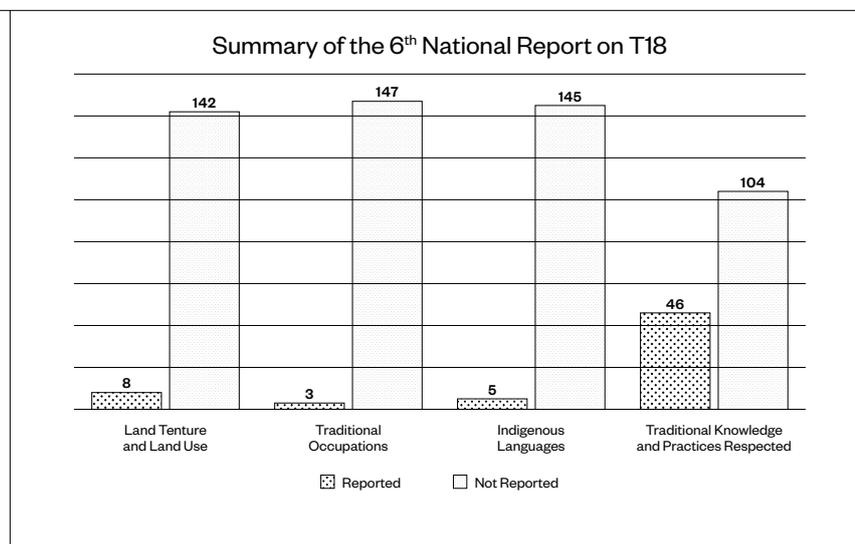
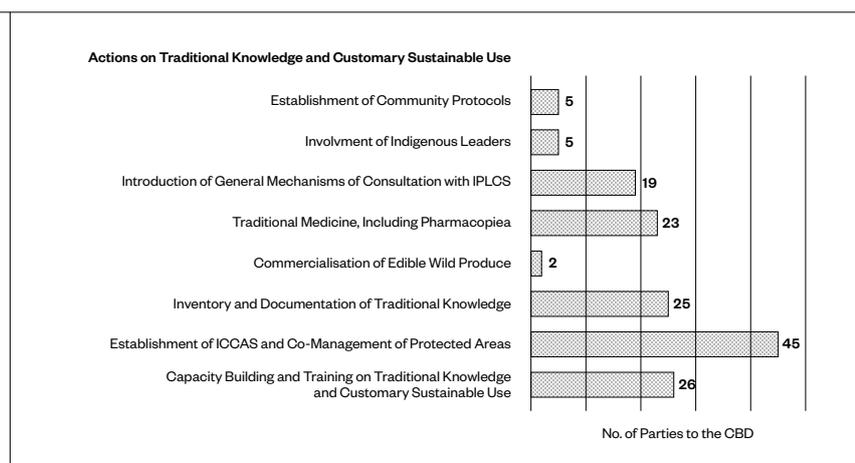


Figure 6: Actions on traditional knowledge and customary sustainable use, as reported by 150 Parties to the CBD in their sixth national reports to the CBD





Thus, as noted by the Secretariat of the CBD⁽²⁹⁸⁾ and the IPBES,⁽²⁹⁹⁾ (see also Table 1), there is insufficient information available to properly assess progress on Target 18. Monitoring of status and trends in the resilience, transmission and revitalisation of traditional knowledge and customary sustainable use is best carried out by IPLCs themselves, being the holders of and experts in their own knowledge. The lack of information highlights the challenge of establishing appropriate and systematic methods and processes to generate the data and evidence base for these indicators of traditional knowledge and customary sustainable use, which have been adopted by Parties of the CBD. Land-use change has been highlighted in the 2019 IPBES global assessment as a main driver of biodiversity loss and the associated loss of indigenous and local knowledge.⁽³⁰⁰⁾ Meanwhile, secure land tenure has been adopted as an indicator under the SDGs to address the eradication of poverty which disproportionately affects women and IPLCs.⁽³⁰¹⁾ Traditional knowledge and customary sustainable use (including their related indicators) as a cross-cutting thematic programme at the heart of negotiations and contestation between Parties to the CBD and IPLCs encompasses issues such as the legal recognition of their identity and customary tenure of lands and territories, and resource rights.

● An indigenous Shan woman teaches her granddaughter how to make a bamboo fan near Hsipaw, Shan State, Myanmar. Credit: Ray Waddington.

● Table 1: Progress towards the Aichi Biodiversity Targets

Goal	Target (abbreviated)	Progress towards elements of each target			
		Poor	Moderate	Good	Unknown
Drivers	1. Awareness		● ●		
	2. Planning & accounting	●	● ●		
	3. Incentives	● ●			
	4. Production & consumption	● ●			
Pressures	5. Habitat loss	● ●			
	6. Fisheries	● ●			●
	7. Agriculture & forestry	● ●	●		
	8. Pollution	● ●			
	9. Invasive alien species	● ●		●	●
	10. Coral reefs etc	● ●			
Status	11. Protected & conserved areas		● ● ● ●	● ●	
	12. Extinctions prevented	● ●			
	13. Genetic diversity		● ● ● ●		●
Benefits	14. Ecosystem services	●			●
	15. Ecosystem restoration				● ●
	16. Access & benefit sharing		●	●	
Implementation	17. Strategies & action plans		● ●	●	
	18. Indigenous & local knowledge		●		● ●
	19. Biodiversity science		●		●
	20. Financial resources		●		

Scores are based on a quantitative analysis of indicators, a systematic review of the literature, the fifth National Reports to the CBD, and the information available on countries' stated intentions to implement additional actions by 2020.

Progress towards target elements is scored as:

Good: Substantial positive trends at a global scale relating to most aspects of the element.

Moderate: The overall global trend is positive, but insubstantial or insufficient, or there may be substantial positive trends for some aspects of the element, but little or no progress for others; or the trends are positive in some geographic regions, but not in others.

Poor: Little or no progress towards the element or movement away from it; or, despite local, national or case-specific successes and positive trends for some aspects, the overall global trend shows little or negative progress.

Unknown: Insufficient information to score progress.

Source: *IPBES Global Assessment Report on Biodiversity and Ecosystem Services: Summary for Policymakers* (2019)⁽³⁰²⁾

More positively, overall, respect for diverse knowledge systems and methodologies has been increasing. This is reflected, for example, in the conceptual framework and the work programme of IPBES, and in the United Nations Development Programme's data ecosystem mapping initiative.⁽³⁰³⁾ However, such progressive developments in research and science are yet to be manifested in policy and practice at national and sub-national levels.

Contributions and experiences of IPLCs towards Target 18

IPLCs have undertaken numerous initiatives in relation to Target 18, and some of these are described below; for example, in Cameroon and Tanzania, they are monitoring land-use change and securing land tenure; in Japan and Vietnam, they are revitalising culture and language; and in Nicaragua and Hungary they are safeguarding and sustainably using species and ecosystems, and protecting and revitalising traditional occupations.

Negotiating for secure land tenure in Cameroon and Tanzania

In South Cameroon, the Baka communities of Bemba I and Bemba II embarked on a participatory mapping process to document their customary use of resources.⁽³⁰⁴⁾ The maps they have produced show how government permits for forest management units and licences for limestone exploration overlap considerably with their traditional hunting zones, sacred sites, and other areas essential to their customary sustainable use.

“We are not happy with the prospect of being evicted from our villages. Our way of life will be affected by this cement factory. But can a Baka man say no to the implementation of a project that has been decided by the government?”

— Ewondji Bruno, Chief of Bemba II

In July 2019, Bemba I and Bemba II, together with neighbouring communities, used their maps in a meeting with the local government, presenting the likely impacts of a cement factory on their lives. The maps had a significant impact on discussions, and the meeting concluded with an agreement that there needed to be further dialogue, to avoid potential negative impacts for forest communities.

Similarly, in Tanzania the 10,000-year-old hunter-gatherer tribe, the Hadzabe, are the first indigenous community to receive a Certificate of Customary Right of Occupancy in 2011. The certificate is provided for under the *Village Land Act* of 1999. This was a landmark achievement. The Hadzabe were able to gain leverage through a historic campaign coupled with an innovative carbon-offset scheme through REDD+, community monitoring and inclusive governance.

Revitalising indigenous language in Japan and Vietnam

In April 2019, in Japan, after years of Ainu cultural revitalisation and advocacy, a bill was passed officially recognising the Ainu as indigenous peoples and confirming support for efforts to revive the Ainu culture. This process dates back to the 1997 *Ainu Culture Promotion and Dissemination of Information Concerning Ainu Traditions Act*. Since then, there have been various activities to revive the Ainu language, which is regarded as crucial to the expression of the Ainu heritage.⁽³⁰⁵⁾

“I myself did not speak [the Ainu language] routinely because it was discouraged, but I was surprised to find I remembered the language unexpectedly ... When I was young, I thought Ainu was inferior in the face of discrimination. But now I feel that it was advantageous for me to have acquired the language without knowing.”

— Mutsuko Nakamoto, Ainu writer

In Vietnam, the government has formally recognised traditional languages despite the lack of legal recognition of indigenous peoples. The work of the Vietnamese Indigenous Knowledge Network (VTIK), together with the Centre for Sustainable Development in Mountainous Areas,^(xiii) led to government commitments to recognise and teach the Mong, Thai and Dao languages and, in March 2016, the Ministry of Culture, Sport and Tourism awarded VTIK members in Son La a certificate recognising the Thai script as National Intangible Inheritance.

^{xiii}. For more information on the Centre for Sustainable Development in Mountainous Areas, see: <https://www.iwgia.org/en/iwgia-partners/55-centre-for-sustainable-development-in-mountainous-areas-vietnam>

These local examples complement global efforts to maintain and revitalise indigenous languages. In 2016, the United Nations General Assembly proclaimed 2019 the International Year of Indigenous Languages. Coordinated by UNESCO, a wealth of activities and actions took place during 2019, culminating in the proclamation of the International Decade of Indigenous Languages (2022–2032) by the United Nations General Assembly on 18 December 2019.^(xiv) In 2020, UNESCO is planning to launch an online platform for the World Atlas of Languages, a repository for linguistic diversity and multilingualism. The International Decade of Indigenous Languages should contribute to a holistic approach to biological and cultural diversity.

^{xiv}. General Assembly resolution 74/135, *Rights of indigenous peoples*, A/RES/74/135 (18 December 2019).

Protecting traditional occupations and customary sustainable use

For IPLCs, traditional knowledge, customary sustainable use and conservation are all deeply interconnected, as exemplified by the case studies in Nicaragua (see Box 41) and Hungary (see Box 42).

Box 41: Jadder Mendoza Lewis, Pueblos Indígena Miskitu, Centro de Estudios y Desarrollo de la Autonomía de la Fundación para la Autonomía y Desarrollo de la Costa Atlántica de Nicaragua

Case study: Sustainable use and conservation of the green turtle by the Miskitu indigenous people, Nicaragua

For the Miskitu indigenous people, who inhabit the Caribbean coasts of Nicaragua and Honduras, the green sea turtle (*Chelonia mydas*) is a key natural resource in their food and spiritual systems and conservation efforts, and is a biocultural link that energises social relations, traditional knowledge and livelihoods.

In Nicaragua, the Miskitu indigenous people have maintained the practices of ancestral use of this resource, especially in the Cayos Miskitus Biological Reserve where important management efforts for sustainable use have been developed in collaboration with the Ministry of Environment and Natural Resources since 2005. The joint management process led to the creation of multi-level work commissions to ensure the implementation of use and conservation measures, including a four-month closed season, annual catch quotas, regulation of turtle meat trade in the cities, capture size parameters, and environmental education campaigns to generate a more responsible society towards its food, and to spiritual and recreational use. For the indigenous Miskitu, the implementation of turtle conservation and sustainable use policies represents historical cultural continuity and strengthening of traditional knowledge.

Miskitu fisherman with a turtle. In Nicaragua, the Miskitu have maintained the practices of the ancestral use of this resource. Credit: Paul Aguilar.



Case study: Traditional herders are needed to safeguard biodiversity of species-rich grasslands in Central Europe

People don't see that we herders work for nature: we manage their pastures, we manage weeds, bushes and reeds. People think that all this diversity comes from nature only; they believe that these grasslands would survive without grazing. If herders go, tasty meat will go too.

Now, the wild animals have less and less space to live because people keep on entering, trespassing on their habitats. In the past, there were more beetles because there were more cowpats with dung beetles for birds to feed from. Now that in many areas grazing has been abandoned, the area has become wild. The grassland is dirty, full of litter, bushes and invasive species. Many natural areas (including government protected areas) suffer from improper or abandoned grazing.

However, things are getting better in our country. Conservation rangers would not talk to us 20 years ago. They criticised us without asking us anything. Now they stop and we can talk about pasturing and grassland management. We agree on about 90 per cent of things, so we can find good solutions. For example, we revived an old meadow management practice: we graze the meadows in early spring, so we can cut the hay later, when the European Union regulations allow it for us. And this is also good for the birds breeding on the ground.

We need to recognise each other's knowledge. We should teach each other. Many conservationists say that our traditional herding is very much needed in protected areas because there were wild horses, wild cattle and bison many millennia ago, and these habitats need grazing to maintain their biodiversity. Others only see the overgrazed areas managed by less knowledgeable *herders*.

Proper grazing needs knowledgeable herders. Otherwise, livestock would only eat the good grass. Many areas still have their own herder who knows the area and what can graze where and when. Without herders, these areas would not be pasture any longer, just rough land. Sheep and cattle are inclined to overgraze some parts of the pasture.

But if a grassland is not grazed at all, it will be overgrown with weeds. Pastures would be ruined and go wild when there is no livestock on them. Thorny bushes and thistles would spread, and they must be cut by conservationists with expensive machines at high fuel prices.

Herders can also help restore these abandoned pastures. With grazing, pastures become a lot cleaner; they are refreshed. More birds go there. Wildlife has a cycle, which requires livestock. A lot of people don't consider herders' knowledge to be real knowledge. We did not learn from books—we inherited this knowledge, we were born into it. If people respected us a bit more, that would mean a lot.

Box 42: László Sáfián,
Shepherd, Hajdúsámson,
Hungary and Zsolt Molnár,
Ethnoecologist, MTA,
Hungary



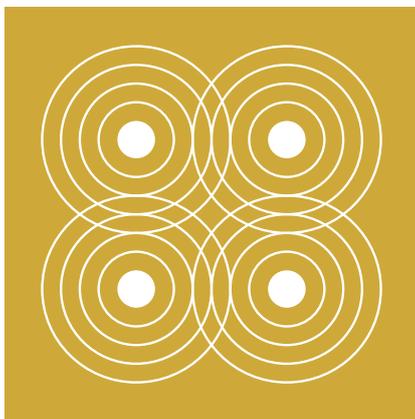
A herder watches over his flock. Credit: Abel Peter.

Opportunities and recommended actions

- IPLCs, including elders, youth, women and men, should initiate and lead a political and technical process on relevant biodiversity and traditional knowledge indicators, addressing methods, tools and mechanisms to monitor progress in implementing local biodiversity strategies and action plans, alongside national, regional and global commitments under the post-2020 biodiversity strategy.
- Governments, in partnership with IPLCs, should adopt enabling policies, laws and mechanisms, including monitoring and reporting modalities, to fully respect and mainstream traditional knowledge, customary sustainable use and benefit-sharing in the implementation of the CBD at the national and sub-national levels.
- IPLCs, governments and other actors should foster and prioritise programmes that enhance the links between biological and cultural diversity, and that build nature-culture alliances.
- Strategic partnerships among IPLCs, governments, international organisations, civil society, NGOs and other actors should be established to support collective actions of IPLCs and their contributions under the post-2020 global biodiversity strategy.

Key resources

- IPBES (2019) *Summary for policymakers of the global assessment on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). Bonn, Germany: IPBES. Available at: <https://doi.org/10.5281/zenodo.3553579>
- UNESCO Strategic Outcome Document of the 2019 International Year of Indigenous Languages. Available at: <https://en.iyil2019.org>
- Cultural Survival (2019) *Hear our languages—International Year on Indigenous Languages 2019*. Available at <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/43-1-hear-our-languages-international-year-indigenous>
- Center for Biodiversity & Conservation (2019) ‘Indicators of well-being’. Webinar series. American Museum of Natural History. Available at: <https://www.amnh.org/research/center-for-biodiversity-conservation/research-and-conservation/biocultural-conservation-planning/biocultural-approaches/indicators-of-well-being-webinar-series>



Target 19: 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 messages

- Increased collaboration between governments, scientists and IPLCs has strengthened our overall knowledge base about biodiversity values, functions, status and trends, and revealed new policy options relating to biodiversity.
- There is a wide gap between the increased recognition of the value of traditional knowledge in global policy and its continuing neglect and erosion on the ground.
- Bridging diverse knowledge systems at different scales and applying indicators relevant for IPLCs require a fundamental change in programming, funding and capacity building.

Significance of Target 19 for IPLCs

Among the ground-breaking advances in recent years has been the inclusion of indigenous and local knowledge alongside the sciences as complementary systems of knowledge for achieving fuller and richer understanding of biodiversity values, functioning, status and trends, and of the consequences of its loss at different scales. As stated by the Scientific Advisory Board of the UN Secretary General in 2016:⁽³⁰⁶⁾

‘Cultural diversity as a creative source and enabler for sustainable development... Diverse knowledge systems, encompassing the physical and natural sciences, social sciences and humanities, as well as indigenous and local knowledge systems are all critically important for understanding and addressing complex challenges and opportunities for people and planet. Inasmuch as biological diversity underpins the resilience of ecosystems, likewise, cultural diversity underpins social resilience for sustainable development... Rather than implying an abandonment of tradition, modernity should be tested and made sustainable in the light of cultural knowledge and values.’

One example of the emerging importance placed on indigenous and local knowledge systems is the recent global assessment by the IPBES (See Box 43).



Box 43: Eduardo S. Brondizio (Indiana University Bloomington; Co-chair, *IPBES Global Assessment on Biodiversity and Ecosystem Services*), on behalf of the co-chairs, technical support units, and authors of the IPBES Global Assessment

Members of IIFB participate in a meeting of the CBD Working Group on Article 8(j) and related provisions in Montreal, November 2019. Credit: Tom Dixon.

Case study: Science and indigenous and local knowledge have complemented and enriched each other throughout the IPBES global assessment process

It was clear that fulfilling the mandate of the *IPBES Global Assessment on Biodiversity and Ecosystem Services* would require a comprehensive, multi-faceted approach to incorporate, synthesise and scale up the contributions of indigenous and local knowledge, practices, and innovations and issues concerning indigenous peoples and local communities (IPLCs), from local to global levels. Evidence shows that, while indigenous and local knowledge systems are locally based, they are manifested in regional landscapes and ecosystems, and are globally relevant. IPLCs have shaped the ecologies, conservation initiatives, and resource economies of vast regions of the world, from managing forests, soil fertility, grasslands, mountains, watersheds, and coastal areas to cultivating and nurturing domesticated and wild species, and managing vast social-ecological production landscapes, for humans and non-humans. They are also at the forefront of pressures created by expanding extractive industries, pollution, infrastructure and climate change, and, at the same time, playing key roles in supporting the Convention's 2050 vision for biodiversity, the UN 2030 Agenda for Sustainable Development, and the Paris Agreement on climate change. In the spirit of Aichi Target 19, science and indigenous and local knowledge have complemented and enriched each other throughout the IPBES global assessment process.

A strategy on indigenous and local knowledge and engaging IPLCs was developed at the outset, and discussed and reviewed by several constituencies within IPBES, particularly the task force on indigenous and local knowledge systems, and in dialogues with experts and IPLC representatives. This guiding strategy included several components.

During the first authors' meeting, an authors' liaison group for indigenous and local knowledge was formed, which collaborated throughout the assessment process within and across chapters. This group of 28 authors (coordinating lead authors and lead authors) and 32 contributing authors analysed evidence and participated in dialogue and consultation workshops.

A question-based approach provided a common guiding reference for authors to review empirical evidence, and guided consultations and dialogues. Three overarching questions were developed, and further detailed into 36 chapter-specific questions. These were:

- What have been the contributions of indigenous and local knowledge practices and innovations to the sustainable use, management and conservation of nature and nature's contributions to people at regional and global scales?
- What are the most important features, pressures and factors related to and/or enabling or constraining these contributions, as well as impacting present and future quality of life of IPLCs?
- What policy responses, measures, and processes can contribute to strengthen and improve the institutions and governance of nature and its contributions to people with regard to IPLCs?

Addressing these questions through a systematic and inclusive review of evidence from multiple sources included: literature searches in indexed journals and review of a wide range of reports; information from other IPBES assessments and earlier IPBES dialogue workshops on indigenous and local knowledge; various types of geospatial data; and inputs received from online and face-to-face consultations with IPLC networks and organisations. Dialogues and consultations carried out in international fora and on community grounds provided further essential contributions to the global assessment. An online call for contributions (in three languages and equipped with a web-page translation tool) engaged 363 contributors from over 60 countries, and over 1200 bibliographic resources. Altogether, the authors reviewed over 3000 relevant references, generating, for instance a synthesis of over 500 local indicators of social-ecological changes, and a systematic review of all Aichi Biodiversity Targets and SDGs as related to IPLCs. Literature review and dialogue workshops also allowed authors to assess the available scenarios, the pressures experienced by IPLCs in different parts of the world, and the relevant policy options and instruments directly or indirectly affecting IPLCs.

Together, and in consonance with the broader array of scientific evidence, the global assessment shows the global importance of IPLCs to the management and conservation of nature; to agrobiodiversity; and to climate change mitigation. It shows their innovations and emerging governance solutions, and it shows the pressures and struggles IPLCs suffer from, both current and projected. It shows that recognising the knowledge, innovations, practices, institutions and values of IPLCs, and their inclusion and participation in environmental governance, enhances their rights and quality of life while simultaneously advancing nature conservation, restoration and sustainable use with implications for the broader society.



The experience of the global assessment shows the importance of co-producing and co-learning through multiple forms of interaction among and between assessment authors and representatives of IPLCs. While having a dedicated group of authors and a dedicated indigenous and local knowledge technical support unit (at UNESCO) were fundamental, the process ultimately depended on the recognition and engagement of the wider community of scientists in the assessment team and knowledge-holders and community representatives from around the world who engaged with the process.

It is important to note that the global assessment process calls for mobilising funding and supporting staff from the outset. Going forward, it is important to continue to advance the participation of IPLC representatives during an assessment's scoping and expert nomination phases, including expanding the participation of IPLC experts and representatives with relevant knowledge in the assessment team.

Municipal officers and community representatives illustrate local government support for community land tenure. Credit: Maurizio Farhan Ferrari.

Contributions and experiences of IPLCs towards Target 19

Community-based monitoring and information systems

Community-based monitoring and information systems (CBMIS) using indicators relevant for indigenous peoples have become more widespread in recent years,⁽³⁰⁷⁾ as their importance for self-governance has become better understood, and as the monitoring of governments and business for their compliance with global obligations and commitments has been stepped up.

CBMI face many challenges in bridging data collection between local and global scales. While they uphold community-based monitoring for local governance and use indicators and approaches relevant for community needs, the data generated can also contribute to national and global reporting and thematic assessments. In the words of the UN Statistics Division: ‘Data collection and disaggregation concerning indigenous peoples pose unique challenges in terms both of developing data for global comparative purposes and of developing data that is useful at a micro-level for indigenous peoples.’⁽³⁰⁸⁾ In the context of adopting indicators for the SDGs, the approach of promoting an *ecosystem of data*—including official statistics and the contributions of multiple actors through, for example, citizen science and community-based monitoring—seeks to ensure the best possible evidence-base for policy decisions about the future of people and planet.

Indigenous peoples have also been active in established self-driven and self-directed platforms to enhance knowledge-sharing in global policy processes. A selection of key indigenous-led platforms and caucuses is provided in Box 44.

Box 44

Global policy platforms and learning networks of indigenous peoples and local communities

IPLC organisations and networks work together on several global platforms to monitor progress on the implementation of the global agenda on sustainable development, biodiversity and climate change, some examples of which are described below. CBMIS-generated data informs policy advice and engagement with governments and other actors, thus linking grassroots realities with national reporting and global assessment and reviews.

The International Indigenous Forum on Biodiversity and the CBD

The International Indigenous Forum on Biodiversity collaborates with the Indigenous Women’s Biodiversity Network, the Centres of Distinction on Indigenous and Local Knowledge, the Forest Peoples Programme, and the Secretariat of the CBD to produce *Local Biodiversity Outlooks* as a complementary publication to the *Global Biodiversity Outlook*.

The International Indigenous Forum on Biodiversity and Ecosystem Services and the network of **Centres of Distinction on Indigenous and Local Knowledge**; and **IPBES**

Comprised of organisations implementing programmes on indigenous and local knowledge in different global regions, these networks identify and link the holders of indigenous and local knowledge with experts in geographic regions or themes, creating focal points for collaborative work with each other and with governments, scientists, researchers and policy specialists.

The Indigenous Peoples Major Group for Sustainable Development and the **UN Sustainable Development Goals**

The Indigenous Peoples Major Group for Sustainable Development (IPMG)^(xv) has published regional reports and a global report on the situation of lands, territories and resources of indigenous peoples; thematic reports on biodiversity, on indicators, on access to energy and on inclusion, equality and empowerment; and a special report on indigenous women. IPMG supports the Indigenous Navigator,^(xvi) a shared CBMIS framework for monitoring implementation of: the UN Declaration on the Right of Indigenous Peoples; the SDGs; and the outcomes of the 2014 World Conference on Indigenous Peoples being implemented in 11 countries (Nepal, Bangladesh, Philippines, Cambodia, Colombia, Peru, Suriname, Cameroon, Kenya and Tanzania) and funded by the European Commission.

The International Indigenous Peoples Forum on Climate Change and the **UNFCCC**

The International Indigenous Peoples Forum on Climate Change has successfully advocated for environmental and social safeguards in REDD+ and the creation of a *local communities and indigenous peoples platform* to strengthen the knowledge, technologies, practices and efforts of local communities and indigenous peoples in relation to climate change. A facilitative working group has been established to elaborate the work programme and to further operationalise the platform.

The International Indigenous Peoples' Forum on World Heritage

The International Indigenous Peoples' Forum on World Heritage^(xvii) was created by indigenous delegates at the 41st session of the UNESCO World Heritage Committee in Krakow, Poland, in July 2017. Modelled on the CBD and the *UN Framework Convention on Climate Change*, it is a standing global body aiming to engage with the World Heritage Committee during its meetings, to represent the voices of indigenous peoples on the World Heritage Convention.

xv. Indigenous Navigator: <http://nav.indigenousnavigator.com/index.php/en/>

xvi. International Indigenous Peoples' Forum on World Heritage: <https://iipfwh.org/>

xvii. International Indigenous Peoples' Forum on World Heritage: <https://iipfwh.org/>

Remaining barriers

Despite important advances, an implementation gap continues to exist between the global and local recognition of the importance of indigenous and local knowledge. Globally, it is recognised in contemporary problem-solving, but in national policies and strategies it continues to be neglected and lacks protection. The numerous good examples highlighting progress in recognising indigenous and local knowledge and its contributions should not overshadow the underlying social marginalisation faced by indigenous peoples and local communities in most countries, which curtails their agency and voice in national decision-making, planning and implementation of the agenda for global transformation.

The recent *IPBES Global Assessment on Biodiversity and Ecosystem Services* shows the importance of evidence-based assessments of the full contributions of IPLC collective actions to the conservation and sustainable use of biodiversity and to all the Aichi Biodiversity Targets. Community-based monitoring and information is an innovative contribution complementing global data and information on indigenous peoples, but indigenous peoples still face huge and growing inequalities in accessing data and information technologies, and in their ability to use them to manage the risks of their private or sacred knowledge being misappropriated and misused.⁽³⁰⁹⁾

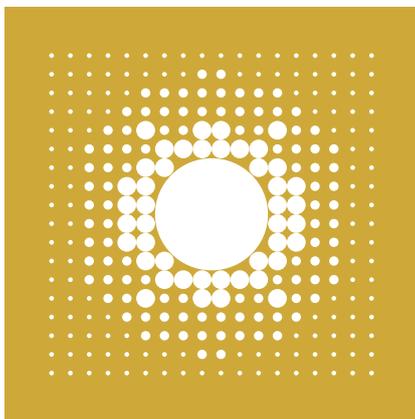
Opportunities and recommended actions

Governments, IPLCs, UN bodies (including the Inter-Agency Support Group on Indigenous Peoples' Issues), scientific bodies, academia and funders should:

- Strengthen partnerships to improve the sharing of information and technologies on indigenous and local knowledge;
- Strengthen synergies and holistic approaches among IPLC knowledge platforms engaging biodiversity, sustainable development and climate change processes, and move towards strategic partnerships on monitoring relevant indigenous and local knowledge indicators at local, national and global scales;
- Increase institutional and financial support for building capacity in, and using, CBMIS for generating, storing, managing and using data and information through, for example, giving IPLCs greater access, control and management of information and communication technologies;
- Strengthen interfaces between global, national, and community-based processes of data and knowledge generation; and strengthen the use of relevant indigenous and local knowledge indicators that data platforms and statistical bodies use for monitoring and reporting, including disaggregating data on the status of indigenous peoples, women, youth and marginalised groups;
- Document, disseminate and apply lessons from successful collaborations across diverse knowledge systems, such as IPBES, the International Partnership for the Satoyama Initiative, Multiple Evidence Base approach, evidence-based partnerships and community-based natural resource management groups;
- Mainstream training on the complementarity of sciences, technologies and indigenous and local knowledge for biodiversity conservationists, natural resource scientists, and academics in other disciplines.

Key resources

- Scientific Advisory Board of the Secretary-General of the United Nations (2016) 'Indigenous and local knowledge(s) and science(s) for sustainable development: policy brief by the Scientific Advisory Board of the UN Secretary-General'. SC/2016/UN SAB/ILK. Scientific Advisory Board of the Secretary-General of the United Nations. Available at: <https://unesdoc.unesco.org/ark:/48223/pfo000246104>
- Tebtebba (2018) *Enhancing indigenous peoples development through community-based monitoring and information systems (CBMIS)*. Baguio: Tebtebba. Available at: <https://www.tebtebba.org/index.php/resources-menu/publications-menu/books/60-enhancing-indigenous-peoples-development-through-cbmis>
- IPBES (2017) 'Approach to recognizing and working with indigenous and local knowledge in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services'. Annex II to decision IPBES-5/1 in Report of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on the work of its fifth session. IPBES/5/15. Available at: https://ipbes.net/sites/default/files/inline/files/ipbes_ilkapproach_ipbes-5-15.pdf
- Action Group on Knowledge Systems and Indicators of Wellbeing (n.d.) 'Nature-Culture Indicators and Knowledge Systems Resource Directory'. Center for Biodiversity and Conservation, American Museum of Natural History. Available at: <http://resources.cbc.amnh.org/indicators/about.html>



Target 20: Resource mobilization

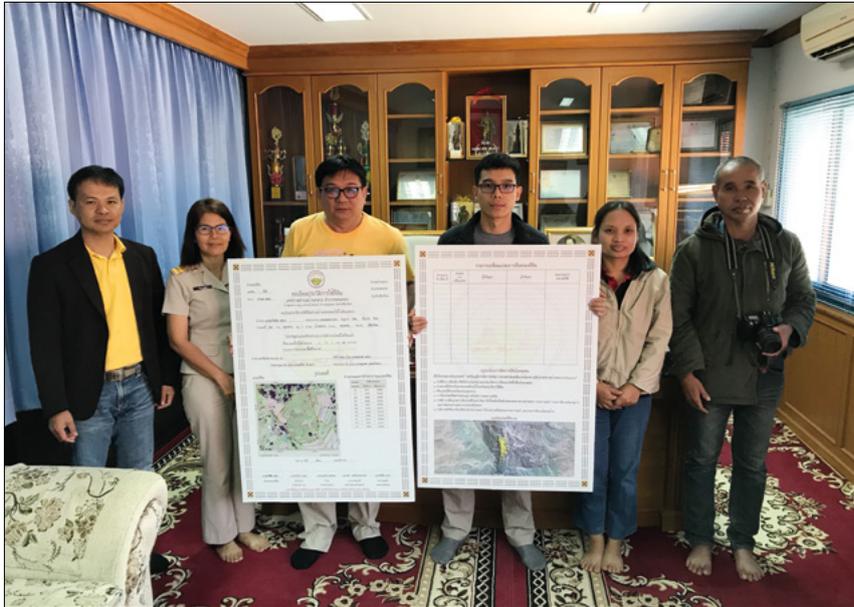
By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current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

Key messages

- The collective actions of IPLCs to conserve and sustainably use their lands and territories, and the biodiversity that these areas contain, make a substantial non-financial contribution towards the goals of the CBD.
- Funding for their actions needs to be proportionate to the scale of their contributions. It also needs to be made more accessible, through improved targeting, information-sharing and training, and culturally appropriate procedures.
- Safeguards need to be integrated into all resource mobilisation processes to bring an end to the negative impacts of biodiversity financing on the rights and livelihoods of IPLCs, and to build on the relationship between secure IPLC rights and positive biodiversity outcomes.

Significance of Target 20 for IPLCs

For IPLCs, the key issues related to Target 20 are the need for full recognition of the value of their collective actions and increase in support for these actions at a scale that is proportionate to their contributions; and the need for stronger safeguarding measures to reduce negative impacts of biodiversity financing on them.



Municipal officers and community representatives illustrate local government support for community land tenure. Credit: Maurizio Farhan Ferrari.

Funding IPLCs in proportion to the scale of their contributions

Global recognition of the value of collective environmental actions has increased significantly across the work of the CBD in recent years, including in planning for the post-2020 global biodiversity framework.⁽³¹⁰⁾ However, a lack of national reporting on support for collective actions makes it difficult to assess whether this has translated into concrete support where it matters. The CBD has tried to push for better national reporting: the CBD Financial Reporting Framework has included elements on expenditure related to IPLC collective actions since COP12 (in 2014).⁽³¹¹⁾ By September 2018, however, only seven countries reported having undertaken some assessment of the role of collective actions and no country indicated that a comprehensive assessment had been undertaken.⁽³¹²⁾

An assessment in 2019 by the OECD estimated annual finance for global biodiversity at US\$77.87 billion.⁽³¹³⁾ The findings included the following points:

- Most of the funding—US\$67 billion—was domestic public expenditure. Some Parties, including Canada, the EU, Norway, New Zealand and Australia, had been very supportive of allocating domestic funding to conservation by IPLCs. However, for most Parties no information was readily available on this.
- International bilateral and multilateral public expenditure related to biodiversity was estimated at US\$4.9 billion per year. This includes funding through the Global Environment Facility, the Green Climate Fund, and the World Bank. Understanding how much of this expenditure is directed at IPLCs requires further in-depth review.
- Private finance was estimated to be at least US\$7–10 million per year.^(xviii) The potential for private finance mechanisms (such as offsets and payments for ecosystem services) to support IPLC collective actions is not yet clear.

^{xviii}. The OECD review also looks at subsidies that are positive for biodiversity contributions, but these are accounted separately and are discussed in Target 3.

In summary, there is not enough evidence to assess in any detail the overall level of funding available to support IPLC collective actions. However, given that IPLCs customarily own or manage at least 50 per cent of the world's lands, and vast marine areas, and that these areas hold a large proportion of the planet's biodiversity,⁽³¹⁴⁾ the available information suggests strongly that the proportion

of biodiversity funding available for IPLCs lags far behind their current contributions to the Aichi Biodiversity Targets.

There have been, however, some positive advances. One programme that has proven effective in many places in channelling funds to indigenous peoples and local communities for biodiversity stewardship is the Global Environment Facility's Small Grants Programme, and the experiences of the programme offer several useful lessons (see Box 45). These lessons, however, are not universally consistent, and persistent marginalisation in some countries continues to ensure IPLCs lag in access even to proactive funding streams such as the Small Grants Programme. The Global Environment Facility's announcement in 2019 of the new US\$25 million Inclusive Conservation Initiative dedicated to enhancing the efforts of indigenous peoples and local communities to 'steward land, waters and natural resources to deliver global environmental benefits' is a welcome step.

Box 45

Case study: The Global Environment Facility's Small Grants Programme

The Global Environment Facility's Small Grants Programme offers grants of up to US\$50,000 directly to local communities, community organisations and NGOs, including for projects related to biodiversity. A 2019 review reported the following:⁽³¹⁵⁾

- About US\$163 million has been granted to biodiversity-related projects that were either managed by indigenous organisations or by NGOs to benefit indigenous peoples. This represents 37 per cent of biodiversity projects in countries with indigenous peoples.
- The proportion of indigenous-led projects, or projects intended to benefit indigenous peoples, is increasing steadily.
- Of the indigenous-led projects, 12 per cent began with a US\$5,000 *development grant* to work on their project proposal. Feedback suggests that planning grants are a useful means to facilitate indigenous projects.
- Alternative forms of project proposal based on videos and photo stories have been piloted and may be useful in improving accessibility to IPLCs. However, they are challenging for programme management. Eighteen projects have been funded on this basis.
- In 2018–19, 35 per cent of participating countries had an indigenous representative on the national steering committee.
- Strategic financial partnerships with local governments, NGOs and the private sector have not only increased the total funding available but have also been found to increase the sustainability of projects, strengthen inter-institutional relations, and build awareness and appreciation of indigenous peoples' contributions.

Safeguards in biodiversity financing

The second key issue for IPLCs in relation to Target 20 is the need to strengthen safeguarding measures to address the continued negative impacts of biodiversity financing on IPLCs. Currently, in spite of widespread recognition of the positive role of IPLCs in striving to meet the Aichi Biodiversity Targets, there are many cases where activities to progress towards these same targets are carried out in opposition to IPLCs rather than in collaboration with them, with serious impacts on their rights and livelihoods.⁽³¹⁶⁾ In response to this situation, in 2014 at COP 12 the Parties to the CBD adopted a set of voluntary guidelines on safeguards in biodiversity funding mechanisms (see Box 46) and some progress was made at subsequent COPs in developing a framework for its implementation. For IPLCs it is essential that these steps are consolidated urgently in the post-2020 framework to ensure effective safeguarding and to put an end once and for all to human rights abuses in the name of conservation.

The CBD's voluntary guidelines on safeguards in biodiversity financing mechanisms

In 2014, at COP 12, voluntary guidelines on safeguards in biodiversity financing mechanisms⁽³¹⁷⁾ were adopted. They address potential impacts both on different elements of biodiversity and on the rights and livelihoods of IPLCs.

In 2018, at COP14, a checklist of safeguards was adopted based on the following overall question:

‘Does the financing mechanism have a safeguard system designed to effectively avoid or mitigate its unintended impacts on the rights and livelihoods of indigenous peoples and local communities in accordance with national legislation, and to maximize its opportunities to support them?’⁽³¹⁸⁾

A policy paper on implementation pathways for the guidelines was published by the CBD Secretariat in 2018⁽³¹⁹⁾ and contributed to discussions on a specific post-2020 safeguards framework for IPLCs, as part of the programme of work on Article 8(j). In its recommendations it reiterates the critical nature of tenure rights in safeguarding both biodiversity and human rights, and advises the development of appropriate safeguards concerning this substantive right and also of associated procedural safeguards.⁽³²⁰⁾

Box 46

Safeguards for biodiversity and conservation funding have been introduced increasingly in international public expenditure. The Global Environment Facility introduced requirements for safeguards in 2011,⁽³²¹⁾ the Green Climate Fund adopted the International Finance Corporation ‘Performance Standards’ as interim safeguards in 2014,⁽³²²⁾ and the World Bank (and all other multilateral finance institutions) have had safeguard frameworks in place since the 1990s / early 2000s. Key elements of these safeguard frameworks are prohibitions against forced resettlement, and requirements of consultation, participation and, in some cases, consent prior to activities being approved for funding.

Contributions and experiences of IPLCs towards Target 20

IPLCs make substantial contributions to all 20 of the Aichi Biodiversity Targets in the form of widespread, diverse, collective actions of the kinds that feature throughout this report. They act as environmental managers, stewards and watchdogs, in many cases on an entirely voluntary basis and under very challenging conditions. Where appropriate enabling conditions are in place, successful collective actions can spread organically through existing networks with relatively small amounts of financial support, having an impact disproportionate with the money provided. Two examples are provided in this section: one in Thailand with domestic funding from the national government (Box 47) and one in Antigua and Barbuda with funding from Global Environment Facility's Small Grants Programme (Box 48).

Box 47: Jantanee Pichetkulsampan, Inter Mountain Peoples Education and Culture in Thailand Association

A woman gathers plants near Mae Hong Son village. Credit: V-Victory.



Case study: Local government regulations support community-led natural resource management in Thailand

In Thailand, the Municipal Ordinance Concerning Participatory Management of Natural Resources and Environment provides a legal mechanism to locally finance community-led resource management. It was passed by the Ban Luang Sub-district Municipality in Chomthong District in 2015, and San Din Daeng village, inside the Doi Inthanon National Park, was the first village to be registered for community land use under the ordinance. The financial plan for the municipality also called for mapping of neighbouring villages, which has reduced conflicts between the villages and national park authorities and brought an end to arrests for tree-felling and forest encroachment. Since then, the municipality has become a model for this kind of participatory resource management and a second municipality, Doi Kaew Sub-district, has passed a similar municipal ordinance, which is awaiting confirmation from higher policy levels.

In addition, in 2010 a cabinet resolution established the designation of *special cultural zones* for the rehabilitation of indigenous Karen lifestyles, and created four pilots (in Lai Wo, Le Tong Khu, Hin Lad Nai and Mowaki villages), to which seven more have since been added (San Din Daeng, Mae Um Phai, Mae Jok, Khun Mae Yod, Sop Lan, Ban Klang and Doi Chang-Pa Pae). San Din Daeng has received finance and human resources from Ban Luang Sub-district Municipality, the Sirindhorn Anthropology Center, the Inter Mountain Peoples Education and Culture in Thailand Association, the Pgakenyaw Association for Sustainable Development, the Karen Network for Culture and Environment, and the Thai Rak Pa Foundation, and also from Doi Inthanon National Park, Mae Ya-Mae Pon Watershed Network, and Chomthong District Office of Nonformal Education.

Doi Inthanon National Park has received an award for excellence in relation to the activities in San Din Daeng. The Community Development office of Chomthong District has also provided a budget to support alternative income-generating activities, and the communities have been able to produce goods for sale, targeted at green markets outside the area. Meanwhile, the Ban Luang Sub-district Municipality has supported resource management activities through the Mae Ya-Mae Pon Watershed Network, including irrigation weirs in Class 1A forest areas; and the Phra Thammajarik Project (of Buddhist monks) has assisted in improving the road into San Din Daeng village. An important outcome has been reduced out-migration for employment, although children and youths have continued to leave the village for higher education in urban areas.

Many IPLCs continue to receive little or no support for their actions, the support that is available is difficult to access, and they continue to face opposition, hostility and violence as they try to defend their lands and resources against unsustainable exploitation by others and also in the context of protected areas-based conservation. The adoption by the CBD of voluntary guidelines on safeguards in biodiversity financing mechanisms is an important step forward in relation to this last point, including in terms of recognising the importance of tenure over IPLC traditional territories for their survival and ways of life, and the importance of obtaining their free, prior and informed consent.

Box 48: Ruth Spencer,
Global Environment Facility's
Small Grants Programme, in
partnership with the Marine
Ecosystems Protected
Areas Trust

A group on a hike around Walling Nature Reserve.
Credit: Walling Nature Reserve.



**Case study: The potential impact of small grants;
Global Environment Facility support for Walling
Nature Reserve, Antigua and Barbuda**

In Antigua and Barbuda, support from the Global Environment Facility's Small Grants Programme for community action has led to the setting up of the Walling Nature Reserve, the first community-managed conservation site in the country. The community is working towards an effective management system through collection of entrance fees and allocation from bathroom fees, the reserve being the only rest stop in that part of the island. The government has overall responsibility to manage the area, but budgetary deficits prevent them from providing the necessary human, technical and financial resources. The Small Grants Programme has been a powerful mechanism to empower local groups and build capacity for effective community conservation and management, as well as to support community efforts related to the protected area.

This small grant is having impacts beyond this one site. The project results are motivating other local groups to develop programs that find solutions to other environmental challenges. Empowerment as a result of the grant is widespread across the country, covering many areas and sectors, and has enabled the group to develop community rights outreach and to build and develop partnerships with different state actors, including the Ministry of Sustainable Tourism, the Department of the Environment, the AB Investment Authority and the Community Development Division, as well as with the private sector, including hotels.

Opportunities and recommended actions

- IPLCs should further document their collective actions relevant to the objectives of the CBD, including collation of case studies.
- Governments should disaggregate figures on domestic support for IPLC collective actions in national reports to the CBD. Further, international public expenditure on biodiversity conservation should be disaggregated and account for funding provided directly to IPLCs.
- The United Nations Development Programme's Biodiversity Finance Initiative (BIOFIN) should also disaggregate figures and develop a comprehensive method for governments to measure expenditure levels for biodiversity and estimate future financial needs. In addition, mechanisms should be developed to enable IPLCs to fully participate in designing policies and programmes.⁽³²³⁾
- Governments and international funding organisations should increase comprehensive, long-term, direct financial support for IPLC collective actions in line with their needs as expressed by IPLCs.^(xix) These mechanisms should promote replication and scaling-up of successful initiatives and instruments, and should ensure improved access to funding information, including application and project timelines.
- Governments should include IPLCs on national committees with roles and responsibilities for national budgets related to domestic biodiversity financing.
- Governments and relevant actors should increase human, technical and institutional resources in relation to recognition of IPLC rights and actions (for example, advising, building capacity, improving participation and reporting) and broader forms of support for community conservation initiatives including legal, political, social and economic.
- Governments, NGOs and others should provide training on how to access funding, for women as well as men. This includes training on understanding funding guidelines, writing complex project documents, and financial management and accountability.
- Governments, international funders, and private sector funders must integrate adequate safeguards and measures related to social inclusion in all resource mobilisation processes.

^{xix}. As indicated in post-2020 Working Group discussions which call for: 'dedicated equitable and sustainable funding and financing mechanisms to support the collective actions of indigenous peoples and local communities on conservation, customary sustainable use, access and benefit sharing, restoration, and local biodiversity strategies and action plans.' Convention on Biological Diversity (2020) Report of the Global Thematic Dialogue for Indigenous Peoples and Local Communities on the Post-2020 Global Biodiversity Framework, Montreal, Canada 17-18 November 2019. CBD/POST2020/WS/2019/12/2. Montreal: Convention on Biological Diversity.



● A Waorani woman digs the earth with a machete in order to plant plantain saplings in a patch of ground cleared in the Ecuadorian rainforest. Credit: Karla Gachet.

Key resources

- OECD (2019) *Biodiversity: Finance and the economic business case for action*. Report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019. Paris: OECD. Available at: <https://www.oecd.org/environment/resources/biodiversity/G7-report-Biodiversity-Finance-and-the-Economic-and-Business-Case-for-Action.pdf>
- Global Environment Facility (2019) *Environmental and social safeguard standards*. Washington D.C.: Global Environment Facility. Available at: <https://www.thegef.org/documents/environmental-and-social-safeguard-standards>
- Pérez, E.S. and Schultz, M. (2015) 'Dialogue workshop on assessment of collective action in biodiversity conservation: Co-chairs' summary'. Panajachel, Guatemala, 11-13 June 2015. Montreal: Convention on Biological Diversity. Available at: <https://www.cbd.int/financial/micro/collective-action-report.pdf>
- Swedbio (2016) 'Collective action by Indigenous peoples and local communities'. Available at: <https://swed.bio/news/collective-action-by-indigenous-peoples-and-local-communities/>



Part III



A Baka woman weaves baskets in Cameroon.
Credit: Adrienne Surprenant.

Biodiversity, climate change and sustainable development

Key messages

- The individual and collective actions of IPLCs are making distinctive contributions to achieving biodiversity, climate change and sustainable development goals, combining human rights and wellbeing, conservation and sustainable use of nature, and maintaining natural life-support systems. Securing the rights of IPLCs to their lands, territories and resources by 2030 will have transformative impact towards meeting the global change agenda.
- IPLCs embody intergenerational links between nature and culture, culture and development, and local to global connections, implementing the universal agenda through diverse ways of knowing and being.
- The UN Sustainable Development Goals (SDGs) can serve as a tool for empowering IPLCs to overcome vulnerability and exclusion, and move towards self-determination and full and effective participation in inclusive governance.
- Given their direct material and cultural links to the environment, IPLCs are, and will continue to be, disproportionately impacted if the Aichi Biodiversity Targets and the SDGs are not met.

IPLCs and the nexus of biodiversity, climate change and sustainable development

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 to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world on to a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.⁽³²⁴⁾

— 2030 Agenda for Sustainable Development



Indigenous Americans march as part of Fridays for Future to highlight the impacts of climate change on their way of life. Credit: ph_m.

This is an Agenda of unprecedented scope and significance. It is accepted by all countries and is applicable to all, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. These are universal goals and targets which involve the entire world, developed and developing countries alike. They are integrated and indivisible and balance the three dimensions of sustainable development.⁽³²⁵⁾

— 2030 Agenda for Sustainable Development

One universal agenda and diverse ways of knowing and being

Transforming our world: the 2030 Agenda for Sustainable Development brings together biodiversity conservation, climate change and sustainable development under a common universal agenda, but in many countries they continue to be implemented and considered in silos rather than through a holistic approach. IPLCs will continue to be disproportionately impacted if the Aichi Biodiversity Targets and SDGs are not met. Nonetheless, these goals can empower IPLCs to overcome vulnerability and exclusion, through the power of their collective actions, their self-determined development, and government support.

How does the sustainable development pledge of leaving no one behind connect with the vision of living harmony with nature by 2050, while keeping the increase in average global temperature well below 2°C above pre-industrial levels?

Paradoxically, solutions to this seemingly complex and intractable global challenge are surprisingly straightforward from the perspective of the world's indigenous peoples. By pursuing holistic solutions from within their own values

and cultures, caring for their homelands and nature,⁽³²⁶⁾ exercising their rights to self-determined development, and promoting respect for diversity and equity among peoples, indigenous peoples are practising the core principles of sustainable development.⁽³²⁷⁾ The more than 4,000 distinct indigenous peoples, with a collective population of about 476 million, represent the greater part of the world's cultural diversity, and have created and speak the major share of the world's almost 7000 languages,⁽³²⁸⁾ and, accordingly, embody a similar breadth of humanity's knowledge for living sustainability on Earth. Similar perspectives are advanced by many of the world's local communities who are living with collective attachments to their territories, and collective governance and knowledge systems.

The UN General Assembly in a follow-up resolution to the 2030 Agenda for Sustainable Development,⁽³²⁹⁾ '[re]affirms the role of culture as an enabler of sustainable development that provides people and communities with a strong sense of identity and social cohesion and contributes to more effective and sustainable development policies and measures at all levels, and stresses in this regard that policies responsive to cultural contexts can yield better, sustainable, inclusive and equitable development outcomes.'

The following conclusions from the most recent scientific global assessments about the current state of biodiversity and climate change⁽³³⁰⁾ highlight the significant role of IPLCs in addressing the interrelated biodiversity, climate change and sustainable development crises:

'The challenges of mitigating and adapting to climate change while achieving food, water, energy, and health security, and overcoming the unequal burdens of environmental deterioration and biodiversity loss, all rest on a common foundation: living nature. Specifically, we consider the fabric of life on Earth that has been *woven* by natural processes over many millions of years and in conjunction with people for many thousands of years. The vital contributions made by living nature to humanity, referred to as nature's contributions to people, affect virtually all aspects of human existence and contribute to achieving all the Sustainable Development Goals identified by the United Nations.

Declining trends are also documented in a worldwide evaluation of 321 indicators of nature important for quality of life developed by Indigenous Peoples and local communities. Although the decline in nature is lower in areas managed by Indigenous Peoples than in other lands, ~72 per cent of the indicators assessed show deterioration.

The vast area of the world managed by Indigenous Peoples under various property regimes is no exception to these trends. Because of their large extent, the fact that nature is overall better preserved within them, and because of the diverse stewardship practices carried within them around the world, the fate of nature in these lands has important consequences for wider society as well as for local livelihoods, health, and knowledge transmission.'⁽³³¹⁾

“Indigenous peoples have mastered the art of living on the Earth without destroying it. They continue to teach and lead by example, from the restoration of eel grass⁽³³²⁾ and salmon by the Samish Nation,⁽³³³⁾ to the bison reintroduction by the Kainai Nation of the Blackfoot Confederacy,⁽³³⁴⁾ to the restoration of traditional 800-year-old Hawaiian fish ponds.⁽³³⁵⁾ We must heed these lessons and take on this challenging task if we want our grandchildren to have a future.”

— Jon Waterhouse, Indigenous Peoples Scholar at the Oregon Health and Science University and a National Geographic Education Fellow Emeritus and Explorer⁽³³⁶⁾

Mainstreaming indigenous peoples’ rights in the transformation agenda

The 2030 Agenda for Sustainable Development entails a whole-government, whole-economy and whole-society approach. Five years after the adoption of the agenda, how well has it succeeded in engaging and mobilising all peoples on the road to transformation?

The Indigenous Peoples Major Group for Sustainable Development has reported that ‘Many of the Voluntary National Reports acknowledge the groups of those left behind, but do not provide mechanisms for the meaningful participation and the full inclusion of their needs and priorities. Further, many countries did not even mention indigenous peoples as distinct marginalized groups and no reference to their collective rights and contributions to sustainable development. The top-down approach to SDG implementation, the lack of policy coherence, the disconnect between State’s accountability to their human rights obligations, and the strong emphasis on economic growth are some of the key obstacles in reaching those left behind including indigenous peoples. In fact, there is a continuing lack of awareness of the SDGs at the grassroots level including in indigenous territories.’⁽³³⁷⁾

Indigenous peoples comprise six per cent of the global population, 15 per cent of the poorest in the world, and one third of the rural poor; they also face high levels of discrimination and are generally left behind in most countries where they live.⁽³³⁸⁾ While contributing the least to global warming, they suffer disproportionate impacts of climate change. Most of the world’s remaining biodiversity overlaps their lands, waters and territories, which are underpinned by their spiritual values and cultures honouring the living and sacred Earth.

IPLCs make distinctive contributions to meeting global goals in an integrated and holistic way. Placing IPLCs at the centre of implementation delivers a triple win, bringing together the fulfilment of human rights and wellbeing, the conservation and sustainable use of biodiversity, and the maintenance of natural ecosystems to manage climate change. Indicators on the rights and wellbeing of IPLCs constitute important measures of progress in the implementation of the global agenda for change.

Nonetheless, IPLC community-based economic, conservation, and development initiatives are contributing daily to achieving not only the Aichi Biodiversity Targets but also the SDGs and the Paris Agreement. These global goals

and targets are all closely related to each other in the everyday lives of IPLCs and in their day-to-day efforts to overcome marginalisation and to assert their collective actions to solve the biosphere and climate change crisis.

In Pope Francis's encyclical on care for our common home,⁽³³⁹⁾ he underlines the unique historical and cultural context shaping peoples' development from within their culture:

'144. ... There is a need to respect the rights of peoples and cultures, and to appreciate that the development of a social group presupposes an historical process which takes place within a cultural context and demands the constant and active involvement of local people from within their proper culture. Nor can the notion of the quality of life be imposed from without, for quality of life must be understood within the world of symbols and customs proper to each human group.

[...]

146. In this sense, it is essential to show special care for indigenous communities and their cultural traditions. They are not merely one minority among others, but should be the principal dialogue partners, especially when large projects affecting their land are proposed. For them, land is not a commodity but rather a gift from God and from their ancestors who rest there, a sacred space with which they need to interact if they are to maintain their identity and values. When they remain on their land, they themselves care for it best. Nevertheless, in various parts of the world, pressure is being put on them to abandon their homelands to make room for agricultural or mining projects which are undertaken without regard for the degradation of nature and culture.'

Indigenous peoples have stated that self-determination and sustainable development are 'two sides of the same coin',⁽³⁴⁰⁾ strongly asserting the transformative power of agency and self-determination. Rigorously applying a human-rights-based approach in the implementation of the global transformative agenda empowers the agency and voice of those currently left behind, thus overcoming the limited framework of vulnerability and marginalisation.⁽³⁴¹⁾

Fundamentally, a human-rights approach to poverty is about empowering the poor. While the common theme underlying the experiences of poor people is one of powerlessness, human rights empower individuals and communities by granting them entitlements that give rise to legal obligations on others. Provided the poor can access and enjoy them, human rights can help to equalise the distribution and exercise of power both within and between societies. In short, human rights can mitigate the powerlessness of the poor.⁽³⁴²⁾

IPLC contributions to biodiversity, climate change and sustainable development

‘Indigenous peoples and local communities embody humanity’s creative intelligence and wisdom in our care and love for Mother Earth. We are on the frontlines to protect the world’s remaining biodiversity, and many of our leaders have been killed defending human rights and the environment.’

— International Indigenous Peoples Forum on Biodiversity at the UN Biodiversity Conference (November 2018)

IPLC contributions to biodiversity, climate and sustainable development have started to be recognised as highly significant in global reports such as the *IPBES Global Assessment on Biodiversity and Ecosystem Services*, as compiled in Table 2, confirming and complementing IPLC experiences and many research studies documented in Part 2 of this report.

Given their direct material and cultural links to the environment, IPLCs are, and will continue to be, disproportionately impacted if the Aichi Biodiversity Targets and the SDGs are not met. Furthermore, formal incorporation of IPLCs, their many locally attuned management systems, and indigenous and local knowledge into environmental management has been shown to offer effective means to reduce environmental degradation.

Examples of negative impacts on IPLCs from insufficient progress towards meeting the Aichi Biodiversity Targets and the SDGs include:

- Continued loss of subsistence and livelihoods from ongoing deforestation (Target 5; SDG 15) and from unsustainable fishing practices (Target 6; SDG 14);
- Impacts on health from pollution and water insecurity (Target 8; SDGs 6 and 12).

Examples of IPLC contributions to sustainable environmental management include:

- Community forestry initiatives (Target 7; SDG 12);
- Traditional agriculture and aquaculture systems (Target 7; SDG 12);
- Indigenous peoples’ and community conserved territories and areas, or CCAs (Target 11; SDGs 14 and 15);
- Integration of indigenous and local knowledge into invasive and threatened species’ management (Targets 9 and 12; SDGs 14 and 15);
- Conservation of the genetic diversity of wild and domestic animals and plants through market and non-market exchanges (Target 13; SDG 2).

These contributions to the attainment of the SDGs are presented in Table 2 as informed by the *IPBES Global Assessment on Biodiversity and Ecosystem Services*.

Table 2: Examples of IPLC contributions to the UN Sustainable Development Goals

SDG #	Examples of IPLC practices/systems
SDG 1	<ul style="list-style-type: none"> ○ IPLCs are the main actors in win-win solutions addressing biodiversity conservation and climate mitigation while improving income level (so-called triple benefits). ○ IPLCs traditional institutions, indigenous and local knowledge, and management practices help to mitigate the effects of poverty and vulnerabilities and to adapt to natural disasters and global changes.
SDG 2	<ul style="list-style-type: none"> ○ Traditional farming systems that exploit biodiversification, soil and water management have helped IPLCs to achieve food security through sustainable agricultural production.
SDG 3	<ul style="list-style-type: none"> ○ Medicinal indigenous and local knowledge has contributed to the discovery of active principles for drug development to treat non-communicable and infectious diseases, including AIDS, neglected tropical diseases, hepatitis, and water-borne diseases.
SDG 6	<ul style="list-style-type: none"> ○ IPLCs have developed complex customary institutions for governing and managing freshwater resources in sustainable ways. ○ Water management systems based on indigenous and local knowledge are diverse, and include time-honoured practices such as rainwater harvesting, small-scale traditional water purification methods, forestry-based groundwater recharge, and complex river zoning systems. The strong cultural connections that IPLCs maintain with their freshwater bodies have allowed them to closely monitor water availability and quality.
SDG 11	<ul style="list-style-type: none"> ○ IPLCs can contribute to social-ecological resilience and to a sustained flow of ecosystem services in changing urban contexts, as shown in examples from European cities during World Wars I and II, and from Havana, Cuba, after the end of the Soviet Union. ○ IPLCs can make cities safer by improving disaster risk detection and management, and scholars have defended the importance of integrating indigenous and local knowledge into risk assessment and management programs. ○ IPLCs and indigenous and local knowledge are increasingly being valued in sustainable urban planning and design, and this needs to continue. Efficient methods for doing so are emerging.
SDG 12	<ul style="list-style-type: none"> ○ Through their low degree of involvement with mass production and consumption, IPLCs are not a driving force of the global environmental change from which they nevertheless disproportionately suffer. ○ Greater consideration is needed of alternative visions (including those of IPLCs) of what it means to prosper and to live well, rather than in material abundance.

SDG 13	<ul style="list-style-type: none"> ○ The potential of combining indigenous and local knowledge and scientific knowledge to design successful climate adaptation policies is increasingly acknowledged; however, there are few efforts to make IPLCs aware of the scientific approaches being promoted to combat climate change impacts, and examples of initiatives aiming to integrate indigenous and local knowledge into climate policies are still rare.
SDG 14	<ul style="list-style-type: none"> ○ IPLCs have a deep knowledge of marine ecology which can help to sustainably manage marine ecosystems, including coral reefs and mangroves. However, traditional marine management regimes can also result in intense resource exploitation, for which researchers have warned against the indiscriminate use of indigenous and local knowledge.
SDG 15	<ul style="list-style-type: none"> ○ IPLCs contribute to the maintenance and enhancement of land-based ecosystems through management practices that focus on ecological processes; multiple-use agroforestry; sustainable logging and hunting; fire management; protection and management of culturally significant trees; and long-term monitoring. ○ Biodiversity can be of spiritual importance to IPLCs; it also makes cultural landscapes and agro-ecosystems more resilient to climate change. ○ IPLCs have fought desertification and soil erosion through indigenous initiatives, some of them rooted in a long-term relationship with their environment. This includes selecting plants for resistance to drought; keeping spiritually relevant patches of forest to halt soil erosion; building and maintaining traditional irrigation systems; using their traditional knowledge on soil types and conditions; and building terraces. ○ IPLCs can play a key role in monitoring land degradation and soil conditions, and in rehabilitating land.

Disaggregated data and community-based monitoring: the Indigenous Navigator project

xx. Indigenous Peoples Major Group for Sustainable Development (n.d.) Indigenous Peoples Major Group for Sustainable Development. Baguio and San Francisco: Indigenous Peoples Major Group for Sustainable Development. Available at: <https://indigenouspeoples-sdg.org/index.php/english/>

A consortium of regional and international indigenous peoples' organisations and supportive networks, human rights institutions, and the International Labour Organization (ILO), with support from the European Union, have joined forces to promote indigenous peoples' rights through systematic generation of data on indigenous peoples' rights and development.⁽³⁴³⁾ The Indigenous Navigator project^(xx) addresses the lack of disaggregated data reflecting realities of communities to inform decision-making on policy development and implementation. The project monitors the implementation of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP); relevant international human rights conventions, including ILO No. 169; the UN SDGs; and outcomes of the World Conference on Indigenous Peoples.

“The Indigenous Navigator is a participatory monitoring tool not only on the respect of indigenous peoples' rights but also in documenting how indigenous peoples are contributing to sustainable development through their traditional resource management practices and innovations. It will generate data to reflect the realities on the ground which can be used to make states to account and to promote the self-determined development of indigenous peoples.”

— Joan Carling, Co-convenor, Indigenous Peoples Major Group for Sustainable Development

Through the Indigenous Navigator, the significant experiences of indigenous communities from 11 countries: Bolivia, Peru, Colombia, Suriname, Cameroon, Kenya, Tanzania, the Philippines, Nepal, Cambodia and Bangladesh, show how they have been addressing their priority issues and concerns.

Figure 7 shows the varying needs and priorities of communities involved in the project, which were identified through community-designed projects in the 11 countries, and which include:

- Legal recognition
- Health and wellbeing
- Education, language and culture
- Income, production and food sovereignty
- Governance, leadership and institutions
- Land tenure, environmental protection and access to natural resources
- Access to social services
- Equality, justice and political participation
- Free, prior and informed consent
- Migration, and empowerment of disadvantaged communities
- Empowerment of women and youth.

How these community needs and priorities link to the SDGs, according to 40 communities from the 11 countries implementing the Indigenous Navigator is shown in Table 3. SDG 15, Life on Land, stands out as the primary target for IPLCs. Other equally important goals relate to poverty, inequality, gender equality, quality education, good health and wellbeing. The need to deal with climate change, peace, justice and strong institutions were also considered important.^(xxi)

xxi. The chart provides a sense of trend and status of how IPLCs look into these matters.

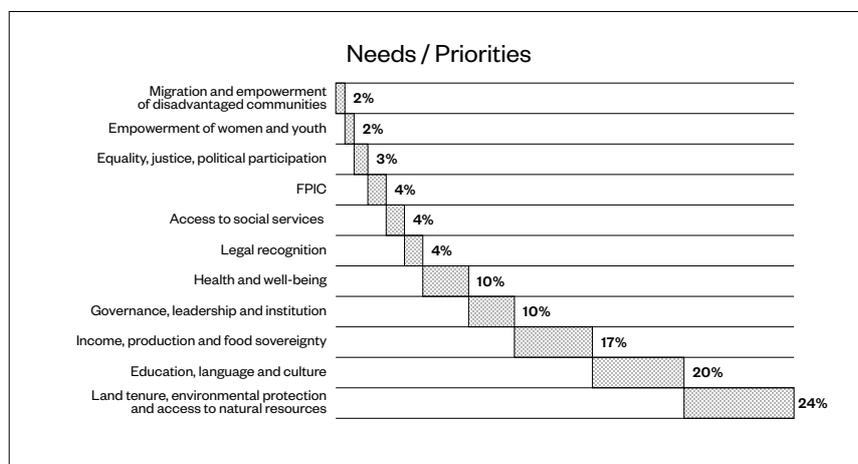


Figure 7: Community needs and priorities identified by indigenous communities in 11 countries through the Indigenous Navigator

The Indigenous Navigator data shows that the communities are strongly affected and highly concerned about issues relating to their land tenure, environmental protection and access to natural resources (about 24 per cent); education, language and culture (20 per cent); and income, production and food sovereignty (17 per cent). Related issues, while they may appear to be of much less concern (10 per cent and below) are equally relevant to the communities.

Table 3 shows how the SDGs prioritised for implementation in the 11 countries map to their community projects (a project may relate to one or more SDGs). The Indigenous Navigator data allowed them to identify and highlight their concerns at the local, national and international level. The project development process empowered the community to generate data and to confidently engage with key stakeholders to demand policy change linked to SDGs, to climate change and to the UNDRIP. Provisions under the UNDRIP linked to SDGs include rights to self-determination; distinct customary political and economic institutions; right to development; right to spirituality; right to identity; education and transmission of knowledge; conservation and protection of environment without discrimination; and access to technical and financial assistance.

Table 3: SDGs targeted by the 11 countries implementing Indigenous Navigator projects in selected communities

SDG #	Bangladesh 10 projects	Bolivia 4 projects	Cambodia 3 projects	Cameroon 1 project	Colombia 5 projects	Kenya 6 projects	Nepal 6 projects	Peru 7 projects	Philippines 6 projects	Suriname 4 projects	Tanzania 4 projects
1: No Poverty	●	●			●		●	●	●		●
2: Zero Hunger	●	●			●	●	●	●			●
3: Good Health and Well-being	●			●	●	●	●	●		●	●
4: Quality Education	●	●	●	●			●		●	●	
5: Gender Equality	●				●		●	●			
6: Clean Water and Sanitation		●		●				●			●
7: Affordable and Clean Energy			●								
8: Decent Work and Economic Growth	●				●			●			
9: Industry, Innovation and Infrastructure					●						
10: Reduced Inequalities	●			●		●	●	●			
11: Sustainable Cities and Communities					●				●	●	
12: Responsible Consumption and Production					●						
13: Climate Action					●			●			●
14: Life Below Water									●		
15: Life on Land	●		●	●	●	●	●	●	●	●	
16: Peace, Justice and Strong Institutions	●			●			●		●	●	●
17: Partnerships For The Goals					●			●			●

Communities' experiences with the Indigenous Navigator

The following cases show how communities in Peru and Cameroon have used the full potential of the Indigenous Navigator to generate data, analyse their situation, and come up with strategies and solutions to address their issues and concerns. In Peru, the Academy of Leaders (*Sharian*) of the Wampis Nation shows how the youth were inspired to emerge as leaders and knowledge-bearers (Box 49). In Cameroon, the lack of citizenship rights among the Baka, Bagyeli and Bedzang peoples starkly illustrates the knock-on impacts and restrictions on the enjoyment and exercise of economic, social and cultural rights as a *non-citizen* in your own country (Box 50).



● Young members of the Wampis Nation at a meeting. Credit: Pablo Lasansky.

Case study: *Sharian*; the Wampis Academy of Leaders, Peru

The *Sharian* Academy of Leaders is an initiative of the Autonomous Territorial Government of the Wampis Nation (GTANW) to cultivate young leaders who, in the future, can promote the autonomous development of the Wampis Nation based on solid knowledge of its socio-cultural elements and indigenous peoples' human rights. It prepares leaders with an integral, holistic, broad and intercultural formation—leaders who are committed to the future vision of their people and imbued with the values of their cultural roots.

Youth are the essential successors who will take up the mantle of responsibility and continue the work as they become leaders of their communities. The concern for incorporating young people in the future governance of the territory resulted from reflections by Wampis communities motivated by the Indigenous Navigator questionnaire. The GTANW Summit held in November 2017 collectively prioritised the *Sharian* Academy of Leaders project.

Forty young people aged 18–35, including eight women, were selected based on agreed criteria. The GTANW designed a curriculum consisting of two programs: one is focused on the study of socio-cultural elements in the field, and is taught outside of the classroom; the other program teaches human rights and indigenous peoples' rights.

“My main inspiration is the many leaders, like my father, who have been fighting in defence of our territory. However, all of them will at some point grow older and leave us, and we as young people must continue these processes and duties that our leaders have assumed. I also see that my father is interviewed by people from other countries and I also want to follow my father’s example to continue fighting and defending our territory. That is why the initiative of training community youth is very important. You learn a lot and, in the future, it is us who will be the ones who will assume that path of struggle.”

— Katse Lili Noningo Antich, 17-year-old Wampis woman

The new leaders will develop their capacity to participate in what will be the Municipal Legal Observatory, which will act as a support body for the Wampis Assembly, gathering the concerns of the community members and information about the fulfilment of the agreements between the GTANW and the municipalities. To that end, the project also includes consultation activities with local governments.



Box 50: Gbabandi, Okani and Forest Peoples Programme

Baka, Bagyeli and Bedzang women participating in a national workshop on indigenous rights and biodiversity. Credit: Adrienne Surprenant.

Case study: The right to citizenship among Baka, Bagyeli and Bedzang in Cameroon

Indigenous Baka, Bagyeli and Bedzang peoples in Cameroon have joined forces to represent themselves through a national platform of indigenous forest peoples' organisations, under the name of Gbabandi. The communities used the Indigenous Navigator survey tools to address the lack of official data on the situation of indigenous peoples in Cameroon, prioritising the issue of citizenship under SDG Target 16.9, which aims to provide a legal identity to all, including free birth registrations, by 2030.

This work involved 40 Baka and Bagyeli communities located in a 700-kilometre-long rainforest area, running from the far east of the country to its western coast. These communities represent about 25 per cent of the total estimated Baka population and 19 per cent of the total estimated Bagyeli population. Citizenship status affects indigenous peoples' participation in many aspects of public life. In Cameroon, one or more key citizenship documents (such as a birth certificate, national identity card, or electoral card) are required if one is to be able to enrol children in school, move freely around the country, vote, apply for jobs, and perform many other essential life activities.

The consequences in terms of access to justice and environmental governance are also important. In the 40 communities who were part of the study, 66 per cent answered that they had not been able to start any legal action to defend their rights, while an additional 23 per cent said they could do so 'only to a lesser extent', because they lacked citizenship documents.

Data collected by Gbabandi revealed that about 69 per cent of indigenous children under five do not have their births registered, compared to the national average of 31 per cent, and that about half of all adults (slightly more women than men) do not have valid documents attesting to their citizenship.

The lack of access to citizenship documents are due to:

- The distance of indigenous communities from citizenship offices where births are registered and national identity cards obtained;
- The cost (both direct and indirect) of obtaining these documents;
- The complexity of the process, particularly for those who were not registered at birth and must, therefore, engage judicial procedures to obtain a birth certificate.

Low literacy levels and the lack of awareness among indigenous communities about the role and function of citizenship documents are also among the contributing factors.

These statistics are even more disturbing in light of the high number of rights violations suffered by indigenous forest communities in relation to access and use of traditional territories. About 94 per cent of the communities surveyed experienced conflicts related to land or natural resources, such as: illegal forest exploitation or other illegal activities (66 per cent); national park or protected area development (31 per cent); large-scale industrial agriculture (23 per cent); extractive industries (nine per cent); and infrastructure (six per cent).

The problem of lack of citizenship prompted the Indigenous Navigator project in Cameroon to accompany 500 Baka and Bagyeli youth in the processing of their birth certificates. Also included are training for community liaisons and traditional midwives on the importance of birth registration, and dialogues with local and national governments, and other actors, to foster collaboration in simplifying birth registration procedures for indigenous peoples.

Opportunities and recommended actions

The first SDG Summit, charged with taking stock of progress in the first four years of implementation of the 2030 Agenda for Sustainable Development, was held in September 2019 at UN Headquarters in New York. Accordingly, the first quadrennial global sustainable development report, entitled *The future is now: Science for achieving sustainable development*, authored by 15 independent scientists, was released.⁽³⁴⁴⁾

The report cautioned that recent trends show that the world is going backwards on inequality, climate change, biodiversity loss, and ecological footprint; and is increasing waste and pollution.

It states: ‘Some of those negative trends presage a move towards the crossing of negative tipping points, which would lead to dramatic changes in the conditions of the Earth system in ways that are irreversible on time scales meaningful for society. Recent assessments show that, under current trends, the world’s social and natural biophysical systems cannot support the aspirations for universal human well-being embedded in the Sustainable Development Goals.’

Policymakers were urged to consider the SDGs holistically, grasping the opportunity to see links between various targets and goals in the SDGs, and to further reflect on the underlying systems that need to be addressed. The report highlighted six entry points and four levers for change towards stepping up progress in implementation of the SDGs.

The six entry points:

- Human wellbeing and capabilities
- Sustainable economies
- Energy decarbonisation and access
- Food and nutrition
- Urban and peri-urban development
- Global commons.

The four levers for change:

- Governance
- Economy and finance
- Individual and collective action
- Science and technology.

Economy and finance, similar to science and technology, are to be pursued not as ends in themselves but as means to address society's priorities. Each lever, combined with each entry point for transformation, comprises a context-specific pathway to be identified and agreed by relevant actors in different governance spaces.

The following recommendations take into account such global guidance, while linking it with the situation of IPLCs as described in this report:

- IPLCs should scale up individual and collective actions in the exercise of self-determination and sustainable development, guided by their cultural and spiritual values and care for their homelands and nature.
- IPLCs should renew and deepen holism and integration in intergenerational knowledge creation and problem-solving, promoting understanding of the linkages between: nature and culture; local and global; self-determination and partnership; and immediate and long-term actions.
- IPLCs should deepen and widen the use of community-based monitoring and information systems as a tool for self-governance, and for increased transparency and accountability of all actors at all levels, building the evidence base and knowledge for transformation, while being inclusive of elders and youth, women and men, and persons with disabilities.
- Governments and all actors should apply human rights and democratic principles at all levels of governance—ensuring holism, inclusiveness and social justice in addressing biodiversity and climate challenges—thus securing multiple benefits across society.
- All actors should develop partnerships for generating knowledge and for sustainable and equitable outcomes through: respecting and recognising indigenous and local knowledge and other knowledge systems as complementary to sciences; community participatory research; education for sustainable development; appropriate and innovative technologies; and creating multi-actor knowledge platforms.



● A young man from the Wampis Nation speaks at a meeting. Credit: Pablo Lasansky.

Key resources

- Indigenous Navigator (2017) *Making the Sustainable Development Goals work for indigenous peoples via community-generated data*. Baguio: Indigenous Navigator. Available at: <http://nav.indigenousnavigator.com/images/Press/27-april-2017-press-release-making-the-sdgs-work-for-Indigenous-peoples.pdf>
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- United Nations Environment Programme (2017) *Indigenous people and nature: a tradition of conservation*. Nairobi: United Nations Environment Programme. Available at: <https://www.unenvironment.org/news-and-stories/story/indigenous-people-and-nature-tradition-conservation>
- Raygorodetsky, G. (2018) *Indigenous peoples defend Earth's biodiversity—but they're in danger*. Washington, D.C.: National Geographic. Available at: <https://www.nationalgeographic.com/environment/2018/11/can-indigenous-land-stewardship-protect-biodiversity/>



Part IV

← ●
A Fulani family watering seedlings in Mali. Credit:
Giacomo Pirozzi.

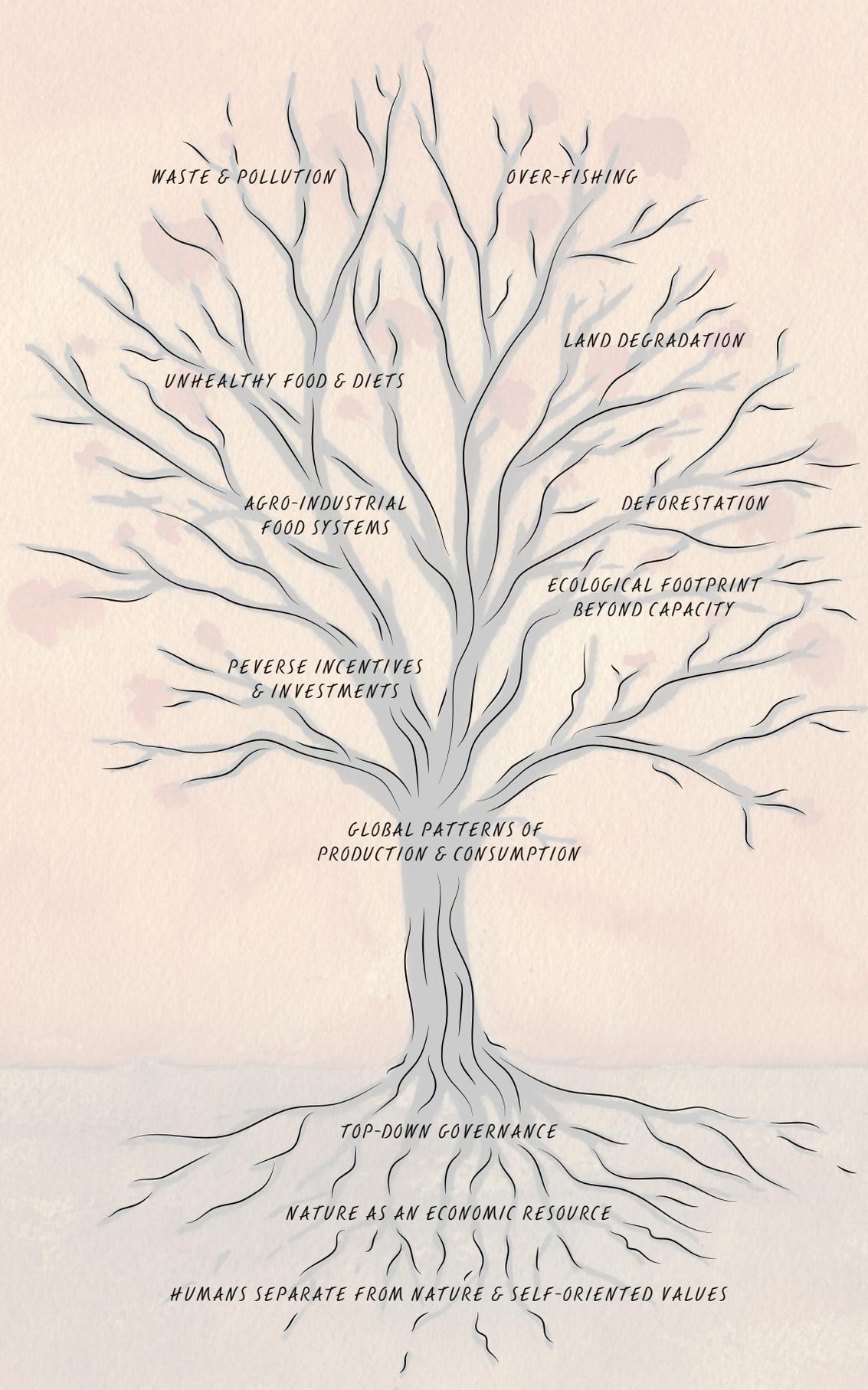
Transitions towards living in harmony with nature

IPLCs and biodiversity under threat

IPLCs today are acutely experiencing the loss of both biological and cultural diversity. These losses stem from unsustainable global systems of values, knowledge, governance, production, consumption, technology, economics, incentives and trade, all underlain by unequal decision-making power about the future of nature and peoples. The recent IPBES Global Assessment states that ‘IPLCs are directly and disproportionately impacted by biodiversity loss and climate change’.⁽³⁴⁵⁾

In the problem tree the roots of the problem arise from the separation of humans from nature, and from individual interests and profit-making. The same could be said for nature being separated from human interaction whereby the landscape, biodiversity and ecosystems depend and sometimes rely on human interaction to continue thriving as a holistic system. Nature is seen as an economic resource to be exploited and its degradation is treated as an externality of mainstream economics. Governance links the roots and the branches. Decision-making controlled by elites and powerful vested interests is often linked to systemic corruption and distortions of democratic rule, with large parts of society left behind. Incentives and subsidies are feeding the growth of unsustainable production and consumption patterns, and industrial agriculture that results in unhealthy foods and diets. The branches of the tree represent negative consequences which characterise the current biodiversity, climate and sustainable development crises, including deforestation, land degradation, over-fishing, water scarcity, waste and pollution.

Encroachment on and disruption of natural ecosystems and current industrial agricultural practices have also given rise to unprecedented opportunities for increased prevalence of multiple zoonotic diseases,⁽³⁴⁶⁾ including coronaviruses, the latest causing COVID-19.⁽³⁴⁷⁾ The worldwide COVID-19 pandemic has exposed the vulnerabilities and lack of resilience of human health systems, simultaneously impacting economic and trade systems, financial systems, food systems, and social and political systems. These systemic and interrelated problems call for joined-up solutions that do not lock in *business as usual* approaches, challenging humanity to urgently re-envisage and renew our social and cultural relationships with each other and with nature.



● Problem tree of the current social-ecological crisis. Credit: artwork by Agnès Stienne

Box 51: Adiwasi Samta Manch

Baiga women collect leaves in the forest. Credit: ephotocorp.



Case study: Baiga people living with Earth, central India

We, indigenous Baiga Adivasis in central India, have lived by the forest, allowing its biodiversity to regenerate. Access to our customary sustainable use of biodiverse forest as our life-source is, however, threatened by forestry, mining, ecotourism and other commercial purposes which capture our jungles.

We are classified as a Particularly Vulnerable Tribe among India's more than 100 million indigenous tribal people. Among vulnerable Adivasi communities, the percentage of malnourished children suffering from stunting and wasting belongs to the highest in the world as we become displaced from our sustainable, biodiverse sources of food, health, shelter and livelihood.

To save our biodiverse life-sources, our Bohil and Sarhapathra Baiga communities in Pandariya, in the Kabirdham district of Chhattisgarh State, developed biocultural community protocols (quoted below) on our customary sustainable use and conservation of biodiversity, our customary tenures and our traditional occupations.

‘Our village is situated on mountainous terrain. Our main livelihood source is gathering from forest and *Bewar*, our ancient shifting cultivation. From Jungle we bring many types of leaves of 42 edible species, also some flower leaves. Other leaves are found in marshy land. We have also technique of preserving them. Many leaves have high nutritional content and some also medicinal properties.

We know 93 medicinal plants we get from jungle to heal or prevent diverse health problems of stomach, breathing, digestion, malaria, fever, vein contractions, birth delivery pains, joint pains, snake bite, bone fractures and diseases of domestic animals. But many medicinal plants are now getting extinct. We are now in the process of reviving and restoring some of them. Jungle is our natural medicine house. Other people use the word *Baiga* also as a generic term for indigenous healers.

Collection of minor forest produce from the forest is the mainstay of our livelihood. Our jungle gives us several fruits of 35 identified species and 17 mushroom species. Our land beneath forest provides us various types of tuber roots of 28 edible species, mostly wild. Also ropes, green utensils, brooms and necklaces are made from leaves. Soil, wood, grass and bamboo we gather to build houses, fences and straw-roofs. We use soil also to clean walls, wood for tools, and bamboo for baskets and handicrafts. Jungle's 14 timber species are protected best in our hand.

In our land and forest we also do *Bewar*, or shifting cultivation, which makes our earth more biodiverse. *Bewar* produces 33 grain crops of millets, lentils, oilseeds, roots and other tasty and nutritious vegetables. *Bewar* recognises that earth is a living being and not an inanimate thing and ensures its maintenance of fertility. Earlier we used to do only *Bewar*, collecting forest produce and hunting. The entire village was surrounded by dense and deep forest when managed only by us. Now due to restrictions put by government, who has cut and displaced biodiverse forests, *Bewar* is suppressed and only hunting of few birds and catching fishes are allowed.

We can't live without jungle, so earlier we used to go to places with dense forest and many times they were sloped and mountainous, so here to survive we used to do *Bewar*. We have learnt from our ancestors that, like us, land too needs rest. Leaving land fallow for at least three years in succession, *Bewar* gives rest to it. While cultivated area provides us millets, lentils, leaves, tuber-roots and vegetables to survive, in fallow there is growth of different varieties of wild roots, young minor forest produce-bearing trees and also a millet *Sikia* grows on its own in fallow.

As our rights to sustain our biodiverse *Bewar*-based food plant varieties are threatened, it is all the more important to restore our *Bewar*. Earlier, we used to get more than enough from *Bewar* and we used to buy only salt and clothes. Today, we have to buy few more things which are neither tasty nor nutritious. What we get in market are unnatural things which make us prone to diseases. *Bewar* is much better and we do not fall sick after eating. Even though we don't have money, we are happy and largely content. By exchanging what *Baigas* find from forest, they get many things from the market without currency, and many of the work we perform are carried out collectively, like making of huts or houses or roofing, without money wages.

Our existence is inextricably intertwined with jungle since eternity. We cannot imagine life without jungle and we derive our very identity from it. We have living relationship with its trees and plants above and below the Earth's surface, animals, insects, birds, with mountain, river, air, land and all things which are as living as we. Also thorny plants and creepers in our jungle and shrubs which are of no direct use to us have their identity and right to exist like us. Their presence on Earth is as important as ours. Some animals give us signal of immediate future, too.

To save Earth's diverse life, we dig out medicinal roots and herbs and take out seeds and fruits only after they ripen, and leave some so that they can again grow. We protect jungle from forest fire and forest *mafia*, and guard that we take only that much which can take care of our subsistence need, leaving enough also for birds and other living beings.

From our birth till death (and afterlife too), our land, jungle, with its biodiversity, plays all-pervasive role and defines our very identity and existence. We never consider ourselves as owner of forest but we think our identity and existence is linked with the forest.

We in Bohil and Sarhathra are *Bhumiyas*, people who are Earth's own, custodians of Earth's life. Forest is our home where we live, work and spend most of our time. We can't live without jungle but have a strong linkage to jungle with its biodiversities from our birth to death. Before woman gives birth, *Maibell* roots is given to her to chew, to increase the immunity and manage the pain. After giving birth she is fed with *Bewar* produce for five days.

We have lived by regenerating diversity of Earth's life without displacing it. Our customary sustainable use and conservation of life's diversity is maintained by our customary tenure and traditional occupations. But we fear that people from outside will come and take our natural resources and may even evict us.

As some others do not like our *Bewar*, so first of all we need end of fear in carrying out *Bewar*. Government should re-recognise our *Bewar* to be secured as it is good for conservation of biodiversity of crops and wild plants, making also diverse ages of young fallows to grow side by side when duly allowed to shift and rotate. It sustains biodiverse cultivations as free of chemical fertilisers and pesticides which lead to several types of diseases and tasteless food.

Having now very little land left and not much scope left to rotate, we can leave fallow only one patch and return to it after every 3–4 years. Earlier we used to shift from one village to another but now it is not possible. Without adequate land for *Bewar*, we must supplement our food production by ploughed fields and less biodiverse cultivations.

Government should help us making our forest more biodiverse and minor forest produce-rich, compliant to our forest management plans; recognise our traditional livelihood practices, skills and traditional knowledges as our collective property; and respect our Bio-Cultural Community Protocol compliant to its international commitments.

What people need for living in harmony with Earth and to save its life's diversity, are rights to live by regenerating.⁷⁽³⁴⁸⁾

This presentation of Baiga communities' contribution to the sustainable use and conservation of biodiversity addresses particularly the issues of Aichi Target 18 on how customary sustainable use and conservation of biodiversity can be advanced by customary tenures and traditional occupations like gathering, shifting cultivation, and hand-crafts. But it also addresses the contribution of *Baigas* on their living experiences of protecting, governing and managing their lands and forests as relevant to Aichi Targets 1, 5, 7, 8, 11–16 and to SDGs 1, 2, 3, 5, 10, 11, 12 and 15.

Nature and culture transitions towards the 2050 vision

The values; ways of life; knowledge; resource governance and management systems; economies; and technologies of IPLCs have much to offer in addressing the biodiversity, climate and sustainable development crises, and in reimagining the diverse global systems that can deliver shared visions of solidarity and of *no one left behind*. IPLCs propose changes towards more balanced relationships within societies and with nature through six key transitions:

1. Cultural transitions towards diverse ways of knowing and being
2. Land transitions towards securing customary land tenure of IPLCs
3. Governance transitions towards inclusive decision-making and self-determined development
4. Incentives and financial transitions towards rewarding effective culture-based solutions
5. Economic transitions towards sustainable use and diverse local economies
6. Food transitions towards revitalising indigenous and local food systems.

Each of these transitions addresses specific urgent issues and contains its own dynamics, but all six transitions are systemically linked to each other; indeed, no single transition can succeed alone, and they need to take place simultaneously, and be deployed in mutually reinforcing ways, to maximise the potential for transformation. These transitions have now become imperatives for the survival of IPLCs and the continued health of the biosphere, the limits of which have been breached.

In order to bend the curve of biodiversity loss, we need to bend the curve of inequality and ensure the equitable sharing of benefits and costs. To achieve the vision 2050, there is a need for a paradigm shift in terms of values at the center/core of society that influence their behaviour for a transformation towards a responsible and sustainable society.

— International Indigenous Forum on Biodiversity^(3,49)

Cultural transitions towards diverse ways of knowing and being

Vision

Humanity's diverse ways of living, knowing and being in nature are celebrated, promoting plural values and worldviews across our economic, political and social systems, thereby securing the mutual resilience of nature and society. The diverse cultures of IPLCs inform and inspire the blossoming of new cultural narratives that locate humanity within a living, intelligent and sacred world.

Education for sustainable development is universal and the importance of biodiversity and cultural values are widely understood. People everywhere have relevant information, awareness and the capacity for sustainable development and lifestyles that are in harmony with nature.

Rationale

[Culture is] ... the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, and [...] it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs.

— UNESCO⁽³⁵⁰⁾

Culture conditions our behaviours and frames our relationship to others in our society and the world around us, including the natural environment. Therefore, if sustainability is first and foremost about living with nature and using the Earth's resources in sustainable ways, then fostering diverse cultures of sustainability becomes a central strategy.

Biological diversity has co-evolved alongside humanity's creative intelligence, manifested in cultural diversity. Today, most of the world's remaining biodiversity is on the lands, waters and territories of indigenous peoples, a testimony to their cultures of guardianship and resilience.

But indigenous and local cultures, knowledge systems, practices and technologies are not well understood and are deprecated as static and unchanging. Prevailing values, cultural and education systems, drilled in the dominant worldview of science and technology and the mastery of nature, have been distanced from older ways of living, knowing and being in nature. Many indigenous languages, which were banned in modern schools, have been lost. Indigenous youth are educated to aspire for urban economic livelihoods and lifestyles, thus further undermining the vitality of indigenous communities. Important innovations in problem-solving by indigenous peoples are invisible or undervalued, and yet are vital cultural underpinnings of social and ecological transformation.

Contemporary societies can learn from indigenous peoples and local communities about how to be a part of the ecosystem, and how humanity can live as part of an intelligent and sacred world. New cultural narratives and visions of culture and nature working together can transform the current imbalance in human-nature relationships.

Education for sustainable development is recognised as a critical component of quality education in SDG 4: 'By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.'

Benefits of the transition

Fostering cultures of peace and co-operation within societies as well as peaceful co-existence with the natural world are important ethical dimensions of this transition. Social discrimination and inequalities embedded in contemporary worldviews, economics and politics are profoundly out-dated in today's interdependent world. As humanity is searching for solutions to the global crises of people and planet, IPLC values, alongside other spiritual traditions, have much to contribute to addressing the underlying causes of social inequality and biodiversity loss.

Culture is also a powerful agent enriching non-formal education and lifelong learning. When educational curricula are adapted to local conditions, education becomes a key to social change and transformation. Educational initiatives to mainstream indigenous culture, languages and values in both formal and community-based education are helping indigenous students to achieve better educational results by affirming their cultural identity, building their confidence for intercultural engagement in broader society, and supporting them in learning a broader range of skills and competences.⁽³⁵¹⁾

Dealing with rapid environmental and social change requires all sources of information and knowledge, and diverse ways of thinking, learning, adapting and transforming. Indigenous and local knowledges, together with the sciences, play critical roles in closing knowledge and technology gaps and directing the powers of innovation towards sustainable development. Combining insights and enabling exchanges across diverse knowledge systems creates richer under-

standings for complex problem-solving. By harnessing the powers of diversity and democracy as resources and enablers for change, it is possible to move beyond science-policy platforms towards robust knowledge-policy-society interfaces at local-global scales, thus making this a truly pan-human endeavour.⁽³⁵²⁾

Progress towards the transition and guiding examples

Indigenous peoples, through collective actions, are renewing their personal lives, cultures and institutions as part of broader transformations addressing 21st century crises of discrimination and social marginalisation; loss of land and biodiversity; and imbalanced relationships between people and nature. Their informed advocacy is elevating respect for indigenous peoples' rights and valuing of indigenous cultures in contemporary global policy decisions. Indigenous peoples are reclaiming their heritage and asserting their visions of self-determined development.⁽³⁵³⁾ Through intergenerational learning and transmission of knowledge—including language recovery and cultural reflection among elders and youth, men and women—emergent pathways to the future are being co-created by indigenous communities both in urban and rural areas.

Among the ground-breaking advances in recent years has been the inclusion of indigenous and local knowledges alongside the sciences, as complementary systems of knowledge for achieving fuller and richer understandings of biodiversity—its values, functioning, status, trends, and the consequences of its loss at different scales. Negotiating the power differential between science and indigenous and local knowledge, and overcoming the tendency to *integrate* or *synthesise* indigenous and local knowledge into science, without regard for its cultural context, is a major hurdle in building balanced collaborations and partnerships.⁽³⁵⁴⁾

At the global level, IPBES has adopted an approach on working with indigenous and local knowledge, which includes: procedures for assessing nature and nature's linkages with people; a participatory mechanism; and institutional arrangements for including IPLCs in its work. Likewise, at COP 14 Parties to the CBD adopted the Sharm El-Sheik Declaration on Nature and Culture,⁽³⁵⁵⁾ which acknowledges that 'cultural elements are a fundamental part of the life and cosmological vision of indigenous peoples and local communities, who actively pursue an intrinsic and balanced relationship between Mother Nature, human-beings and the Universe.'

In Pope Francis's 2015 encyclical on climate change and ecology,⁽³⁵⁶⁾ he reflects on the essential Catholic principle of valuing life and creation through an integral ecology addressing complex ecological and social crises, saying: 'If the present ecological crisis is one small sign of the ethical, cultural and spiritual crisis of modernity, we cannot presume to heal our relationship with nature and the environment without healing all fundamental human relationships.'

Examples of initiatives to indigenise education curricula for students in the Philippines and Latin America are presented in Box 52 and Box 53 respectively.



Box 52: Partners for Indigenous Knowledge Philippines

A woman works on a loom in Bontoc. Traditional crafts like weaving are being shared with new generations through initiatives organised by Partners for Indigenous Knowledge Philippines, and other organisations. Credit: Joerg Boethling.

Case study: Indigenous peoples' education in Filipino schools

Recent education policies in the Philippines open opportunities for teaching indigenous knowledge in schools, by recognising the right of indigenous peoples to culture-rooted education and by adopting the Indigenous Peoples Education Framework, which guides schools in localising, indigenising and enhancing the curriculum.

At Saint Mary's School of Sagada, Mountain Province, the curriculum includes community-based learning such as joining in traditional agricultural activities, sleeping in the *dap-ay* (physical house and centre of community decision-making) and massaging the elders' feet while interviewing them. These learning activities are documented in field notes and research papers which are then compiled into newsletters made available to the school and to the community.

Community-led initiatives for transmitting indigenous knowledge

Meanwhile, outside the schools, there is a growing, vibrant movement to revitalise the indigenous culture and the values of caring for the land and community, and having respect for the unseen; and to strengthen its transmission to the younger generations.

These initiatives were showcased in the TAWID^(xxii) Indigenous Knowledge Learning Festival. Fourteen indigenous learning stations were set up showcasing community-led initiatives, including Schools of Living Tradition; heirloom recipes and indigenous health; the traditional crafts of weaving and woodcarving; performances of indigenous music, dance and visual arts; exhibits and talks about the making of comic books and other publications; and community radio and film shows. It was a grand display of the wide range of indigenous learning activities going on in communities which could be adapted in schools.

All in all, it was a great learning event and the start of stronger partnerships between school-based and community-led indigenous learning.

xxii. Kankana-ey word meaning *heritage*

Box 53

A woman holds a flag representing the indigenous peoples of Latin America in Tiahuanaco, Bolivia.
Credit: mauritius images GmbH.



Case study: Indigenous intercultural universities, Latin America

In Latin America, a network of indigenous intercultural universities, Universidad Indígena Intercultural (UII),⁽³⁵⁷⁾ has been established, where indigenous students undertake post-graduate courses supportive of professional development and technical excellence in the service of indigenous peoples' development with culture and identity. Integral to the curriculum are modules taught by indigenous women and men respected for their wisdom, expertise, leadership, cultural knowledge or spiritual guidance, speaking directly from their experiences as interlocutors for indigenous peoples' self-determination. This mobile faculty, named Itinerant Indigenous Chair, forms the backbone of the UII network which currently includes 26 associated academic centres, which are universities, study centres or research institutes experienced in providing university-level education programs for and with indigenous peoples. Instead of creating a new institution, the UII network builds on the academic centres' teaching staff, their knowledge and practices, as well as their infrastructure, and in addition develops new curricula and enriches existing ones with new perspectives and contents based on the worldviews and proposals of the indigenous peoples.

Key components of the transition

Promoting education on biological and cultural diversity, sustainability, languages, human rights and heritage and integrating it into school curricula at all levels, including informal education, with a strong focus on reconnecting with nature through *learning by doing* and experiencing nature. Early childhood learning, which is experiential and nature-based, has been shown to have a great impact on values in relation to the natural world.

Transmitting indigenous and local knowledge in schools, youth programmes, information and education campaigns, cultural festivals and celebrations, social media and public communications. This is important for raising broad public awareness about the linkages between biodiversity values and cultural values across society.

Having sustained dialogue between the sciences and indigenous and local knowledge systems to build a foundation for new partnerships to generate the best possible knowledge and solutions for biological and cultural resilience.

Supporting arts, literature and media which are also vital in bridging understanding between different cultures and parts of society. Through arts, literature and media, culture renews itself and its values in ways that are creative and unexpected, for each new generation. They are also among the foremost and most democratic channels through which individuals and collectives can speak to and influence society.



A bamboo box with the umbilical cord of a newborn is tied to a tree in a community forest near a village in Thailand. The tree takes care of the newborn, and no one can cut the tree down; the child becomes responsible for the welfare of the tree. Credit: Lakpa Nuri.

Land transitions towards securing customary land tenure systems of IPLCs

Vision

The territories of life of IPLCs, including their distinct cultural, spiritual and customary relationships with their lands and waters and their intrinsic and vital contributions to human wellbeing, biodiversity conservation and climate change mitigation and adaptation, are secured. The collective lands, territories and resources of IPLCs are legally recognised and protected in keeping with international law; land-use classifications and land registration to uphold customary tenure are reformed; and the global coverage of areas conserved, sustainably used and restored are progressively and significantly increased.

Rationale

Box 54

The Kimberley Declaration: Indigenous peoples and sustainable development

‘As peoples, we reaffirm our rights to self-determination and to own, control and manage our ancestral lands and territories, waters and other resources. Our lands and territories are at the core of our existence—we are the land and the land is us; we have a distinct spiritual and material relationship with our lands and territories and they are inextricably linked to our survival and to the preservation and further development of our knowledge systems and cultures, conservation and sustainable use of biodiversity and ecosystem management.’⁽³⁵⁸⁾



Community mapping in progress in Indonesia.
Credit: Agnus McInnes.

The existential importance of collective land and territories for the continued survival of indigenous peoples and of biodiversity has been repeatedly stated and clearly captured in The Kimberley Declaration on sustainable development, agreed by indigenous peoples from all regions of the world in 2002 (see Box 54). Today, the relevance of this same message for the whole of humanity is better understood, as we collectively strive to repair the damage done to all of life's diversity, from genes to species and ecosystems, and associated peoples and cultures. It is well established that much of the world's biological diversity is found on IPLC lands and territories.⁽³⁵⁹⁾ Yet, only about 10 per cent of these lands are legally recognised with customary tenure security for the IPLCs who live there and who have nurtured these distinct *territories of life*. This leaves up to 40 per cent of the world's lands vulnerable to land-grabbing and unsustainable use by more powerful actors, which generates conflict, violates human rights and increases threats of rollbacks, violence, and unjust prosecution against IPLCs who defend their lands.

Converging social justice, biodiversity conservation and climate change actions in the coming decades hinges on securing the collective rights of IPLCs to their lands, territories and resources, and on their reciprocal relationships of care, health and wellbeing with the natural world.

Nature is generally declining less rapidly on indigenous peoples' lands than on other lands. In many parts of the world, the lands of indigenous peoples are becoming islands of biological and cultural diversity, surrounded by areas in which nature has further deteriorated; and in many instances biodiversity is being increased and enhanced through indigenous values and practices.⁽³⁶⁰⁾ Indigenous peoples are already *bending the curve* of biodiversity loss on lands they own, manage or control.

Failing to recognise and secure the high conservation values of IPLC's lands, territories, waters and resources is among the biggest missed opportunities of the past decade. A transition on this aspect of land governance would bring potentially huge benefits for biodiversity.

Benefits of the transition

IPLCs are already delivering multiple material, social, cultural and spiritual benefits to their communities and the whole of society. For example:

- IPLCs own or manage at least 50 per cent of the world's land which harbours much of the world's biodiversity, including about 40 per cent of protected areas. A further 40 per cent of all remaining terrestrial areas with low human intervention overlaps with indigenous peoples' lands.
- These lands also hold 36 per cent or more of remaining intact forest landscapes, and have lower deforestation rates and higher species richness than other areas.
- At least 22 per cent of all the carbon in tropical and subtropical forests is stored in IPLC lands.

Securing IPLC customary tenure systems and their distinct and special relationships with their lands will:

- Significantly increase the current area under conservation, sustainable use and restoration, thereby multiplying already existing benefits;
- Promote just and inclusive conservation;
- Contribute to achievement of the SDGs and the implementation of the Paris Agreement on climate change;
- Enable IPLCs to defend their territories from external unsustainable activities, and prevent conflicts and violent attacks on environmental and human-rights defenders.

Securing customary land tenure systems is one of the most concrete and promising transitions that can be acted upon with immediate effect and that can generate multiple benefits.

Progress towards the transition and guiding examples

International law on the rights of indigenous peoples (including the UN Declaration on the Rights of Indigenous Peoples and International Labour Organization Convention No. 169), the Outcomes of the World Conference on Indigenous Peoples, and international and national jurisprudence on indigenous peoples all confirm the rights to lands, territories and resources based on customary tenure. However, these rights are still poorly respected and implemented across most of the world.

Both the UN FAO's *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*⁽³⁶¹⁾ and the *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*⁽³⁶²⁾ have been adopted with broad support. If fully implemented, they can facilitate progress at all levels to secure IPLC customary land tenure, as well as gender equality.

The Africa Union Declaration on Land Issues and Challenges In Africa resolves to ensure that land laws provide for equitable access to land and related resources among all land users, including the youth and other landless and vulnerable groups such as displaced persons, and strengthen security of land tenure for women, which requires special attention.⁽³⁶³⁾

Whereas in 1979 only one or two parliaments recognised communities as land-owners in their own right, in 2019 land laws in 73 of 100 countries recently analysed provide for community property alongside public and private property.⁽³⁶⁴⁾ Good progress is also being registered in relation to recognition of community-based forest tenure. According to the Rights and Resources Initiative, ‘Since 2002, the total area designated for and owned by IPLCs across 58 countries has increased by at least 40 per cent or 152 mha. Whereas only 40 countries had legal frameworks establishing communities as forest owners or designated rightsholders in 2002, at least 54 countries established such legal instruments by 2017, with new pathways for community forest ownership established in Indonesia, Kenya, Mali, and Zambia since 2013’.⁽³⁶⁵⁾

The Land Rights Now Campaign⁽³⁶⁶⁾ and the Land Tenure Facility⁽³⁶⁷⁾ are international partnerships with IPLCs, focused on scaling up recognition of collective land rights.

At the national and local level, some of the recent examples that also bear hope for the future include:

- In Suriname, 1 October 2019 saw a historic moment as two draft laws were submitted to the Minister of Regional Development: a proposal for a *Collective Rights Act for Indigenous and Tribal Peoples in Suriname*, including land rights, and a proposal for an amendment of the constitution. These legal proposals were the result of years of work, including the collaboration and negotiation between the Minister of Regional Development, tasked with implementing the ‘roadmap for the realisation of the legal recognition of the land rights of indigenous and tribal peoples (ITPs) in Suriname’, and the Association of Indigenous Village Leaders, to implement the ruling of the 2016 Inter-American Court of Human Rights in favour of the Kaliña and Lokono peoples and, more widely, of indigenous and tribal peoples in the country.⁽³⁶⁸⁾
- In Bolivia, the Tacana people successfully protect both their rights and biodiversity through self-determination and partnership with conservation agencies in the territories overlapping with Madidi National Park. Strengthening governance has been key to exercising their rights, as law alone is not sufficient, and laws can change. Over decades, under changing laws and regulations, and facing diverse major challenges from highways, resource extraction and the opening up of parks to oil and gas firms, the Tacana people, including in alliances with settlers and conservation scientists, have focused on developing a strong system of governance across the landscape, empowering people to make their own decisions, and have strengthened their fight to protect their biodiverse landscape.⁽³⁶⁹⁾
- In Panama in 2019, the Ministry of the Environment signed a legal resolution recognising the rights of the Guna and Embera-Waunan peoples in protected areas. Another law, which recognises the rights of the Naso Tjër Di people, is currently in the Supreme Court of Panama. It recognises and respects the rights of the Naso Tjër Di people, who have long cared for the country’s forests and a UNESCO World Heritage site which was under threat from destructive dam projects. This is a significant step forward for human rights and the environment in Panama.



● People gathering on the shore of Gichigami - Lake Superior- to protest the proposed Enbridge Line 3 tar sands pipeline. Credit: Fibonacci Blue.

Key components of the transition

- Upholding human rights standards. The UN Declaration on the Rights of Indigenous Peoples is sufficiently precise to give rise to identifiable and practicable rights and has been accepted as a threshold reflecting the minimum standard of international law to be applied towards securing the land rights of indigenous peoples, including respecting free, prior and informed consent for programmes and projects affecting them. Adopted more recently is the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas.
- Adopting and scaling up effective constitutional, legal, policy and institutional frameworks, mechanisms and concrete measures to appropriately and legally recognise and adjudicate the rights of IPLCs to territories, lands and resources and to respect their customary tenure systems, including the rights of women.
- Reforming land governance, and strengthening regulations and the monitoring of business enterprises for compliance with human rights and environmental standards.
- Strengthening IPLC governance institutions over lands, territories and resources including using community participatory mapping; and demarcating and monitoring the status and trends of biodiversity, climate impacts, external threats, human rights and other community priorities.
- Transforming conservation policy and practice from exclusionary models towards rights-based and collaborative approaches that support and promote community-led conservation and customary sustainable use, and that celebrate the mutual relations between nature and culture.
- Investing in and supporting partnerships to secure collective land rights, including access to justice and improved accountability, remediation and restitution measures to address violations of IPLC land rights, and the protection of environmental human-rights defenders.

Governance transitions towards inclusive decision-making and self-determined development

Vision

Nested governance institutions, including IPLC authorities, are exercising decision-making at appropriate scales, ensuring whole-of-government and whole-of-society approaches that guarantee respect for human rights and diverse biodiversity and cultural values. These governance institutions are upgrading policy, legal and institutional transparency and accountability towards greater equity, wellbeing, sustainability and resilience for all.

Rationale

Power inequalities in governance systems go hand in hand with imbalances in economic, social and ecological outcomes. Statist and market-based governance systems have implemented top-down economic development strategies, which have marginalised less powerful actors—including IPLCs, and their cultural values—from decision-making over land use and resource management.

Fragmentation of governmental decision-making into specialised sectors has privileged economic growth over environmental health and social wellbeing, contributing to the current interrelated crises of biodiversity loss, climate change and social inequalities.

Integrative, holistic, transparent and accountable governance institutions, upholding respect for human rights and equitable sharing of benefits, will be critical elements of the governance transition towards just and sustainable outcomes for peoples and planet.

‘[...] ensuring the sustainability of the global commons is not just a matter of global governance; a plethora of actions at all levels—from global to local—and involvement of the most directly affected communities is equally important. Indeed, policies must address hard-to-change behaviours that are damaging to the environment, including economic incentives such as removing harmful subsidies, introducing appropriate taxation, and regulation such as progressive carbon taxation mechanisms. Empowering people to make positive change through education, awareness raising and social movements is critical. Social acceptability of those much-needed changes will be facilitated if management of the global commons explicitly addresses human well-being and environmental injustice. Such management should avoid maldistribution and seek to repair the damage already caused by poor technical, financial and political interventions. especially where indigenous communities and other vulnerable groups are concerned, with concerted efforts to leave no one behind.’

— Excerpt from *The Future is Now: Science for achieving sustainable development*⁽³⁷⁰⁾

Benefits of the transition

Development approaches that take local conditions and cultures into account are likely to result in more context-sensitive and equitable outcomes, while enhancing ownership by target beneficiaries. Integrating culture into development policies and programmes fundamentally contributes to their effectiveness and sustainability.

The IPBES Global Assessment on Biodiversity and Ecosystems concluded that:

‘Recognizing the knowledge, innovations, practices, institutions and values of indigenous peoples and local communities, and ensuring their inclusion and participation in environmental governance, often enhances their quality of life and the conservation, restoration and sustainable use of nature, which is relevant to broader society. Governance, including customary institutions and management systems and co-management regimes that involve indigenous peoples and local communities, can be an effective way to safeguard nature and its contributions to people by incorporating locally attuned management systems and indigenous and local knowledge.’⁽³⁷¹⁾

A human-rights-based approach upholds the rights and dignity of the poor and marginalised sections of society, supports their diverse visions of a good life, addresses and manages conflicts, and unleashes the energy of collective actions and self-determination.

Progress towards the transition and guiding examples

The 2030 Agenda for Sustainable Development has set out a universal agenda for governments, businesses, all peoples, civil society and all citizens, an agenda that embeds the universal values of human rights and a pledge to leave no one behind. This principled foundation permeates the whole transformative agenda, encompassing global inequalities, biodiversity, climate change and associated challenges.

Several policy processes at the global level have adopted decisions recognising the contributions of traditional knowledge towards solving contemporary problems of biodiversity loss, climate change, disaster risk, deforestation and ecosystem degradation.⁽³⁷²⁾ However, there is a wide gap between increased recognition of the value of traditional knowledge in global policy and its continuing neglect and erosion on the ground. Indigenous and local knowledge and the important contributions of IPLCs are poorly reflected in most national biodiversity strategies and action plans, and in most national reporting processes to global agreements.⁽³⁷³⁾ Nonetheless, advances made in global conceptual and policy frameworks can also inform and crystallise developments in national policies and strategies, as illustrated in the cases of Earth jurisprudence and national indicators of wellbeing.

The UN General Assembly has initiated a deliberative process on *The Rights of Mother Earth*, focused on human norms that safeguard planetary functions and interests, also called *Earth Jurisprudence*, whereby: ‘Humans must adapt their legal, political, economic, and social systems to be consistent with the fundamental laws or principles that govern how the universe functions and guide humans to act in accordance with these, which means that human governance systems at all times must take account of the interests of the whole Earth community’.⁽³⁷⁴⁾ Countries which have passed laws abiding by these principles include Ecuador, Bolivia, India and New Zealand.

Box 56

Case study: Whanganui River recognised as a legal person, New Zealand

For 140 years, the local Māori tribe (*iwi*) of Whanganui in the North Island of New Zealand has fought for the recognition of their river as an ancestor. In 2017, the river was granted the same legal rights as a human being.⁽³⁷⁵⁾ Gerrard Albert, the lead negotiator for the Whanganui tribe, explains:

“The reason we have taken this approach is because we consider the river an ancestor and always have. We have fought to find an approximation in law so that all others can understand that from our perspective treating the river as a living entity is the correct way to approach it, as in indivisible whole, instead of the traditional model for the last 100 years of treating it from a perspective of ownership and management.

We can trace our genealogy to the origins of the universe, and therefore rather than us being masters of the natural world, we are part of it. We want to live like that as our starting point. And that is not an anti-development, or anti-economic use of the river but to begin with the view that it is a living being, and then consider its future from that central belief.”

Diverse conceptions and measures of wellbeing beyond gross domestic product and economic growth have been adopted and elaborated by several countries and peoples, including Bhutan's Gross National Happiness Index,⁽³⁷⁶⁾ the Ni-Vanuatu Well-being Survey⁽³⁷⁷⁾ and New Zealand's Living Standards Framework.⁽³⁷⁸⁾

The UN General Assembly's adoption of the UN Declaration on the Rights of Indigenous Peoples provides norms and standards for indigenous peoples' full and effective participation in the national and local implementation of global commitments, including in Bolivia's constitution and the Philippines' *Indigenous Peoples Rights Act*.

These international standards are alive and practised by indigenous peoples, such as the Wampis nation in Peru (see Box 57) and indigenous women from the Torres Strait in Australia (see Box 58).

Case study: The Wampis nation in the Peruvian Amazon declares the creation of the first autonomous indigenous government

On 29 November 2015, in Soledad, on the Santiago River, Peru, the Wampis nation declared the formation of its autonomous territorial government with the election of the first representatives and the approval and publication of its statute, the legal framework they will use to govern the territory. In a historic moment for the indigenous peoples of Latin America, the Wampis elected representatives issued their first resolution, which declared the totality of their ancestral territory—an area that covers more than 1.3 million hectares—as an integral territory.

The announcement was made during the first ever Wampis Summit in front of almost 300 representatives from 85 communities. Andres Noningo Sesen, one of the *Waimaku*, or Wampis visionaries, explained why they made this decision:

“We have taken this decision partly as a strategy of territorial defence, in response to the efforts to divide us into communities. We will still be Peruvian citizens but this unity will give us the political strength we need to explain our vision to the world and to those companies and governments who only see the gold and oil in our rivers and forests, much less the spirit beings of Nunkui and Tsunki, who look after our earth and water. It will also enable us to promote our own vision for our future.”

Box 57

Box 58: International Indigenous Forum on Biodiversity

View from Thursday Island, Torres Strait. Credit: Natalie Maro.



Case study: Indigenous women in land and sea management, Torres Strait, Queensland, Australia

Indigenous women of the Torres Strait Islands play a vital role in understanding and managing the land and sea resources and building community resilience. As custodians and teachers of significant traditional knowledge, valued members and leaders of community organisations, and occupying a growing number of leadership and technical positions more broadly, women bring a unique strength and insight to land and sea management.

“Woman is like a rock in the middle of the ocean. During strong tides and winds, the rock never moves its ground. When you go further down, there’s a school of fish that hide under the rock for shelter—Malu Ipkazil”

— Laura Pearson, Ranger, Warraber Island, Torres Strait

“While the men have to go out hunting and working on the mainland, women stay on their islands, and listen to their parents, their aunties, grandparents, about how to look after islands, how to grow food in traditional gardens, when to harvest wongai and gasi, how to catch fish and feed their families. The women know all the stories, they know all the boundaries, they have the traditional knowledge and they share this with their brothers. They are also the ones looking after their children, and looking to the future they will inherit, and passing their traditional knowledge onto their children. I encourage Elders and future leaders to seek more information from womenfolk.”

— Doug Passi, Traditional Owner, Mer Island, Torres Strait

Key components of the transition

- Embedding whole-of-government, whole-of-economy and whole-of-society participatory approaches in national implementation strategies and action plans on sustainable development, biodiversity and climate change; and devolving decision-making to the most appropriate level of competence and problem-solving.
- Continuing to reform government legislation and policy as part of adaptive governance, engendering plural values and approaches, and increasing equity, diversity and resilience in institutions and legal systems.
- Using enhanced reporting and accountability mechanisms, such as the Universal Periodic Review used by countries to report on human rights, to assess country contributions and overall progress at appropriate intervals.
- Enabling the transformative power of IPLCs, persons with disabilities, minorities, those marginalised and facing discrimination, and all those left behind. Addressing gender and intergenerational equity are critical elements throughout this process.
- Stringently applying safeguards guaranteeing non-violation of human rights in the implementation of sustainable development, biodiversity and climate change actions, including respect for free, prior informed consent of indigenous peoples.



Whanganui River, New Zealand. Credit: Sasapee.

Incentives and financial transitions towards rewarding effective culture-based solutions

Vision

Incentives, including financial support for IPLC collective actions and innovative culture-based solutions, are prioritised; environmental, social and human-rights safeguards on biodiversity financing are applied; and perverse incentives and harmful investments are ended or redirected.

Rationale

Mobilisation and allocation of resources, both monetary and non-monetary, are key elements for an effective implementation of the post-2020 global biodiversity framework. This is another area needing transformation. Much more resources are invested (through subsidies and investments in fossil fuel and extractive industries, for example) to support activities and industries that reduce biological and cultural diversity, than in activities that maintain, strengthen and revitalise them. Focusing on market-based solutions and technological fixes is very likely to cause further damage instead of addressing the underlying causes and making systemic changes. Examples of such controversial *solutions* include carbon trading, geo-engineering, synthetic biology and gene drives. In 2019 the OECD estimated subsidies harmful to biodiversity at US\$500 billion a year, which is about 10 times the estimated global funding for biodiversity conservation and sustainable use.⁽³⁷⁹⁾ Return-oriented, for-profit financial mechanisms have yet to generate significant investment in implementing the objectives of the CBD⁽³⁸⁰⁾ and they are massively outweighed by subsidies such as those for domestic agricultural production.⁽³⁸¹⁾

When considering funding for conservation, only a tiny fraction goes to support the collective action of IPLCs; paradoxically, some biodiversity funding harms and violates the rights of IPLCs, instead of supporting them. Another US\$1,753 billion is spent every year on military expenditure, which could be put to much better social and environmental use.

Collectively, the actions of IPLCs to protect and conserve their lands and territories, and the biodiversity that these areas contain, comprise a very substantial non-financial contribution towards the goals of the CBD. However, their efforts to maintain and steward biodiversity are currently insufficiently recognised as a form of resource mobilisation and are badly under-funded.

A major shift in investments, incentives and funding, including on technology assessments, is needed to support activities, especially the collective actions of IPLCs, and appropriate technologies⁽³⁸²⁾ that benefit both nature and people.



Caring for stranded pilot whales in Farewell Spit, New Zealand. Credit: Gary Webber.

Benefits of the transition

- By ending perverse incentives, many of the direct drivers of biological and cultural diversity loss would be eliminated or greatly reduced, thereby preventing damage in the first place.
- By ending biodiversity financing that harms the rights and livelihoods of IPLCs, stronger collaboration between conservation agencies and IPLCs would focus on positive outcomes for both nature and people.
- By providing adequate financial, political and technical support, IPLC collective contributions to the objectives of the CBD would be greatly amplified and upscaled, and would have greater positive impact both for IPLCs and the whole of humanity. For example, it would enable IPLCs to:
 - Strengthen, expand and replicate their action leading to conservation, restoration, sustainable use and access, and benefit-sharing;
 - Revitalise and/or strengthen cultural and social values of living in harmony with nature;
 - Effectively defend their territories and lands from external threats and destructive industries;
 - Strengthen local sustainable economies.

Progress towards the transition and guiding examples

There is not enough evidence to assess in any detail the overall level of funding available to support IPLC collective actions. However, given that IPLCs customarily own or manage more than 50 per cent of the world's lands, and vast marine areas, and that these areas hold a large proportion of the planet's biodiversity, the available information suggests strongly that the proportion of biodiversity funding available for IPLCs lags far behind their current contributions to the Aichi Biodiversity Targets.

Progress has been made to ensure that biodiversity finance does not harm IPLCs at the global level through, for example, Global Environment Facility and CBD safeguards, but these have yet to be fully implemented at national and local levels.

Negligible progress is being made to phase out perverse incentives. Few governments have even identified perverse incentives, let alone begun to effectively reform them.

However, innovative approaches, programmes and projects have started to emerge, providing good practices and *seeds* on which this transition can be built on. Guiding examples include:

- Initiatives directly supporting IPLCs and small-scale producers in sustainable production, marketing, livelihoods and conservation, such as the Forest and Farm Facility,⁽³⁸³⁾ the Non-Timber Forest Products Exchange Programme,⁽³⁸⁴⁾ the Mountain Partnership Products Initiative,⁽³⁸⁵⁾ the International Partnership for the Satoyama Initiative⁽³⁸⁶⁾ and the Global ICCA Support Initiative;⁽³⁸⁷⁾
- National or sub-national governments supporting IPLC collective action; for example, the municipal government supporting community-led natural resource management in Thailand;
- Investments by global funds to support conservation by IPLCs; for example, the Global Environment Facility's Small Grants Programme and the Inclusive Conservation Initiative;
- Cooperatives formed by IPLCs receiving payments for carbon storage, biodiversity conservation and customary sustainable use in community forests through a REDD+ project in Vietnam;
- New tax initiatives (for example, in the USA), whereby citizens and businesses can channel their taxes to pay to help return indigenous land to indigenous ownership, as an act to right the wrongs and pains associated with colonisation, and recognise and support indigenous stewardship.⁽³⁸⁸⁾

Key components of the transition

- Investing in nature- and culture-based solutions, and the collective actions of IPLCs.
- Recognising the role and contributions of IPLCs as a form of resource mobilisation and reflecting this in national and sub-national policies, laws and resource allocation.
- Increasing direct funding for IPLCs, including for conservation and sustainable use, with enhanced accessibility through greater information-sharing, training, revision of technical requirements, planning grants, networking and partnerships. Monitoring this by having disaggregated figures on domestic support for IPLC collective actions in national reports to the CBD, and in the work of the United Nations Development Programme's Biodiversity Finance Initiative.
- Applying safeguards for biodiversity financing in practical and concrete ways.
- Having social inclusion and adherence to human rights standards as core criteria for all biodiversity financing and other resource mobilisation processes at the national and sub-national level, to bring an end to its potential for negative impacts on the rights and livelihoods of IPLCs.
- Including IPLCs on national committees, with roles and responsibilities for national budgets related to domestic biodiversity financing.
- Urgently identifying and eliminating perverse incentives, and developing and applying positive incentives, including directing the stimulus in response to COVID-19 into an opportunity to reshape the economy towards sustainability for people and planet.
- Making REDD+ more effective through early planning, up-front investment, collection of baseline data, and rigorous and widespread monitoring of impacts.
- Embedding technology assessments at all levels of biodiversity policy, planning and implementation.
- Reforming the financial sector, including actions by financial institutions at all levels to align financial flows towards sustainable practices. This could be done, for example, by applying biodiversity and social risk assessment policies and processes, and demonstrating decreasing negative impacts and increasing positive impacts on biodiversity and IPLCs over time.

Economic transitions towards sustainable use and diverse local economies

Vision

Diverse and human-scale economic systems are thriving, within which IPLC customary sustainable use and other small-scale producers are contributing to sustainable and resilient economies. Scaled-down consumption patterns are guaranteeing a sustainable and just society.

Rationale

Biodiversity loss, climate breakdown and intensifying social inequalities are the consequences of an economic system that seeks infinite growth, yet depends on finite resources. The present global ecological footprint has surpassed the carrying capacity of the Earth, to the point where we need 1.75 planets to support current production and consumption patterns.⁽³⁸⁹⁾ Recent research also highlights that current large-scale agricultural and food production systems, and the continued loss of habitats, are increasing the risk of virus pandemics such as COVID-19.⁽³⁹⁰⁾ Where short-term profit is the primary factor in decision-making, environmental destruction is seen as an acceptable externality to the core business of large economic sectors. Accordingly, the customary resource management and sustainable use practices of IPLCs, peasants and small-scale producers are considered unproductive, despite feeding 70 per cent of the world's people and providing multiple benefits to society, using less natural resources.

A radical transformation is needed in current carbon-intensive economic systems and in global systems of production and consumption, towards a plurality of systems embodying local sustainable use, practices and technologies. There is no single blueprint for transforming current unsustainable practices, but many diverse solutions, innovations, technologies and alternatives are emerging. Among these, with appropriate recognition and support, IPLC systems of customary sustainable use, small-scale production, and innovative social enterprises by IPLC youth and women, offer multiple benefits at all levels for biodiversity, for climate change mitigation and adaptation, and for sustainable development.

Goals for conserving and sustainably using nature and achieving sustainability cannot be met by current trajectories and goals for 2030 and beyond may only be achieved through transformative changes across economic, social, political and technological factors.

— Extract from the IPBES Global Assessment⁽³⁹¹⁾



The geography of palm oil: a field is surrounded by land deforested by fire, plantations and industrial farming. Credit: Stienne, *Dépaysages de palmiers à huile*, Visionscarto.net.

“Why do you do this? You say it is for development, but what kind of development takes away the richness of the forest and replaces it with just one kind of plant or one kind of animal? Where the spirits once gave us everything we needed for a happy life—all of our food, our houses, our medicines—now there is only soya or cattle. Who is this development for?”

— Raoni Metuktire, environmentalist and Chief of the indigenous Brazilian Kayapó people⁽³⁹²⁾

Benefits of the transition

Transforming the global economic paradigm and model would significantly contribute towards achieving sustainability and a healthy society. The main benefits would include:

- Living within the carrying capacity of the Earth, thereby reducing negative impacts on biodiversity and the climate;
- Having a more equal and just society, providing fair access to resources and equal opportunities for sustainable development;

- Enjoying human wellbeing more, including fulfilment of human material needs, mental needs and spiritual needs;
- Having greater respect for diverse ways to produce and consume, thereby increasing ecological and social resilience and cultural diversity;
- Securing a better chance to achieve the UN Sustainable Development Goals by 2030, as a critical milestone to achieving the vision of living in harmony with nature by 2050.

Diversity in economies increases sustainability and resilience. All social actors have a role to play. Among them, IPLC customary sustainable use and small-scale production systems provide multiple benefits for biodiversity, for climate change mitigation and adaptation, and for sustainable development at all levels:

- They are generally diverse mosaics of ecosystems, providing ecological niches for genes, species and ecosystems, and storing large amounts of carbon.
- They support varied sustainable livelihoods and sustainable socio-ecological production landscapes and seascapes from which other production systems can learn.
- They keep alive and renew cultural and spiritual values and ways of life that focus on *living well* rather than unchecked and wasteful consumption, thereby also contributing to diverse ways of knowing and being.

With appropriate recognition and support, these systems could amplify the benefits to environment and society.

Progress towards the transition and guiding examples

There has been increasing discussion in various global forums (e.g. the fourth session of the UN Environment Assembly, and the World Economic Forum) about the need to transform the current economic system and its production and consumption patterns. Efforts have been made by the UN Food and Agricultural Organization (FAO) and the European Union to promote agroecology. Several initiatives to explore the *green economy* are being undertaken by governments and innovative enterprises, but no significant concrete progress is visible, partly due to the failure to address unsustainable consumption patterns. Also, governments have not done enough to regulate damaging industries and to support customary sustainable use and small-scale producers.

Local initiatives do exist and are evolving, but they will need much more recognition and support to make a difference at national and global scales. Several examples are illustrated in Part 2 of this report and many more exist in other sources, including:

- Traditional and local systems that are vital for sustainable production and consumption;

- Youth-led innovations in local small-scale production systems, generating new products and new markets through social enterprises;
- Defence of IPLC territories and lands against incursions and land-grabbing;
- Global networks and initiatives, such as the International Partnership for the Satoyama Initiative, the Forest and Farm Facility, and the UN Decade on Family Farming which support sustainable small-scale producers and the revitalisation or strengthening of customary sustainable use practices;
- *Transition towns*, with their locally grown food, community-owned power stations, and local currencies, transitioning towards self-sufficient and resilient communities and economies; ⁽³⁹³⁾
- Eco-villages, focused on living well while regenerating rather than depleting the environment, and on co-operation and connections. ⁽³⁹⁴⁾



Box 59: Edith Bastidas, Indigenous Women's Biodiversity Network and the Center for the Promotion and Indigenous and Social Development YANAPANAKUY, Colombia

Revitalising a wool fabric based on indigenous knowledge. Credit: Jorge Daniel Lucero.

Case study: The Network of Weavers of the Indigenous Reserve of Ipiales, Colombia

The Indigenous Reserve of Ipiales is located in the Department of Nariño in the southwest of Colombia. Its population is approximately 25,000 people belonging to the village of Los Pastos.

In March 2019, a project to support the recovery and revitalisation of a local wool fabric based on indigenous knowledge began, through an alliance between the Ministry of Health, Women and Gender of the Reserve, the Indigenous Women's Biodiversity Network, and the Center for the Promotion and Indigenous and Social Development YANAPANAKUY. The initiative addresses other areas such as the path for recognition of the territory; environmental conservation; the recovery of seeds and especially of medicinal plants; the recovery of their own food; and knowledge about food preparation.

This holistic approach gave life to the Network of (Women) Weavers of the Indigenous Guard of Ipiales, of which men, boys, girls and young people are also part.

Visible results have already been obtained, including:

- The recovery of knowledge about the preparation of sheep wool through shearing, spinning, twisting, dyeing, washing, warping and weaving with techniques and materials typical of the indigenous people;
- Construction of a community *chagra* (garden) of medicinal plants, which has allowed the community to revitalise their own knowledge about herbal remedies and the biodiversity of the territory;
- Recovery of traditional foods of great nutritional value, including for consumption in the project workshops. Food is served in dishes and utensils that are traditionally used in the community and are friendly to Mother Nature, avoiding the use of plastics and other contaminating materials;
- Revitalisation of one's spirituality and cultural strengthening through indigenous ceremonies that are carried out before the workshops and other activities;
- Peer-learning and sharing, through community visits to other communities;
- Income contributions for families, and especially for women weavers, from the sale of products at fairs and other events. For example, in relation to Kolla Raymi, a sacred celebration of the moon, fertility and femininity, an exhibition and market for the sale of products from the project, and from other similar initiatives of indigenous peoples and rural communities, was organised.

There is no single blueprint for transforming the current unsustainable development model. But there is an increasing emergence and visibility of a myriad of diverse solutions, innovations and alternatives, including IPLC customary sustainable use, small-scale producers and civil society initiatives, both in rural and urban landscapes and seascapes. These include solidarity and social economies, and initiatives for commons-based provisioning of food, shelter, energy and technology.⁽³⁹⁵⁾

The Global Tapestry of Alternatives is an interesting emerging initiative, which seeks to create solidarity networks and strategic alliances among systemic and sustainable alternatives at local, regional and global levels. These range from initiatives with a specific focus such as: sustainable and holistic agriculture; community-led water/energy/food sovereignty; solidarity and sharing economies; worker control of production facilities; resource/knowledge commons; ecological conservation; and inter-ethnic peace and harmony, to more holistic or rounded transformations where communities are achieving self-governance, autonomy, and self-reliance while challenging structures and relations of oppression, hierarchy and domination.⁽³⁹⁶⁾

Key components of the transition

- Having national and sub-national policy and processes that transform production and consumption systems and support: economic decentralisation, diversification and innovation; niche social enterprises and co-operatives; and locally accountable and sustainable systems.
- Shifting from fossil fuel-based economies to clean energy.
- Recognising and supporting the roles of IPLC customary sustainable use in national and sub-national policy and legislation, including traditional occupations and customary institutions, and their importance to conservation and sustainable development through, for example, being fully reflected in national biodiversity strategies and action plans and national development plans.
- Partnering to advance development and implementation of the CBD Plan of Action on Customary Sustainable Use, including acknowledging and supporting small-scale producers and agroecology as major contributors to the objectives of the CBD.
- Transitioning all businesses towards sustainable practices, including along their supply chains, through robust and accountable government regulation and voluntary processes, demonstrating improved outcomes on biodiversity and for IPLCs.
- Recognising and supporting women and youth, who are key actors in revitalising and innovating rural and local sustainable economies.
- Reducing consumerism and wasteful consumption in order to reduce the current unsustainable global ecological footprint and to live within the Earth's carrying capacity.
- Promoting and implementing principles of circular economy that entail gradually decoupling economic activity from the use of finite resources, re-using waste in closed production loops, and regenerating natural systems.

Food transition: Revitalising indigenous and local food systems

Vision

Vibrant ecosystems and cultures ensure genetic diversity and diverse diets, improving health, resilience and livelihoods. Revitalised indigenous and local food systems contribute to local food security, food sovereignty and agroecology, and underpin a just agricultural transition.

Rationale

Investment in the revitalisation of indigenous and local food systems will reward those people who have discovered, protected, domesticated, bred and nurtured the many food species which feed the world. IPLCs, especially women, have nurtured agricultural biodiversity for millennia—for food and medicines and for deeper spiritual, cultural and community values. Even today, small-scale producers and family farmers feed most of the world's people using less than 25 per cent of all global inputs on land, water and fossil energy to grow food. Maintenance and expansion of diversity in agriculture, landscapes and food systems are critical components in the transformation towards just, healthy and resilient food systems.

It is well established that the industrial food and agricultural system is a main driver of land-use change, pollution, deforestation and loss of biodiversity, including genetic diversity, and is contributing to the further impoverishment of rural people. Rapid expansion of globalised agro-industrial food systems in recent decades has seriously impacted IPLCs sovereignty over land, food, health and livelihoods.

Stopping unsustainable agro-industrial developments and land-use conversions on IPLC customary lands and waters requires transformation across the whole food system through strategic land-use planning; enhancing biodiversity and ecosystem values across landscapes; recovering diverse food traditions and cultural heritage values; and addressing unhealthy dietary changes towards consumption of highly processed foods among indigenous peoples and other rural and urban consumers.



Tzutujil women preparing traditional food together in San Pedro la Laguna, Guatemala. Credit: Barna Tanka.

Benefits of the transition

There are multiple benefits from revitalising indigenous and local food systems:

- Improved nutrition, health and wellbeing for IPLCs and wider society as a result of reversing the loss in agricultural and genetic diversity, and reversing the ongoing food and nutrition transition to diets of highly processed foods.
- The preservation and revitalisation of natural heritage sites and cultural heritage (including food heritage), which embody significant biodiversity and cultural values critical for ecosystems and social resilience.
- Positive economic incentives for family farmers and small-scale producers, which will increase productivity and incomes for IPLCs, women and the poor, who are disproportionately affected by rural decline and loss of traditional livelihoods, thus ‘making economic what is green’.⁽³⁹⁷⁾
- Enhanced intergenerational transmission of indigenous and local knowledge, innovations and technologies, thus sustaining customary sustainable use practices and the recovery of traditional varieties, and promoting the restoration of degraded ecosystems.

Progress towards the transition and guiding examples

- There is a growing social movement for agroecology and food sovereignty, spearheaded by La Via Campesina and enlivened by numerous community-based and local food initiatives such as Indigenous Terra Madre.⁽³⁹⁸⁾
- The global action plan of the UN Decade on Family Farming (2019–2028) aims to mobilise concrete, coordinated actions to overcome challenges faced by family farmers, and to strengthen their investment capacity and thereby attain the fullest contributions of family farming to sustainable agriculture and food production.

- The FAO High-Level Expert Seminar on Indigenous Food Systems⁽³⁹⁹⁾ agreed to create a hub on indigenous food systems and to propose the creation of a global action network on indigenous food systems and traditional knowledge within the UN Decade of Action on Nutrition (2016–2025).

The example from Alaska (see Box 60) illustrates the principles and practices of ongoing revitalisation of indigenous food systems.

Box 60: Inuit Circumpolar Council, Alaska

A project to support the recovery and revitalisation of a local wool fabric based on indigenous knowledge led to the development of the Network of Weavers.



Case study: Defining Alaskan Inuit food security as food sovereignty

The Inuit Circumpolar Council Alaska facilitated work that led to the following Alaskan Inuit definition of food security:

‘Alaskan Inuit food security is the natural right of all Inuit to be part of the ecosystem, to access food and to care-take, protect and respect all of life, land, water and air. It allows for all Inuit to obtain, process, store and consume sufficient amounts of healthy and nutritious preferred food—foods physically and spiritually craved and needed from the land, air and water, which provide for families and future generations through the practice of Inuit customs and spirituality, languages, knowledge, policies, management practices and self-governance. It includes the responsibility and ability to pass on knowledge to younger generations, the taste of traditional foods rooted in place and season, knowledge of how to safely obtain and prepare traditional foods for medicinal use, clothing, housing, nutrients and, overall, how to be within one’s environment. It means understanding that food is a life-line and a connection between the past and today’s self and cultural identity. Inuit food security is characterized by environmental health and is made up of six interconnecting dimensions:

1. Availability,
2. Inuit Culture,
3. Decision-Making Power and Management,
4. Health and Wellness,
5. Stability and
6. Accessibility.

This definition holds the understanding that without food sovereignty, food security will not exist'.⁽⁴⁰⁰⁾

Food sovereignty is defined as:

'The right of Alaskan Inuit to define their own hunting, gathering, fishing, land and water policies; the right to define what is sustainable, socially, economically and culturally appropriate for the distribution of food and to maintain ecological health; the right to obtain and maintain practices that ensure access to tools needed to obtain, process, store and consume traditional foods. Within the *Alaskan Inuit Food Security Conceptual Framework*, food sovereignty is a necessity to supporting and maintaining the six dimensions of food security.'⁽⁴⁰¹⁾



A member of the Rural Women's Farmers Association of Ghana RUWFAG hanging corn to preserve the seeds for sowing. Credit Global Justice Now



● In response to the increasing promotion of agro-chemicals and the threat of expansion of agribusiness and industrial oil palm plantations, in 2016 the Alliance of the Indigenous Peoples of the Highlands self-declared the Krayan highlands in Borneo as an area for organic and traditional agriculture. Credit: Robertson.

Key components of the transition

Taking a whole-of-system approach to food allows a fuller understanding of the enabling actions required to promote the desired food transition. Food systems go beyond linkages along the food chain, from agriculture to food retail; they also cover institutional, regulatory, scientific and knowledge frameworks which shape the food environment. Components of food systems include trade policies, agricultural subsidies, market structures and prices, research, and educational priorities, all associated with coalitions of interest evolving alongside them.⁽⁴⁰²⁾ The interactions between local food initiatives and the dominant regime on food and agriculture will shape food transitions and the futures of food. Some of the key components are listed below.

- Promoting integrated food policies and underlining the importance of healthy *food environments*. There is growing scientific consensus and understanding regarding the role of food environments in shaping people's diets. The key elements of the food environment that influence consumer food choices are physical and economic access to food; food promotion, advertising and information; and food quality and safety.⁽⁴⁰³⁾
- Strengthening the rights-based approach, refocusing on food sovereignty. Food sovereignty is a concept focused on people's right to control who, how and what kind of food is produced. The key elements of food sovereignty include more equitable trade relationships; land reform; protection of intellectual and indigenous land rights; gender equity; and the participation of people in defining policies. Food sovereignty underlines reform of food systems governance, as pivotal to effecting this transition.
- Recognising and supporting agroecology as a key strategy to deliver food security and nutrition. A series of landmark international reports⁽⁴⁰⁴⁾ have identified agroecology as a suitably comprehensive and systemic approach.⁽⁴⁰⁵⁾ Agroecology can guarantee adequate nutrition through the provision of diversified, safe, and balanced diets, based on local, fresh products which are sustainably produced, accessible and culturally adequate.
- Avoiding techno-fixes. Narrowly focused approaches that entail trade-offs and potentially reinforce current power relations should not be prioritised at the same level as systemic approaches.
- Securing access to land and security of customary land tenure. This is critical for IPLCs, as clearly underlined in the UN FAO's *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*.
- Providing policy support, economic incentives and direct funding towards grassroots food initiatives such as community seed banks, cooperatives, technological innovations and indigenous management practices.



Part V

← ●
An Ifugao woman crosses a suspension bridge on her way to collect young rice plants for transplanting into one of her family's two paddy fields in the Philippines. Credit: Chris Stowers.

IPLC contributions to the 2050 vision

Walking to the future in the footsteps of our ancestors

The 2050 Vision of Living in Harmony with Nature expresses a profound cultural vision about a transformed relationship between humans and nature, whereby biodiversity is valued, conserved, restored, and wisely used, ecosystem services maintained, and a healthy planet delivering benefits to people.

In the 2050 Vision, the futures of nature and culture are inextricably linked, flowing inevitably from the historical co-evolution of nature and humans.

— International Indigenous Forum on Biodiversity statement, August 2019, Nairobi

Nature needs urgent measures. We need to act now to protect our biodiversity. There is no more time to waste. The recognition of our rights to govern our own territories and practice our knowledge contributes to community and ecosystem resilience. As the guardians and defenders of Mother Earth, we urge all governments to act on behalf of biodiversity. See us as the most valuable part of the solution, and work together with us towards a new relationship with nature. One that heals and sustains for all of our future generations.

— International Indigenous Forum on Biodiversity statement, February 2020, Rome

The six transitions widely identified by IPLCs as critical pathways in transforming current cultural, social, political, economic and technological systems to ensure their wellbeing in the 21st century, have now become imperatives for the continued health of the biosphere, as its limits are breached by modern economic growth, leading to unprecedented biodiversity loss and climate change.

Nature and culture are protected through secure IPLC land tenure and governance

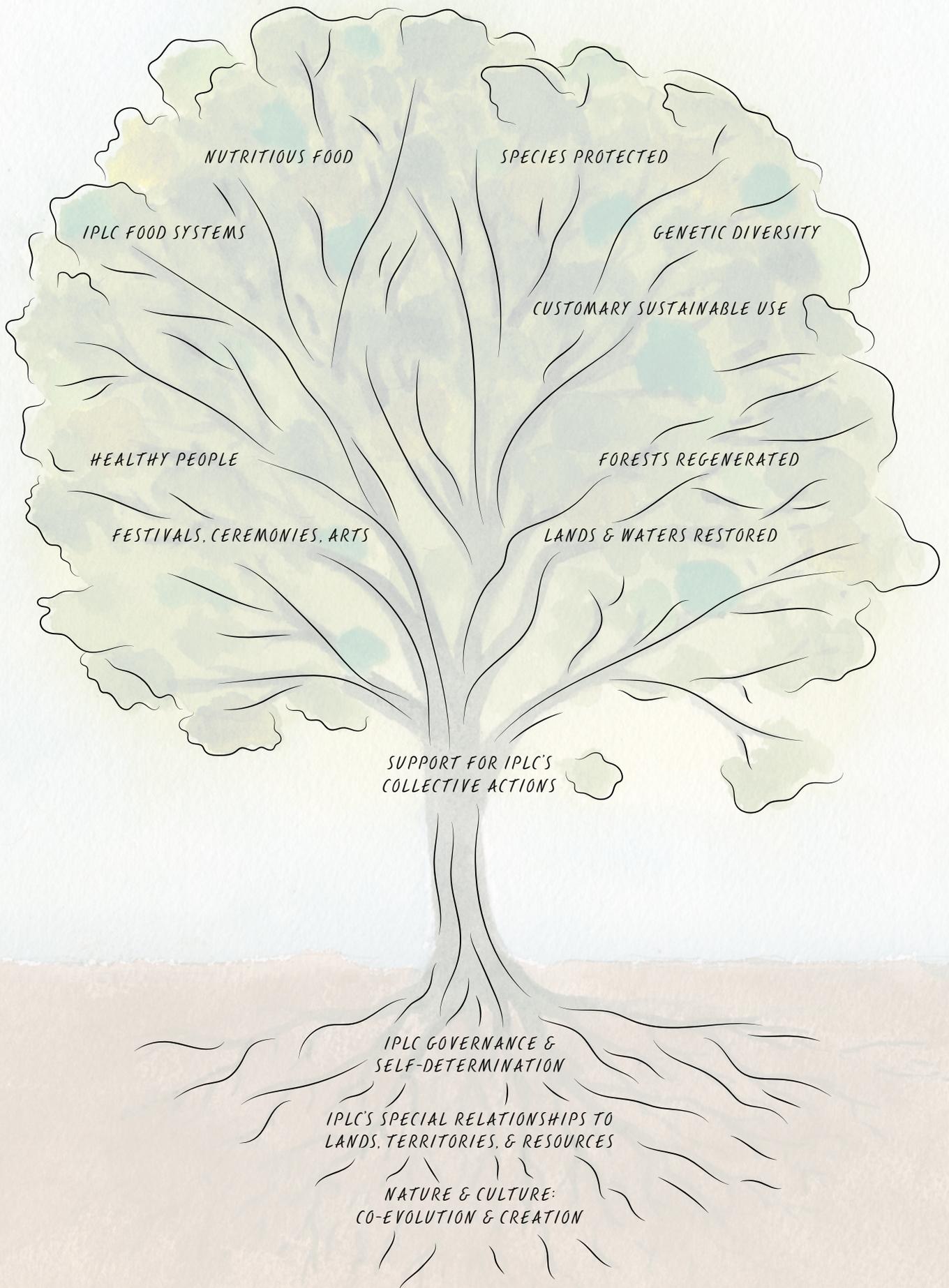
IPLCs uphold life-affirming cultural relationships with nature as central to nature's future. Cultural diversity goes hand in hand with biological diversity as they live their everyday lives in diverse ecosystems. Much of the world's remaining biodiversity found on IPLC lands and waters has been nurtured through their distinct relationships with nature. Securing their continued guardianship of these territories and resources requires states to legally recognise and guarantee security of the collective land tenure of IPLCs, and to respect their continued governance institutions and practices.

Promoting the rights of indigenous peoples to our lands, territories, resources and governance systems, implementing ecosystem-based and culture-based solutions, as well as mainstreaming and integrating these solutions into natural and human-modified landscapes and seascapes will be vital to addressing both the biodiversity and climate crisis. In addition, ensuring our rights to customary sustainable use - especially food sovereignty - is essential for achieving all three objectives of this Convention. As rights-holders and knowledge-holders, benefit-sharing should include biological resources and ecosystems services.

— International Indigenous Forum on Biodiversity closing statement, February 2020, Rome



A man holds up a small species of frog, an example of the biodiversity of the Ecuadorian rainforest. Credit: James Morgan.



IPLC collective actions will deliver multiple benefits for people and planet

Guided by their cultures and governance systems, IPLCs manage their lands and resources through customary sustainable use practices, for subsistence values and for the market. Revitalising indigenous and local food systems is considered very important for culture, biodiversity, health, for generating livelihoods for youth and women through innovative social enterprises, and for stimulating local economies which link rural and urban development.

2020 was planned as a *super-year* for nature and biodiversity, including the adoption of a new, forward-looking global biodiversity strategy to 2050 at the fifteenth meeting of the Conference of the Parties (COP 15) to the CBD in China. A packed schedule of biodiversity processes and events has been overtaken by the COVID-19 pandemic, an event revealing multiple interactions and profound systemic fragility in both human and natural systems. The increasing frequency of pandemics and new forms of zoonotic diseases (those that can be passed from animals to humans) caused by coronaviruses and other vectors highlights imbalances in our relationships with nature, which need addressing beyond the immediate timeframe of the current health emergency. A quick *return to normal*, with its multiple imbalances and vulnerabilities in human health systems, food systems, economic and trade systems, financial systems, and social and political systems, could deepen our human health and planetary crisis.

Systemic and interrelated problems are challenging humanity to explore new pathways towards the vision of living in harmony with nature by 2050, and beyond. The 2050 biodiversity strategy must envisage a future that is a radical departure from the *short-termism* of quick returns to long-term holistic solutions.

The six transitions identified by IPLCs as critical pathways to transformation—in diverse ways of knowing and being, in secure land tenure, in inclusive governance, in responsible finance and incentives, in sustainable economies and in local food systems—have now become imperatives for transforming our failing social, cultural, economic, political and technological systems.

These transitions are intergenerational visions honouring the historical struggles and wisdom of past generations, drawing from the experience and innovations of today's living generations, and embodying the legacy and hopes for future generations.

The stories and experiences shared in this report are only a sampling of the myriad actions being taken by IPLCs across the planet. Support by governments and other actors for collective actions by IPLCs could stimulate strategic partnerships for change and enable IPLCs to multiply their contributions to biodiversity conservation and sustainable use, to climate change mitigation and adaptation, and to sustainable development.

We are all future ancestors, challenged to renew the Earth for coming generations. This is humanity's joint endeavour to save our common home.



Live with the water, care for the river, live with trees, care for the forest. Live with the fish, care for the spawning grounds, live with the frog, care for the cliff.

● Karen proverb

← ●
Hadza men eat honey from combs collected during a hunt in Gideru Ridge System, Tanzania.
Credit: Robin Hammond.

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Published by Forest Peoples Programme, in collaboration with:

- Centres of Distinction on Indigenous and Local Knowledge
 - Indigenous Women's Biodiversity Network
 - International Indigenous Forum on Biodiversity
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Local Biodiversity Outlooks presents the perspectives and experiences of indigenous peoples and local communities on the current social-ecological crisis, and their contributions to the Strategic Plan for Biodiversity of the Convention on Biological Diversity.

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Cover photo: A woman and her young cousin paddle a canoe in the Mangrove Conservation Area of Matafa Village, Samoa. Credit: Vlad Sokhin.