

# Implementation of the Convention on Biological Diversity in the Hindu Kush Himalayan countries

A retrospective analysis of progress  
towards the Aichi Targets



#### Published by

International Centre for Integrated Mountain Development  
GPO Box 3226, Kathmandu, Nepal

**ISBN** 978-92-9115-731-0 (electronic)

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#### Citation

Chaudhary, S., Chettri, N., Uddin, K. (2022). *Implementation of the Convention on Biological Diversity in the Hindu Kush Himalayan countries: A retrospective analysis of Aichi Targets*. ICIMOD.

**Cover photo:** An oriental scops owl (*Otus sunia*)  
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# Implementation of the Convention on Biological Diversity in the Hindu Kush Himalayan countries

A retrospective analysis of progress towards the Aichi Targets

#### Authors

Sunita Chaudhary, Nakul Chettri, and Kabir Uddin





*Primula macrophylla*, Api Nampa Conservation Area, Darchula, Nepal

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## Preface

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The International Centre for Integrated Mountain Development (ICIMOD), established in 1983 as an Inter-Governmental Knowledge and Enabling Centre, has been proactively engaged in the science, policy, and practice cycle for the conservation and wise use of the biodiversity and ecosystem services generated by the fragile ecosystem of the Hindu Kush Himalaya (HKH). Starting in the 1990s with the documentation of the state of knowledge on the rich biodiversity nurtured by the traditional practices and knowledge of the diverse ethnic groups living in the HKH, ICIMOD was instrumental in highlighting the importance of the HKH in terms of biodiversity and the mountain ecosystem. As a strong advocator of the “mountain agenda”, ICIMOD played a pivotal role in the development of the Programme of Work on Mountain Biodiversity (PoWMB) as a part of the Convention on Biological Diversity (CBD) in 2004. Since then, ICIMOD, with its transboundary programme, has been advocating and demonstrating the Ecosystem Approach in the HKH through a dedicated long-term programme on Transboundary Landscapes. As a part of the process of contributing to the CBD, ICIMOD also documented the progress made by its regional member countries to the CBD Targets set for 2010 and shared and participated in the Tenth Meeting of the Conference of the Parties (COP) in Nagoya, Japan. Since then, ICIMOD has been part of COP meetings and the numerous Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) meetings, thereby contributing to the CBD agenda.

ICIMOD, along with its regional member countries, has played an important role in contributing to the targets – especially on capacity development and awareness raising in the areas of ecosystem services and payment for ecosystem services; it has also facilitated cooperation among the member countries

through its landscape programme and has generated and provided platform for data sharing through its dedicated Regional Database Initiative. In addition, ICIMOD has been engaged in strengthening protected area (PA) management by developing connectivity corridors; it has also been involved in biodiversity documentation, including that of invasive species.

Since the HKH is a veritable cornucopia and one of the last bastions of rich biodiversity, the region demands a concerted effort to maintain its ecosystem resilience, one that ensures the sustained flow of ecosystem services both for the people living in the HKH and those living downstream. Therefore, global commitments such as the Aichi Biodiversity Targets (hereafter Aichi Targets) become particularly important for the HKH’s present as well as its future generations. In this document, we have made an attempt to reflect the progress of the HKH countries in achieving the Aichi Targets and have also articulated our suggestions for better interventions in terms of the biodiversity framework and targets of the post-2020 scenario. We have fashioned this report on the lines of the [Global Biodiversity Outlook 5](#) (GBO5) and have presented the results achieved by the eight regional member countries of the HKH – Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan – vis-à-vis the Aichi Targets.

We hope that this document will be an important resource material for the member countries, researchers, and the global community at large, and that it will be of value to the efforts going into conserving the fragile ecosystems of the HKH.

**Sunita Chaudhary, Nakul Chettri, and Kabir Uddin**

## Foreword

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The importance of biodiversity has never before been realized as it is now due to several reasons. The efforts put in by the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) through its reports, especially on global assessment, have brought in new insights and have also depicted a bleak future scenario if interventions are not made by the human civilization.

The loud, clear and alarming voice for the global community was echoed by the Dasgupta Review on the Economics of Biodiversity in the month of February 2021. However, the progress made on the global commitments on Aichi Targets has not been satisfactory. The Global Biodiversity Outlook 5, which summarizes progress towards the 20 Aichi Targets, did not paint a promising picture in 2020. The challenge was further aggravated when the whole world slowed down due to the COVID-19 pandemic, which delayed some key events, including the CBD COP15 meeting scheduled for 2020 in Kunming, People’s Republic of China.

The Hindu Kush Himalaya is a living laboratory for understanding biodiversity and climate change and the latter’s impacts on the people and ecosystem of the region as well as on the downstream population. It is very true that what happens in the HKH has repercussions for one-third of the global human population. The HKH’s fragile ecosystems and its significance as a “water tower” and the role of its biodiversity and rich ecosystem nurtured by diverse cultural and traditional practices have all been well recognized, such as in the recently published HIMAP Report. Besides, the regional member countries, realizing the significance of the HKH, have come up with six actions through the HKH Call to Action, and one of the actions is on biodiversity and ecosystem services.

The decade of 2010 to 2020 was seminal for ICIMOD as it focused relentlessly on biodiversity conservation and sustainable use of resources. As an observer and active partner of the CBD, ICIMOD has been instrumental in actively contributing to the Aichi Targets, both through its programmes at the country level as well as through regional and global platforms. And now the time has come for the organization to move forward with even better and more inclusive strategies.

As ICIMOD is in the process of consolidating its present medium-term action plan (2018–2022) with new leadership, this document’s review of progress on the Aichi Targets will act as a guide, both in terms of advocacy regarding the post-2020 global biodiversity framework as well as by way of reorienting programme priorities in line with new avenues based on national priorities, regional needs, and the overall global agenda.

I congratulate the team who put forward this timely document and hope this will be a useful reference material to make our future better and that this will help infuse fresh vigour into activities that strengthen the HKH’s biodiversity, ecosystem, and its people.

Best wishes



**Pema Gyamtsho**  
Director General  
ICIMOD





*Saussurea gossypiphora*, Langtang National Park, Nepal



Grazing in the Deosai Plains, the world's second-highest alpine plateau, Deosai National Park, Pakistan

## Acknowledgements

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The authors thank ICIMOD's Director General, Dr Pema Gyamtsho, for his support and encouragement. The support and contributions made by ICIMOD's eight regional member countries are highly appreciated. This study was partially supported by the core funds of ICIMOD which were contributed by the governments of Afghanistan, Australia, Austria, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Norway, Pakistan, Switzerland, and the United Kingdom. This publication was also made possible by assistance from the Government of Sweden, the Austrian Development Agency, and the German Federal Ministry for Economic Cooperation and Development through its German Agency for

International Cooperation. We are particularly grateful to the experts and CBD Focal Person from the Hindu Kush Himalayan countries who provided constructive comments and suggestions on the first draft. We also thank the distinguished participants of the Regional Policy Dialogue on Aichi Target 11 and beyond: Roadmap for South Asia sub-region.

We would also like to thank Mr Biraj Adhikari for helping to analyse the links between SDGs and Aichi Targets.

## Executive summary

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The Hindu Kush Himalaya (HKH) – stretching over 3,500 kilometres – covers all of Bhutan and Nepal and parts of Afghanistan, Bangladesh, China, India, Myanmar, and Pakistan. The countries sharing the HKH are parties to the Convention on Biological Diversity (CBD) and implemented the Strategic Plan for Biodiversity (2011-2020), adopted in 2010 in the wake of an urgent need to guide global actions towards a pathway to achieve the 2050 Vision of Living in Harmony with Nature. The plan vowed to *take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being and poverty eradication.*

This retrospective analysis of the status and trends of 20 Aichi Targets based on the Sixth National Reports and on the National Biodiversity Strategy and Action Plans (NBSAPs) provides a comprehensive overview of the progress made by the regional member countries in implementing the Strategic Plan for Biodiversity (2010-2020). This study is also expected to contribute to the CBD process when the parties review the progress during CBD COP15; besides, it is likely to strengthen the mechanisms that can support the implementation and monitoring of the Aichi Targets in the post-2020 Global Biodiversity Framework (GBF). The summary of the findings are:



1. Significant progress has been made towards achieving the 20 Aichi Targets: Target 17 (NBSAPs) has been *mostly achieved*, 11 targets have been *partially achieved*, while eight Targets *have not been achieved*.
2. The targets on which the best progress has been made are: Target 7 (sustainable agriculture, forestry); Target 11 (protected areas); Target 15 (ecosystem resilience); and Target 16 (Nagoya Protocol).
3. Overall, about 11 per cent of the targets have been “exceeded”, more than half (55 per cent) of the targets are “on track”; on about 29 per cent of the targets, “progress has been made but at an insufficient rate”; on 3 per cent of the targets, “no significant change” has been reported; in the case of less than half of the targets, there has been a “shift away from them”; and on about 2 per cent of the targets, there is no information available.
4. Variations in the scope and level of ambition in terms of the aligning of national targets with the Aichi Targets; lack of attention to research results and data on species, ecosystems, and drivers of change in the region; and the overdependence on international funding for CBD implementation are some of the major gaps and challenges in the region.

If conservation targets for the HKH are to be met, an overall change in terms of science, policy, and practice across scales is of crucial importance. Only a combination of solutions can usher in the changes required for the post-2020 biodiversity agenda. Some of the recommendations are:

1. The HKH countries are encouraged to tailor their targets and set up measurable indicators to meet global ambitions.

2. Particular emphasis has to focus on balancing conservation and development agenda, promoting nature-based solutions; pushing for integrating biodiversity values; and leveraging national and regional funding.
3. Regional mechanisms like the HKH Call for Action could be promoted and implemented
4. The key areas possible calls for action are:
  - *Vulnerable ecosystems like mountains* (advocating specific concentrated action on the conservation and sustainable development of mountains);
  - *Terrestrial ecosystems* (restoring and conserving intact ecosystems at the landscape level – beyond country boundaries);
  - *Freshwater* (quality and quantity of water for people and biodiversity through an integrated and upstream–downstream approach);
  - *Agrobiodiversity* (enhancing productivity with quality while reducing pressures on biodiversity for food security, genetic diversity, and socioecological resilience);
  - *Urban ecosystem* (promoting sustainable and planned green infrastructure for better health and quality of life); and
  - *Renewable energy* (cutting down the dependency on fossil fuels and promoting nature-based solutions for mitigating the impacts of climate change and reducing pressures on biodiversity).

If such steps are taken, the HKH is likely to make significant progress in the post-2020 Global Biodiversity Framework, and directly contribute to the 2030 Agenda of Sustainable Development, thus, paving a progressive pathway towards the 2050 Vision for Biodiversity in the region.



Plain tiger (*Danaus chrysipus*), Dhading, Nepal

## Abbreviations and acronyms

<b>BFL</b>	Bhutan for Life	<b>IBD</b>	International Day for Biological Diversity
<b>BIMSTEC</b>	Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation	<b>ICIMOD</b>	The International Centre for Integrated Mountain Development
<b>BIOFIN</b>	Biodiversity Finance Initiative	<b>IPBES</b>	The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
<b>BIP</b>	Biodiversity Indicators Partnership	<b>KLCDI</b>	Kangchenjunga Landscape Conservation and Development Initiative
<b>CBD</b>	Convention on Biological Diversity	<b>NAPCC</b>	National Action Plan on Climate Change
<b>CFMG</b>	Community Forest Management Group	<b>NbS</b>	Nature-based Solutions
<b>COP</b>	Conference of the Parties	<b>NBSAPs</b>	National Biodiversity Strategy and Action Plans
<b>EbA</b>	Ecosystem-based Adaptation	<b>OECMs</b>	Other Effective area-based Conservation Measures
<b>EIA</b>	Environmental Impact Assessment	<b>PA</b>	Protected Area
<b>EMP</b>	Environmental Monitoring Programme	<b>PES</b>	Payment for Ecosystem Services
<b>EST</b>	Environmentally Sound Technology	<b>PoWMB</b>	Programme of Work on Mountain Biodiversity
<b>GBIF</b>	Global Biodiversity Information Facility	<b>RCF</b>	Regional Cooperation Framework
<b>GB03</b>	Global Biodiversity Outlook 3	<b>SBSTTA</b>	Subsidiary Body on Scientific, Technical and Technological Advice
<b>GB05</b>	Global Biodiversity Outlook 5	<b>SCBD</b>	Secretariat of the Convention on Biological Diversity
<b>GEF</b>	Global Environmental Facility	<b>SDGs</b>	Sustainable Development Goals
<b>HI-LIFE</b>	The Landscape Initiative for the Far Eastern Himalaya		
<b>HKH</b>	Hindu Kush Himalaya		
<b>HKPL</b>	Hindu Kush Karakoram Pamir Landscape		





Golden langur (*Trachypithecus geei*), Bhutan

CHAPTER 1

# Introduction





Black-necked crane (*Grus nigricollis*), Bhutan

## HIGHLIGHTS

Aichi Targets are critical for the success of SDGs as they are strongly interlinked and mutually reinforcing

HKH countries have made significant progress but failed to meet the Aichi Targets from 2011-2020

### 1.1 Background

The beginning of the third decade of the millennium reported an alarming loss of biodiversity with an average drop by 68 per cent since 1970 (WWF, 2020). The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) also underlined the deteriorating state of worldwide ecosystems and its services (IPBES, 2019). This alarming trend of biodiversity loss threatens the well-being and prosperity of current and future generations (Diaz et al., 2006; Lawson and Nguyen-Van, 2020). The IPBES also highlighted the vital contributions of nature to people in shaping their well-being and its significance in terms of human existence on Earth (IPBES, 2019). In the present context, the COVID-19 pandemic has further emphasized the importance of human-nature relationship and the increased risks of emergence of new diseases from continued environmental degradation, wildlife exploitation, and biodiversity loss (Pearson et al., 2020). The past and ongoing decline in biodiversity and the emergence of diseases show an urgent need for a transformative change – to not only recover but also conserve the diversity of life on Earth.

The transformative change in the global biodiversity policy has been envisaged through the Convention on Biological Diversity (CBD), a global multilateral

treaty which came into effect on 29 December 1993 during the Rio Earth Summit. The Convention, with 196 parties, has been addressing the issue of alarming biodiversity loss while also promoting sustainable development for sustaining life on Earth (CBD, 2000). The CBD was inspired by the global community's commitment towards maintaining the world's ecological underpinnings for sustainable development and thus signifies a historic step forward in biodiversity conservation. The Convention has three main goals: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources (CBD, 2021).

The Convention guides decision makers in conservation and in the sustainable use of biodiversity in order to achieve significant ecological, economic, and social benefits. It focuses on many subject matters; some of the major ones are: regulated access to genetic resources; access to and transfer of technology, including biotechnology; cooperation; impact assessment; education and awareness; provision of financial resources; and national reporting on efforts to implement the commitments made by the state parties (CBD, 2010). With the increased pressure on ecosystems and its services, different thematic programmes involving mountain biodiversity, inland waters, forests, dry and sub-humid lands, and island biodiversity have also

been established with the aim to halt the degradation of ecosystems and to conserve them (CBD, 2020). For instance, the Programme of Work on Mountain Biodiversity (PoWMB), which came into effect in 2004, recognizes the importance of mountains, its richness, uniqueness, endemism, and fragility (CBD, 2007); its purpose is to significantly reduce the loss of biodiversity and contribute to poverty alleviation in the mountains and beyond (CBD, 2007). With these objectives, the world's nations agreed and adopted a Strategic Plan for Biodiversity (2011–2020) in 2010 to support the effective implementation of the Convention – this is widely known as the Aichi Targets (CBD, 2011).

#### Strategic Plan for Biodiversity (2011–2020)

The Strategic Plan for Biodiversity (2011–2020), formally adopted by COP in 2010 in the Aichi prefecture of Nagoya, Japan, is an overarching global framework on biodiversity whose vision is to value, restore, and conserve biodiversity for the benefit of all people by 2050 (CBD, 2011). The purpose of the Plan was to promote the effective implementation of the Convention with a strategic approach, one that would be guided by a common mission and strategic goals and targets for the state parties and other relevant stakeholders (CBD, 2011). The Plan has five strategic goals (see Table 1) which directly relate to addressing the causes behind the loss of biodiversity; they also



**TABLE 1 STRATEGIC GOALS (2011–2020) AND THE 20 AICHI TARGETS OF THE CONVENTION ON BIOLOGICAL DIVERSITY**

<b>Strategic Goal A</b>	<b>Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society</b>
	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.
	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.
	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.
	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.
<b>Strategic Goal B</b>	<b>Reduce the direct pressures on biodiversity and promote sustainable use</b>
	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.
	By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and [by] 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.
	By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
	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.
	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.
<b>Strategic Goal C</b>	<b>Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity</b>
	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.
	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.
	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

<b>Strategic Goal D</b>	<b>Enhance the benefits to all from biodiversity and ecosystem services</b>
	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.
	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.
	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.
<b>Strategic Goal E</b>	<b>Enhance implementation through participatory planning, knowledge management and capacity building</b>
	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.
	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.
	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.
	By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 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 resources needs assessments [and is] to be developed and reported by [the] Parties.

Source: CBD (2010); Marques et al., (2014)

entail reducing pressures and improving the status of biodiversity and ecosystem services (Buchanan et al., 2020). The Plan is being implemented at national and subnational levels by the respective state parties through the National Biodiversity Strategies and Action Plans (NBSAPs); it also has set targets for each country. These instruments help tailor the Plan to meet the demands dictated by the contexts of each country (CBD, 2011); besides, the progress made in achieving the targets and milestones are reported through national reports to the Secretariat of the Convention on Biological Diversity (SCBD). These national reports provide an overview of the progress made in achieving the targets of the Plan. The strategic goals are supported by an ambitious and yet achievable set of 20 targets, which is also known as the Aichi Biodiversity Targets or Aichi Targets.

### Aichi Biodiversity Targets

The Aichi Targets are global targets aiming to halt biodiversity loss and increase successful conservation outcomes at the global level (O'Connor et al., 2015). There are 20 targets organized under the five strategic goals of the Strategic Plan for Biodiversity (2011–2020) (see Table 1). These 20 targets embedded in the Strategic Plan were adopted at the Tenth Meeting of the Conference of the Parties to CBD (CBD COP10); they set a benchmark for biodiversity actions at the global scale. The Aichi Targets worked as a guide to regional and national target settings, based on which each country contextualized and delineated its targets (Buchanan et al., 2020). These national targets have been integrated into the NBSAPs, which were adopted as a policy instrument for the integration of the Aichi Targets into national development and poverty reduction strategies, planning processes, and the practices of government, non-government, and



related stakeholders (CBD, 2011). The NBSAPs provide details on the measures to be taken to achieve the targets.

The monitoring and reporting of the progress made in achieving the Aichi Targets in accordance with the Strategic Plan have been done through national reports by each country to the CBD. Each country was required to submit its national report with details on the progress made in attaining its targets and also its contribution towards realizing the Global Aichi Targets. The national reports also provide information on the measures taken for the implementation of the CBD.

## 1.2 Rationale

Biodiversity and healthy ecosystems and their services are the basis of the Sustainable Development Goals (SDGs). The 2030 Agenda<sup>1</sup> for Sustainable Development, agreed upon by 193 state parties to the United Nations, clearly mentions the role of biodiversity in human well-being and development. About half of the human population and many vulnerable people directly depend on biodiversity for their subsistence (UNDP, 2015). This shows the key role that biodiversity plays in shaping human well-being, as well as in supporting the fulfilment of all 17 SDGs (CBD, 2018). The SDGs and the Strategic Plan for Biodiversity are strongly interlinked and mutually reinforcing; they show the contributions of one leading to the achievements of the other (Opoku, 2019). Both the Agenda and the Strategic Plan aim to tackle the dual global challenges of climate change and biodiversity loss (CBD, 2018).

The loss of biodiversity and the deterioration of ecosystems have been continuing despite global policy discourses and conservation practices. The failure to address the underlying causes of biodiversity loss, as reported by the Global Biodiversity Outlook 3 (GBO3) in 2010, contributed to the making of the Strategic Plan for 2011–2020 (CBD, 2011). The Plan aimed to guide global actions in addressing the direct and indirect drivers impacting biodiversity and ecosystem services (CBD, 2021). Since the adoption of the Plan with its embedded 20 Aichi Targets in 2010, the member states and

different non-government organizations have been taking significant actions at local, national, and global scales to address the loss and manage biodiversity sustainably (CBD, 2011). Some states have made significant progress in achieving their national targets and in contributing to the strategic goals, but some others are far behind the targets (CBD, 2021). For instance, the global coverage in terms of protected areas (Aichi Target 11) has increased to 15.7 per cent by the end 2021; this indeed reflects considerable progress (UNEP-WCMC, 2021); but the advancement on some other Aichi Targets has been rather slow. All said, with the end of the year 2020, we reviewed, analysed and evaluated the progress made by the countries in achieving the Aichi Targets.

This review of the success or failure rate in attaining the Aichi Targets is significantly important to understand the impacts and efficacy of the measures taken by the individual states. As the fulfilment of national biodiversity commitments is a key part of global conservation efforts (Bacon et al., 2019), this evaluation helped in identifying the challenges and obstacles that have prevented the targets from being met. It would also help in planning the necessary actions that have to be taken to achieve future targets. The global review conducted by the Global Biodiversity Outlook 5 (GBO5) shows that the biodiversity targets set in 2010 have not been met in full (GBO5, 2020). While good progress has been made on some of the targets, such as Target 11, not much headway has been made on several others (UNEP-WCMC, 2021). In this regard, GBO5 has given a global overview of each target and has also recommended actions to achieve the targets (CBD, 2020).

However, in the case of reviewing the performance on the Aichi Targets on the HKH regional scale, no such evaluation has taken place (Tittensor et al., 2014) other than the examination of some targets at the national scale (Hagerman and Pelai, 2016). So, this regional assessment is particularly significant; more so because the performance of the countries vis-à-vis the Aichi Targets would be assessed by the parties to the CBD during COP15 to the Convention on Biological Diversity (CBD) which is to be held in 2022. The CBD COP15 promises to be a breakthrough platform for creating transformative change in the

history of global biodiversity policy. During COP15, the parties will not only review progress but also make recommendations on overcoming the obstacles encountered in meeting the Aichi Targets (CBD, 2011). Further, the post-2020 Global Biodiversity Framework (2020–2030) would be negotiated and adopted by the governments for action to halt the biodiversity crisis and to better conserve biodiversity and ecosystem services (CBD, 2020). This provides a unique opportunity to plan the actions required to save the Earth and its humanity; at COP15, the global community is expected to commit to a 10-year action agenda (2020–2030) for the betterment of biodiversity conservation. The Post-2020 Global Biodiversity Framework (2020–2030) would guide the actions on biodiversity over the next decades and provide an additional rationale to reflect and gather evidence on the vision adopted in Nagoya in 2010. Presently, our aim is to assess the progress made in meeting the 20 Aichi Targets in the Hindu Kush Himalaya (HKH).

### Scope of the assessment in the HKH

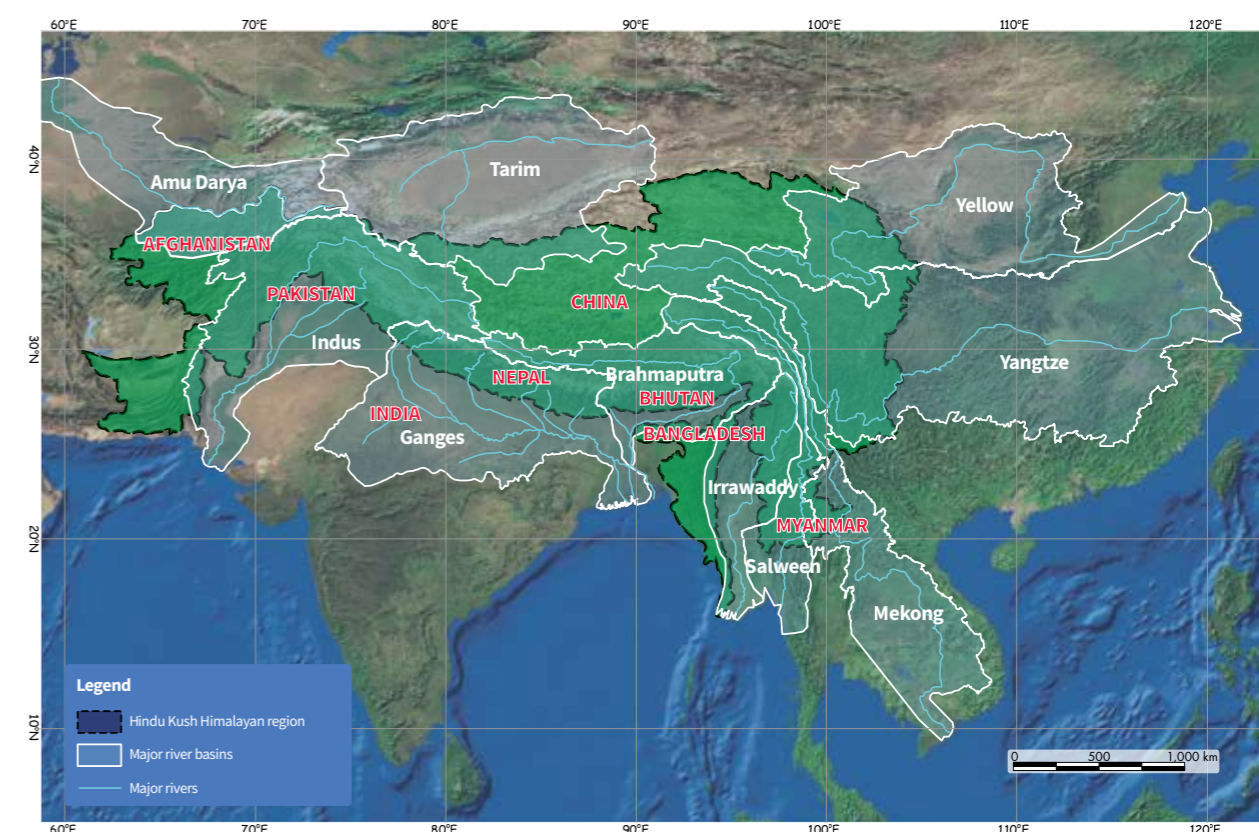
The Hindu Kush Himalaya covers all of Bhutan and Nepal, and parts of Afghanistan, Bangladesh,

China, India, Myanmar, and Pakistan (see Figure 1). It is stretched over 3,500 kilometres and covers an area of more than 4.2 million square kilometres (Bajracharya et al., 2015). The HKH is an important global mountain system comprising the world's 10 highest peaks, including Mount Everest (8,848 masl). The region has diverse climate and vegetation, shaped by varied altitudinal and latitudinal gradients (Xu et al., 2009; Molden et al., 2017; Sharma et al., 2019). Ten river basins – the Amu Darya, Brahmaputra, Ganges, Indus, Irrawaddy, Mekong, Salween, Tarim, Yangtze, and Yellow – originate in the region, and connect upstream and downstream for culture, trade, communication, and resource management.

The region has the largest mass of ice cover in the world apart from the North and South poles and therefore, considered as the Third Pole and the Water Tower of Asia (Wester et al., 2019).

The HKH is also an ecologically rich mountain biome. The region has all or parts of four global biodiversity hotspots, 330 important bird areas (Chettri et al., 2008), and is among the Global 200 Ecoregions (Olson

FIGURE 1 THE HINDU KUSH HIMALAYA REGION WITH ITS MAJOR RIVERS AND RIVER BASINS



Source: Sharma et al., (2019) (Map used with permission).

<sup>1</sup> The 2030 Agenda is a plan of action for people, planet, and prosperity, which seeks to strengthen universal peace and larger freedoms. It recognizes that eradicating poverty in all its forms and dimensions is the greatest global challenge and an indispensable requirement for sustainable development. The Agenda has 17 Sustainable Development Goals (SDGs) and 169 targets to be achieved by 2030 (UNDP, 2015).



and Dinerstein, 2002). Besides, the region embodies exceptional cultural richness with its vast array of religions, languages, and traditional knowledge systems and practices (Sharma et al., 2019). It is also home to more than 1000 ethnic communities (Turin, 2005). Further, it provides diverse ecosystem services that sustain the lives of 1.9 billion people (Molden et al., 2014; Sharma et al., 2015; Xu et al., 2019).

But the region is also highly fragile and faces various challenges and threats. The HKH is regarded as a major hotspot of climate change (De Souza et al., 2015) and is often marked as a “risk hotspot” for climate-included disasters and hazards (Tucker et al., 2015). Besides, it is grappling with environmental degradation that has affected the functioning and flow of its ecosystem services (Chettri et al., 2010; Xu et al., 2019). For instance, the HKH has lost more than 70 per cent of its original ecosystems, making it a part of what is called “crisis ecoregions” (Brooks et al., 2006; Mittermeier et al., 2011). It was in order to halt the crisis and protect the region’s people and nature that the International Centre for Integrated Mountain Development (ICIMOD) came into being in 1983. ICIMOD, with its regional mandate, works towards sustainable mountain development through various programmes and initiatives (Sharma et al., 2019). Its Regional Programme on Transboundary Landscapes, initiated in 2008, is a flagship project that focuses on regional cooperation to address the multifaceted challenges in the region and promote sustainable development (Molden et al., 2017). The programme has adopted the CBD’s Ecosystem Approach to strengthen the socio-ecological resilience of the HKH (Chettri and Sharma, 2016).

ICIMOD has been mandated to carry out sustainable mountain development in the HKH. It has been recognized by the CBD as an Observer and is committed to implementing the objectives of the CBD in the region. It has also been contributing to various Programme of Works (PoW), including the ones related to protected areas (PAs) and mountain biodiversity, at different platforms such as the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and COPs. Besides, since 2010, ICIMOD has been actively involved in events like the ones associated with the International

Year of Biodiversity and implemented a regional project on Aichi Target 11 as a regional coordinator for South Asia Regional Implementation Support Network (RISN). As part of its role in the CBD, ICIMOD in 2010 undertook a retrospective analysis of CBD implementation in the HKH region (Desai et al., 2010). The analysis gave a regional overview of the status of the eight HKH countries vis-à-vis the CBD and contributed to the discussions during the Tenth Meeting of the Conference of Parties (COP10). The study showed varying levels of progress by the HKH countries towards attaining the CBD goals. For instance, China and India were seen to have given high priority to all conservation activities, while Afghanistan, Bhutan, Nepal, and Pakistan were judged to have given medium-to-low priority to most of the articles of the CBD. Certain factors such as limited capacity, conflicts, lack of access to resources, and inadequate scientific capability were found to have affected the achievement of the CBD goals by the HKH countries. Thus, concentrated efforts to ensure capacity building as well as the strengthening of financial and technological capability, along with strong political commitment, were recommended as ways to progress towards achieving the CBD goals (Desai et al., 2010).

All the HKH countries are parties to the CBD and obliged to implement its three objectives. In 2010, these countries made a commitment during COP10 in Nagoya to address the challenges and work towards the implementation of the Strategic Plan for Biodiversity (2011-2020) (CBD, 2011). Each country pledged to work and progress towards meeting the 20 Aichi Targets by 2020. Over a decade from 2010-2020, the HKH countries made significant progress on the Aichi Targets (CBD, 2020). With the end of a decade, this study reflects on the progress made by these countries in attaining the Aichi Targets; it also identifies the challenges and suggests a way forward for the region. This study is expected to contribute to the CBD process during the review of the progress and adoption of the post-2020 Global Biodiversity Framework during COP15 in 2022. It is also likely to strengthen the mechanisms that can support the implementation and monitoring of the Aichi Targets in the post-2020 Biodiversity Framework of the region.

## 1.4 Aim and objectives

This review tracked the progress made by the eight HKH countries in meeting the 20 Aichi Targets over the period of 2011–2020. It focused particularly on the following objectives:

- Analyse the progress made from 2011 to 2020 vis-à-vis the Aichi Targets
- Understand the links between the Aichi Targets and the SDGs at the global and regional levels
- Identify the gaps and challenges, and come up with recommendations with special reference to mountain ecosystems





Lotus (*Nelumbo nucifera*), Bangladesh

CHAPTER 2

## Methods





Fishing in Maguri beel, upper Assam, India

## HIGHLIGHTS

The “state-of-the-art” method was adopted for comprehensive review of sixth national reports (6NR) and national biodiversity action plans (NBSAPs)

### 2.1 Methodological framework

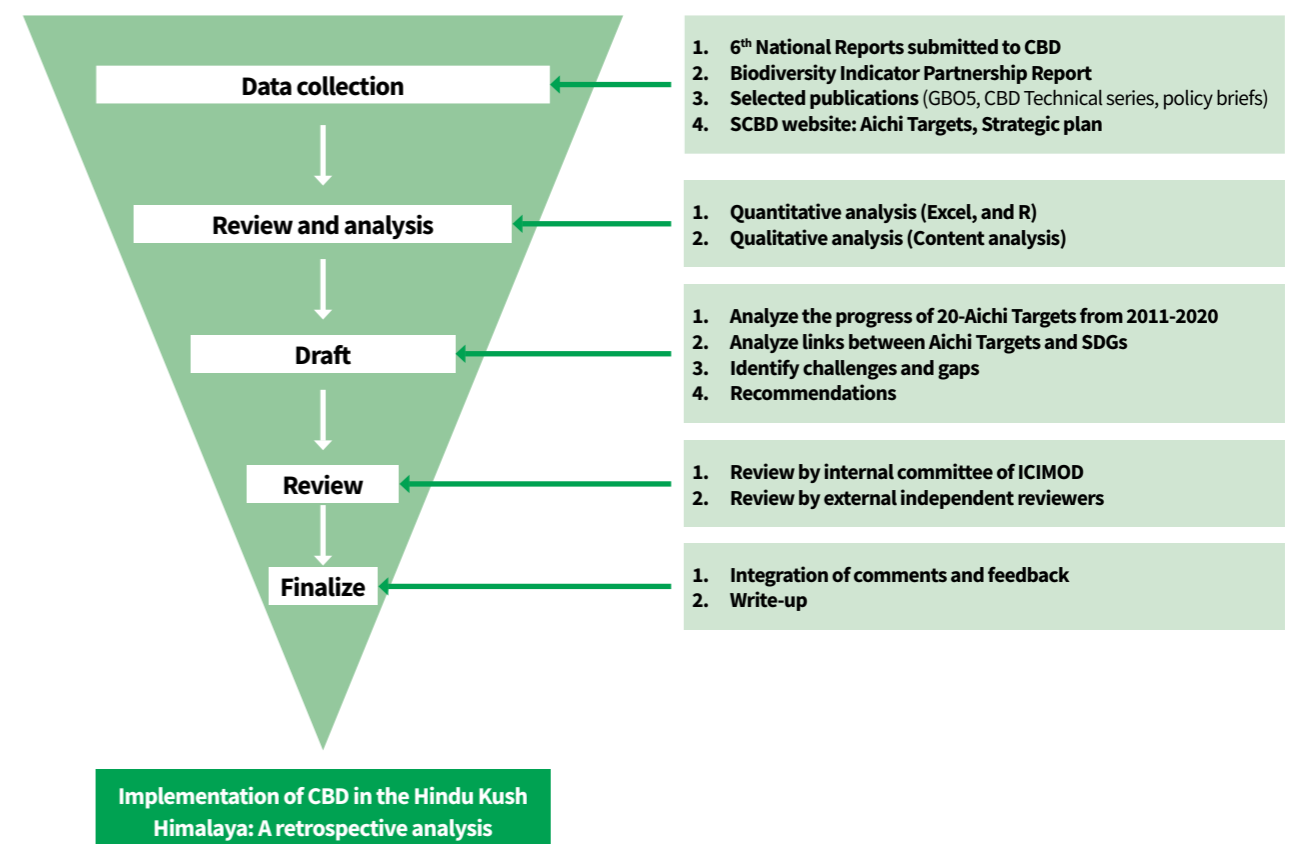
This study adopted the “state-of-the-art” method (Grant and Booth, 2009) and conducted a comprehensive review of the relevant literature in order to analyse the implementation aspects of the CBD in the HKH (see Figure 2). The state-of-the-art method focuses on specific subject matter(s) to gain new perspectives and track the progress of an issue or subject matter so as to pave way for further action (Grant and Booth, 2009).

### 2.2 Data collection

The assessment was primarily based on literature focusing on the implementation of the Aichi Targets in the HKH (see Table 2). Our assessment has been mainly grounded on CBD reports and its website, policy briefs, the National Biodiversity Strategy and Action Plans (NBSAPs), and the Technical Series. The Sixth National Reports, and the NBSAPs (submitted in 2018) by the respective regional member countries (Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan) to the SCBD (CBD, 2020). The other selected literature were the Fifth Report of the Global Biodiversity Outlook (GBO5), the IUCN Red List, and publications from the Biodiversity Indicators Partnership (BIP).

FIGURE 2

METHODOLOGICAL FRAMEWORK OF THE REVIEW

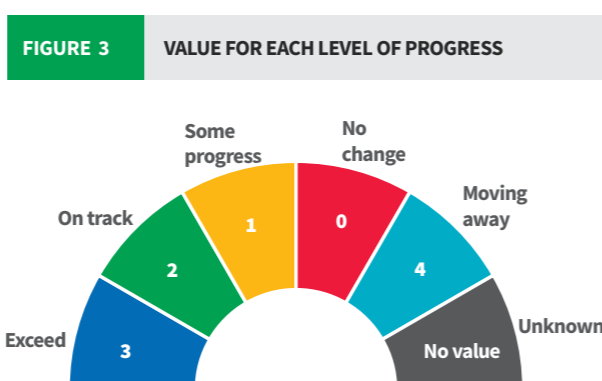




## 2.3 Methods of analysis

The assessment included both qualitative and quantitative methods to review and analyse the relevant literature. For quantitative analysis, Excel and R were used to assess the progress made by each country in meeting the 20 Aichi Targets. For this, we adopted the indicators allocated by the CBD, which were used by the countries to report their quantitative progress on the Aichi Targets (see Figure 3). For each level of progress, a numerical value was assigned in this manner: very good = 3; good = 2; fair = 1; and low = 0. Following the above table, the progress reported by each country was analysed descriptively in Excel and interpreted accordingly (see Chapter 4).

For the qualitative inquiry, a content analysis was performed by reviewing and analysing the literature through the coding of themes (Chaudhary and McGregor, 2018; Erlingsson and Brysiewicz, 2017).



The coding of these themes was guided by the following elements: links between the Aichi Targets and the SDGs; and challenges and gaps. The data sources were reviewed and coded with themes such as links, challenges, and gaps. After the coding, those themes were analysed as per the objectives and interpreted accordingly.

TABLE 2 SOURCES OF DATA		
SN	Literature	Details
1.	CBD	<a href="http://www.cbd.int">www.cbd.int</a>
	Country National Reports	<ul style="list-style-type: none"> <li>Provides a detailed progress report on each country vis-à-vis international biodiversity targets</li> </ul>
	NBSAPs	<ul style="list-style-type: none"> <li>Country strategies, plans or programmes for the conservation and sustainable use of biological diversity which shall reflect, inter alia, the measures set out in the CBD</li> <li>The national indicators for each HKH country were thoroughly assessed by analysing the coherence and priorities vis-à-vis the Aichi Targets; this was based on NBSAPs and the national reports submitted by the regional member countries</li> </ul>
	Technical Series	<ul style="list-style-type: none"> <li>Up-to-date and accurate information on selected topics like Series 78 focusing on the Aichi Targets</li> </ul>
	Policy briefs, reports, newsletters, event pages, and website	<ul style="list-style-type: none"> <li>Related to meeting the Aichi Targets</li> <li>Up-to-date information on the Aichi Targets</li> </ul>
2.	Biodiversity Indicators Partnership (BIP)	<a href="https://www.bipindicators.net/">https://www.bipindicators.net/</a>
		<ul style="list-style-type: none"> <li>Detailed overview of the biodiversity indicators to measure and report progress</li> <li>The assessment particularly used the primary indicators to assess the progress on Aichi Targets 4,16,17,18, and 20; these indicators opened up the possibility to downscale at regional and country scales</li> </ul>
	Website, reports	<ul style="list-style-type: none"> <li>Up-to-date information on the indicators of the Aichi Targets</li> </ul>
3.	Global Biodiversity Outlook (GBO) reports	<a href="https://www.cbd.int/gbo5">https://www.cbd.int/gbo5</a>
		<ul style="list-style-type: none"> <li>A periodic flagship publication of the CBD that summarizes the latest data on the status and trends of biodiversity; for this study, the fourth and fifth GBOs were reviewed</li> </ul>
4.	IUCN Red List	<a href="https://www.iucnredlist.org/">https://www.iucnredlist.org/</a>
		<ul style="list-style-type: none"> <li>Aichi Targets 11 and 12</li> </ul>



*Amaranthus caudatus*, Nepal





Rufous-necked hornbill (*Aceros nipalensis*), Namdapha National Park, India

CHAPTER 3

## Global overview of the progress on Aichi Targets





A mule grazing near Nyalula pass, Humla, Nepal

#### HIGHLIGHTS

There has been inadequate progress towards the Aichi Targets globally

Six targets have been partially achieved with varying levels of confidence, while 14 targets have not been achieved

### 3.1 Background

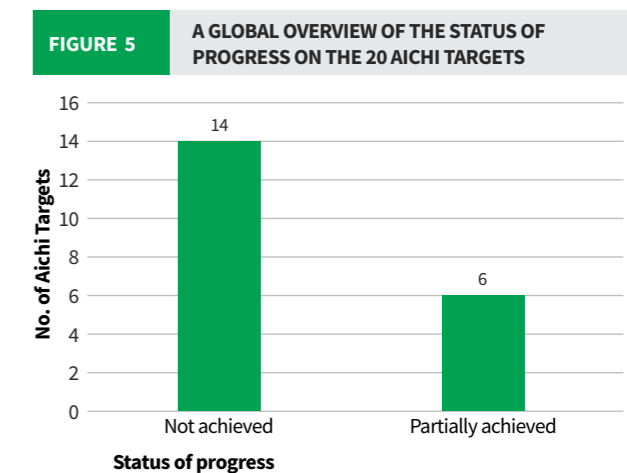
In 2010, the parties to the CBD adopted the Strategic Plan for Biodiversity (2011–2020) consisting of the 20 Aichi Targets and agreed to translate those targets into National Biodiversity Strategies and Action Plans; they also agreed to report on the targets at regular intervals (Green et al., 2019). Guided by this global Strategic Plan, the parties to the CBD developed their NBSAPs based on national ambitions and targets that aligned with the 20 Aichi Targets. As agreed, the parties submitted their Sixth National Report to the SCBD by 2018. The national reports provided detailed information on the measures taken for the implementation of the CBD and on the effectiveness of those measures; this laid the foundation for a global assessment of the progress towards meeting the Aichi Targets (SCBD, 2020). The Global Biodiversity Outlook, a flagship and periodic publication of the CBD, has provided a detailed assessment – based on NBSAPs and national reports – of the progress made on the Aichi Targets (SCBD 2020). This chapter is based on a review of GBO4 and GBO5 and is complemented by a review of other relevant literature that focused on a global overview of the implementation of the Aichi Targets.

### 3.2 Overview of the progress made on the Aichi Targets

The mid-term assessment of the Strategic Plan for Biodiversity (2011–2020) carried out through GBO4 in 2014 showed good progress in the case of the majority of the targets (SCBD, 2014). But the assessment also concluded that it was unlikely that the majority of the targets would be met by 2020 (Leadley et al., 2014). The analysis of national reports showed that only 5 per cent of the countries were on track to meet the targets, while around 75 per cent of them were progressing at an insufficient rate. And about 20 per cent of the countries had showed no progress or were even moving away from the targets (Figure 4).

Following this assessment, GBO4 recommended potential actions on each target for the achievement of the goals and targets of the Strategic Plan by 2020 (Buchanan et al., 2020). Since then, significant efforts were made to achieve the targets by 2020. Till recently, significant progress on a number of targets has been made but a complete global overview of the progress has shown poor results (Green et al., 2019; Pinheiro et al., 2019; SCBD, 2020). The final assessment carried out in 2020 through GBO5 reported inadequate progress in the case of the majority of the countries (SCBD, 2020). Out of the 20 Aichi Targets, 14 targets have not been achieved, while only six targets

have been partially achieved with varying levels of confidence (see Figure 5).

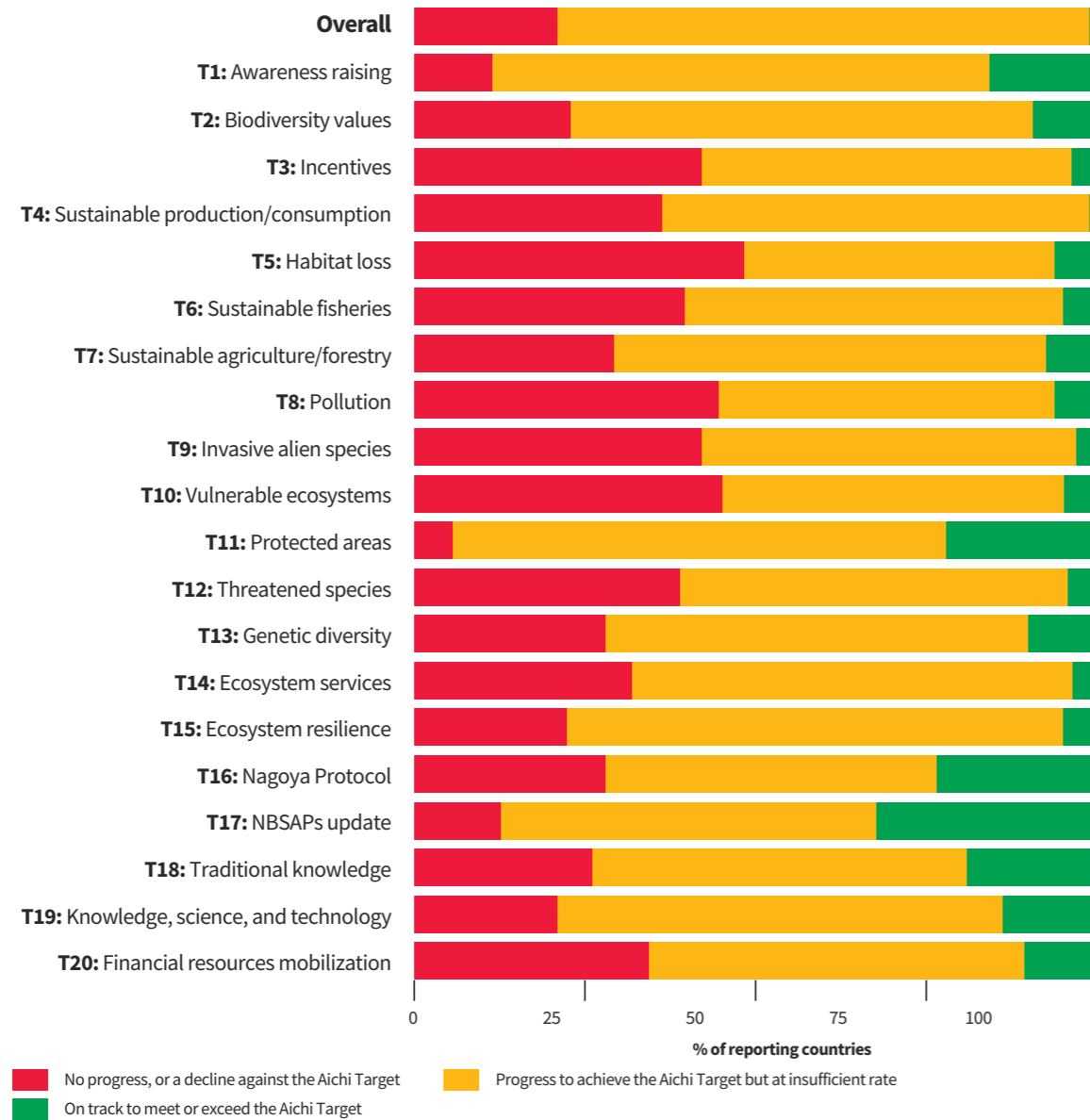


Source: CBD (2020)

Among the 14 targets, Aichi Targets (4, 5, 6, 7, 10, and 12) were not achieved, while six targets (2, 3, 8, 13, 14, and 15) have been partially achieved. The progress made in terms of sustainable production/consumption (Target 4), prevention of habitat loss (Target 5), ensuring sustainable fisheries (Target 6) and sustainable agriculture (Target 7), and in the sphere of threatened species (Target 12) is worrisome; in the case of the latter, the Red List Index shows an increase in the number of threatened species over the last two decades (see Figure 6).



**FIGURE 4** MID-TERM PROGRESS TOWARDS MEETING THE AICHI TARGETS AT GLOBAL LEVEL



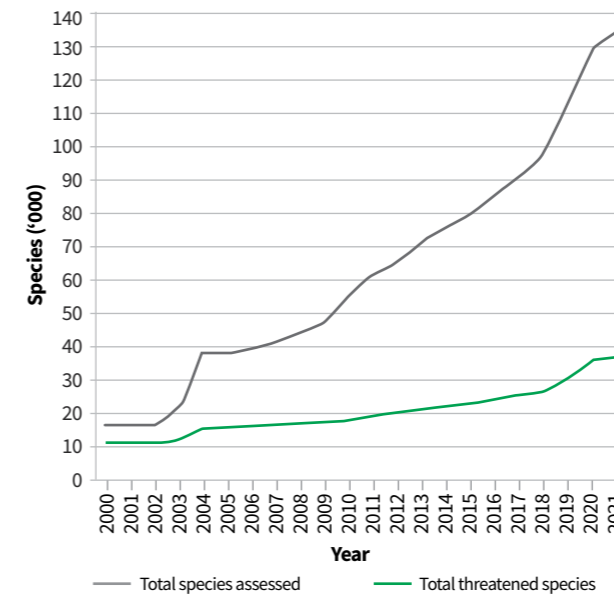
Source: CBD (2016)

However, good progress has been recorded in meeting some targets, like Awareness (Target 1) and Traditional Knowledge (Target 18). Also, the awareness status of the global community about biodiversity has shown some encouraging signs (Figure 7); across countries, at the global level, more people, especially the younger ones, seem to know about biodiversity, its value, and about the importance of its sustainable use (CBD, 2020).

Among the six Aichi targets (9, 11, 16, 17, 19, and 20) where partial achievements have been registered, Aichi Targets 11 (protected areas), 16

(Nagoya Protocol), 17 (NBSAP), and 20 (financial resource mobilization) have been achieved with high confidence, while Targets 9 (invasive alien species) and 19 (knowledge, science, and technology) have been achieved with medium confidence. The PAs (Target 11), in particular, have progressed well over the last decade (Figure 8). There are a total of 257,817 protected areas (as of February 2021), with the terrestrial coverage increasing slightly from 14.7 per cent in 2016 to 15.4 per cent in 2021 (UNEP-WCMC, 2021).

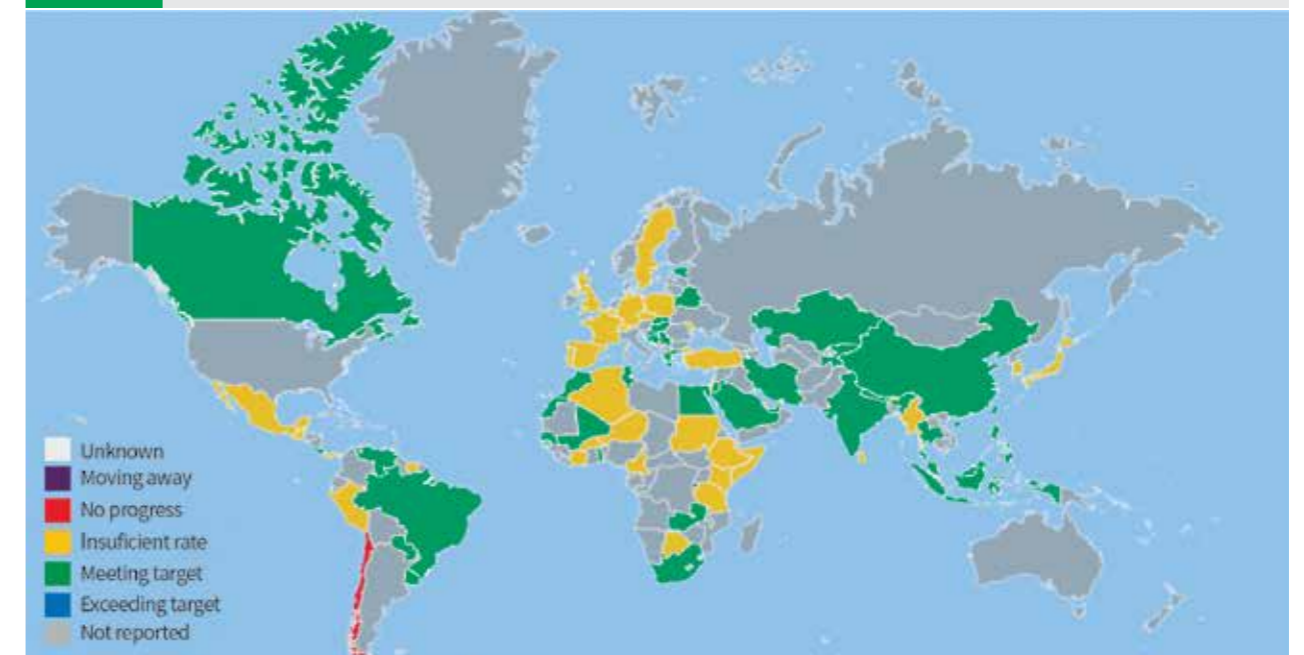
**FIGURE 6** INCREASE IN THE NUMBER OF THREATENED SPECIES (2000-2021)



Source: IUCN (2021).

2016). The majority of the countries set their national targets lower than the global ambition – probably based on priority and on making the targets realistic. Only 10 per cent of the countries reported that their national targets are commensurate with the global level of ambition, while 40 per cent set their targets at a less ambitious scale, and about 50 per cent set them at a lower level of ambition (CBD, 2016). Therefore, though efforts have been made both in policy and practice, the targets involving biodiversity loss and improving the state of biodiversity were not reached by 2020 (Tittensor et al., 2019). Moreover, the review showed that the majority of the countries have made little or no progress on the Aichi Targets; indeed, some countries appear to have moved away from the targets – like in the case of Targets 5, 8, 10, and 12 (Buchanan et al., 2020).

**FIGURE 7** AICHI TARGET 1 – STATUS OF AWARENESS ACROSS COUNTRIES AT THE GLOBAL SCALE.



Source: CBD (2020)

### 3.3 Gaps, implications, and recommendations

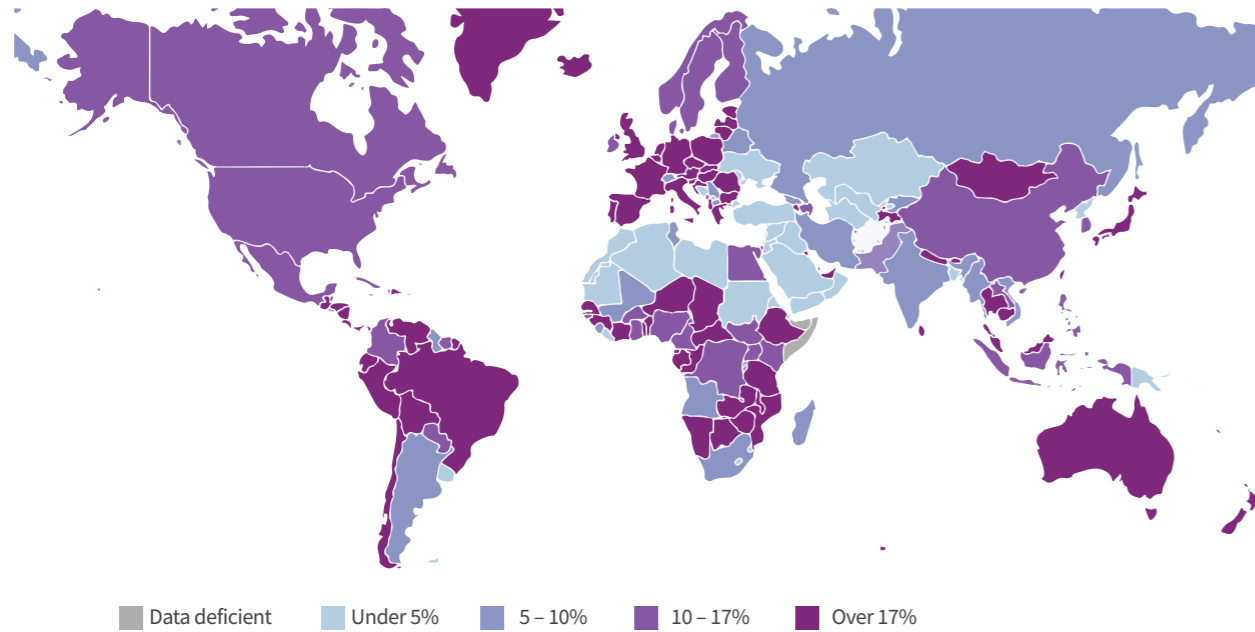
The review showed major gaps in the achievement of the Aichi Biodiversity Targets. There have been gaps in the level of ambitions and also in the actions taken by individual countries to fulfil their commitments. This means that the translation of the Global Aichi targets into NBSAPs has been weakly reflected (CBD,

So, going by this trend, biodiversity will continue to suffer losses, thereby jeopardizing the prospects of meeting the SDGs (IPBES, 2019). For example, the drivers of biodiversity loss such as pollution and climate change directly respond to the SDGs, and so do sustainable production, consumption, and efficient use of resources. With the attainment of the Aichi Targets, the SDGs could have been moving



FIGURE 8

AICHI TARGET 11 – EXTENT OF TERRESTRIAL PROTECTED AREAS COVERAGE



Source: UNEP-WCMC (2021)

towards a progressive pathway with improvements in other underlying conditions such as building the capacity of institutions and human resources, enhancing gender equity, and reducing inequalities (Brooks et al., 2015; Schultz et al., 2016).

However, the review and available evidence also suggest that the current trends in biodiversity loss can be halted. This requires transformative change through concerted efforts across scales (CBD, 2016, 2020). The scaling up of local efforts to conserve and restore biodiversity through PAs or other conservation measures could contribute to positive conservation and sustainable development outcomes.

There are also viable Nature-based Solutions (NbS) that can mitigate climate change. Special attention ought to be paid to speed up actions on the pressures on biodiversity, including those of pollution and unsustainable harvesting and consumption. Transformative actions are also required to address food insecurity and to conserve agrobiodiversity. Similarly, transformations are necessary to promote and strengthen forestry, fisheries, and the energy sector. These call for collaboration and cooperation among a wide range of right holders and stakeholders across scales – only then can the vision of living in harmony with nature by the year 2050 be achieved (CBD, 2020).



A fisherman on Loktak Lake, Manipur, India





CHAPTER 4

## **Progress towards the Aichi Targets in the Hindu Kush Himalaya**





Panchthar yak festival, eastern Nepal

## HIGHLIGHTS

There are variations in the degree of ambition between global and national targets

Among HKH countries, of the 20 targets, one has been mostly achieved, 11 have been partially achieved, while eight have not been achieved

### 4.1 Background

This chapter provides an overview of the progress reported, target by target, of all the 20 targets, by the eight regional member countries of the HKH. The documentation starts by attempting to understand the alignment of each country's national targets with the 20 Global Aichi Targets; this is followed by a summary of the evaluation of each target.

### 4.2 Alignment of national targets with the 20 Aichi Targets

The Aichi Targets were adopted by the HKH countries to develop national targets and NBSAPs. However, there have been variations in the degree of ambitions; this has been shaped by relevance and the circumstances at the national scale. Except for Afghanistan, the rest of the countries – Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – have adopted all the 20 Aichi Targets to set their national targets, basing them on their national contexts (see Table 3). Afghanistan has adopted only 11 national targets in its NBSAP. These national targets directly relate to Aichi Targets 1, 5, 7, 8, 9, 11, 12, 13, 14, 15, 16, 18, and 20; the other Aichi Targets 2, 3, 4, 6, 10, 17, and 19 have not been reflected in the country's 11 national targets.

TABLE 3

ALIGNMENT OF NATIONAL TARGETS WITH THE GLOBAL AICHI TARGETS

Aichi Targets	Country's national target priority							
	Afghanistan	Bangladesh	Bhutan	China	India	Myanmar	Nepal	Pakistan
T1: Awareness raising	✓	✓	✓	✓	✓	✓	✓	✓
T2: Biodiversity values	×	✓	✓	✓	✓	✓	✓	✓
T3: Incentives	×	✓	✓	✓	✓	✓	✓	✓
T4: Sustainable production/consumption	×	✓	✓	✓	✓	✓	✓	✓
T5: Habitat loss	✓	✓	✓	✓	✓	✓	✓	✓
T6: Sustainable fisheries	×	✓	✓	✓	✓	✓	✓	✓
T7: Sustainable agriculture/forestry	✓	✓	✓	✓	✓	✓	✓	✓
T8: Pollution	✓	✓	✓	✓	✓	✓	✓	✓
T9: Invasive alien species	✓	✓	✓	✓	✓	✓	✓	✓
T10: Vulnerable ecosystems	×	✓	✓	✓	✓	✓	✓	✓
T11: Protected areas	✓	✓	✓	✓	✓	✓	✓	✓
T12: Threatened species	✓	✓	✓	✓	✓	✓	✓	✓
T13: Genetic diversity	✓	✓	✓	✓	✓	✓	✓	✓
T14: Ecosystem services	✓	✓	✓	✓	✓	✓	✓	✓
T15: Ecosystem resilience	✓	✓	✓	✓	✓	✓	✓	✓
T16: Nagoya Protocol	✓	✓	✓	✓	✓	✓	✓	✓
T17: NBSAPs update	×	✓	✓	✓	✓	✓	✓	✓
T18: Traditional knowledge	✓	✓	✓	✓	✓	✓	✓	✓
T19: Knowledge, science, and technology	×	✓	✓	✓	✓	✓	✓	✓
T20: Financial resources mobilization	✓	✓	✓	✓	✓	✓	✓	✓

✓ = Global Aichi Target used; × = Target not set. (Source: Sixth National Report submitted to the CBD)  
Source: CBD (2020)



Varying degrees of ambition were noted in adapting to the 20 Aichi Targets that would establish the national targets as per each country's unique circumstance and the relevance of the targets. For instance, as the following three points show, the ambition of Aichi Target 11 on PAs has been set differently by the HKH countries compared to at least 17 per cent area under protected areas coverage.

1. Nepal set its target above the global target with at least 25 per cent for PA coverage and to sustainably manage the PA system by 2020.
2. Bhutan, with already more than half of its land being PAs, emphasized on management effectiveness and financial sustainability by setting Target 11 to maintain the current PA system with enhanced management effectiveness and financial sustainability by 2020.
3. Bangladesh set its target below the global target by committing 3 per cent area under the terrestrial ecosystem, 3 per cent under inland wetland and coastal ecosystems, and 5 per cent under marine area by 2020.

The ambition for Aichi Targets 8 (pollution reduced) and 9 (invasive alien species prevented) for most of the HKH countries have also been set differently at the national scale. For instance, Myanmar and Pakistan, in terms of Target 8, have focused on policy interventions at the national scale compared to Aichi Target 8. Similarly, for Target 9, while Afghanistan has included the target at the national scale, the indicator for measurement is missing.

### 4.3 Progress towards the 20 Aichi Targets in the Hindu Kush Himalaya

The meeting of Aichi Targets showed varying levels of progress. For instance, Target 17 (NBSAPs) has made the most progress in the region, with Bangladesh and China “exceeding” the target and other member countries reporting to be “on track”. It is followed by Target 7 (sustainable agriculture and forestry), with all countries “on track” except for Afghanistan which has reported “some progress”. As for Target 11 (PAs), it has been “exceeded” by Bhutan and Nepal; Bangladesh and India have reported their progress to be “on track”; while Myanmar, Pakistan, and Afghanistan have reported “some progress”.

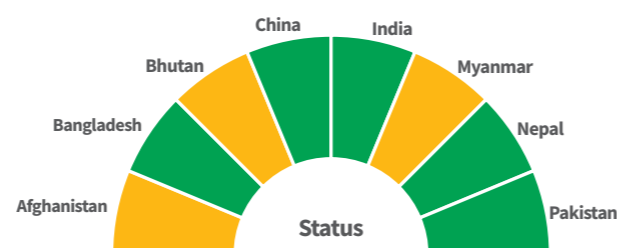
As regards Target 9 (invasive alien species prevented), it showed a low score, with six countries reporting “some progress” and Myanmar recording “no change”. Similarly, Targets 6 (sustainable fisheries), 10 (vulnerable ecosystems), and 12 (threatened species) show worrisome results, with Pakistan reporting “no change” for Targets 10 and 11, and Myanmar reporting “no change” for Target 12.

#### Aichi Target 1: Improve awareness about biodiversity

*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.*

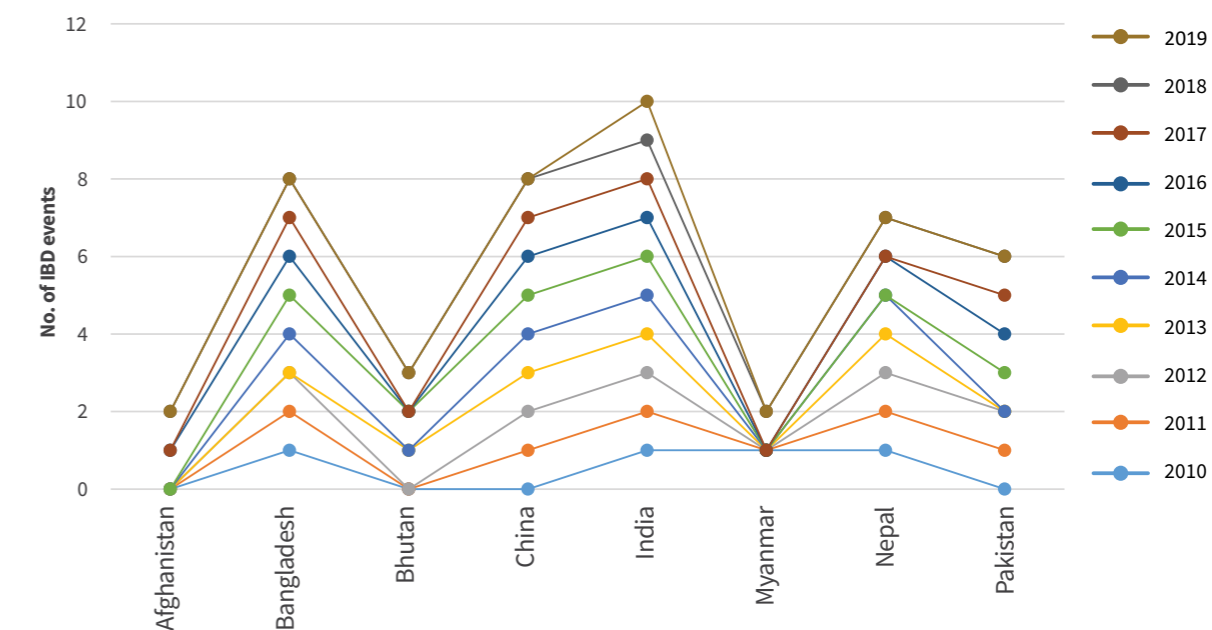
#### SUMMARY OF THE PROGRESS

Significant efforts made in the last decade to raise awareness about biodiversity in the region. However, the **target has only been partially achieved.**



The region is progressing well towards Aichi Target 1. Countries have made notable efforts in raising awareness among the different stakeholders, especially local authorities, general public, youth, and schoolchildren. Actions to raise awareness include trainings for the capacity building of different target groups, workshops, and education programmes in schools. Particular emphasis has been laid on the integration of environmental education into the school curriculum. For instance, Afghanistan and Myanmar have mainstreamed environmental education in the curriculum of both primary and secondary schools. The HKH countries have also used media – television, movies, social media, and radio – to raise awareness among the general public and have reported on the effect of such programmes among the populations. Bhutan, for example, reported that about 80 per cent of its population have displayed a sense of responsibility towards biodiversity conservation as against its target of making 60 per cent of its population aware of the same (GNHS 2015). And, across the HKH, the number of biodiversity

**FIGURE 9** TRENDS IN THE CELEBRATION OF INTERNATIONAL DAY FOR BIOLOGICAL DIVERSITY (IBD) ACROSS THE EIGHT HINDU KUSH HIMALAYA COUNTRIES



Source: CBD (2020)

events that have been conducted at local and national levels has shown an increase over the decade; this is especially true in the case of observing the International Biodiversity Day (IBD) each year on 22 May (see Figure 9).

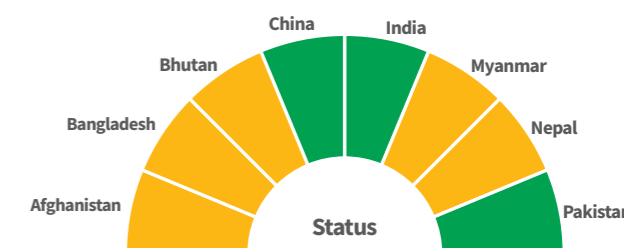
However, some countries have not yet met the target, and have reported some issues. Nepal, for instance, reported that terminologies such as “biodiversity”, “access to genetic resources”, and “benefit sharing” are too technical and thus the general public is unfamiliar with them. In the case of Bhutan, despite making good progress, it still has made only “some progress” in having an Environmental Education Master Plan in place. On another count, many of the HKH countries have even reported difficulties in evaluating the achievement of this target.

#### Aichi Target 2: Mainstreaming biodiversity

*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.*

#### SUMMARY OF THE PROGRESS

The countries have described mainstreaming biodiversity values in terms of strategies, planning, accounting, and reporting. While some progress has been made, the **target has not been achieved.**



Considerable efforts have gone towards achieving Aichi Target 2 by the region. The review of policy documents – especially legislations and guidelines on biodiversity values, as well as expert opinions – show that some progress has been made in the case of Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, and Pakistan. For instance, the values of biodiversity have been integrated into almost all the national sectoral strategies, policies, and plans of Pakistan. As for Nepal, while it has conducted a few studies on valuation, the country has not accomplished the task in a comprehensive manner, and plans to proceed ahead in the next decade.



China, India, and Pakistan have reported to be “on track”, based on a number of valuation studies and by integrating those values into policies and plans (see Box 1). The number of sectoral policies related to conservation and the sustainable use of biodiversity have also been constantly increasing in the region. Besides, studies on The Economics of Ecosystems and Biodiversity (TEEB) have been conducted in Bhutan, Nepal, and India.

**BOX 1: EXAMPLES OF NATIONAL PROGRESS IN MAINSTREAMING BIODIVERSITY**

**Bhutan:** National Payment of Environment Services Framework (PES) 2015 and PES Field Guidelines have been developed to facilitate PES implementation. Three PES sites have been established: Yakpugang Community Forest Management Group (CFMG), Pasakha, and Namey-Nichu in Paro.

**India:** 150 valuation studies of the ecosystem services provided by forests, wetlands, coastal and marine ecosystems, and their findings have been integrated into policy and decision-making through Environmental Impact Assessment (EIA) and the Environmental Monitoring Programme (EMP). Biodiversity valuation has also been integrated into the devolution criteria for forests.

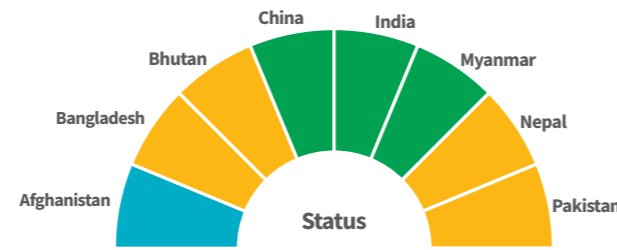
**Aichi Target 3: Reforming incentives**

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

**SUMMARY OF THE PROGRESS**

Overall, very little progress has been made over the last decade to eliminate or reform harmful incentives, and apply positive incentives for biodiversity conservation and management in the region. Some progress has been

made, with a few countries on track, while others made progress, but at an insufficient rate. Hence, the **target has not been achieved.**



The national reports showed some progress on the ecological compensation measures adopted at national and local levels. Measures on incentives for biodiversity management such as trophy hunting in Pakistan, and people’s participation in protected area management are in practice (see Box 2 for progress of other countries). Countries such as Bangladesh, Nepal, Bhutan, and Pakistan have still been reported to be insufficient. Afghanistan, as mentioned in its Sixth National Report, has been moving far away from its established national target. Challenges such as limited capacity and resources to implement policy actions as well as limited study on the impacts of incentives on biodiversity have been reported.

**BOX 2: EXAMPLES OF NATIONAL PROGRESS IN REFORMING INCENTIVES**

**Myanmar:** Forest Law has been updated to enable more incentives for conservation and there has been a large effort towards managing community forests in a sustainable manner. Three local community fishing groups have been established and others are being developed, and there is a new effort towards improving aquaculture.

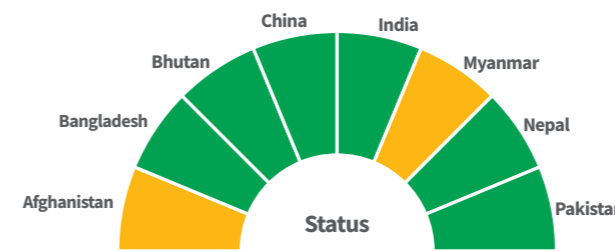
**Bhutan:** The Framework and Guidelines for Bio-fertilizer and Bio-pesticide Supply and Distribution in 2016 ensures standards for the production, import, and use of bio-fertilizers and bio-pesticides. Inclusive biodiversity policies and fiscal incentives such as the Rural Timber Subsidy Policy (draft); income tax holiday of five years to farmhouse/homestay and 10 years to agricultural enterprises; tax rebate for industries adopting environmentally sound technology (EST); sales tax exemption on waste management, mass transport, and equipment; subsidies on human-wildlife conflict mitigation technologies and on stall-fed, high-yielding cattle breeds have been instituted.

**Aichi Target 4: Sustainable consumption and production**

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 within safe ecological limits.

**SUMMARY OF THE PROGRESS**

There has been an increasing trend of developing sustainability policies and plans for production and consumption in the region. The countries are performing well in terms of developing plans but actions on the ground have either not taken place or have not been impactful. Due to the high demand the natural resources are under immens pressure. Hence, the **target has only been partially achieved.**

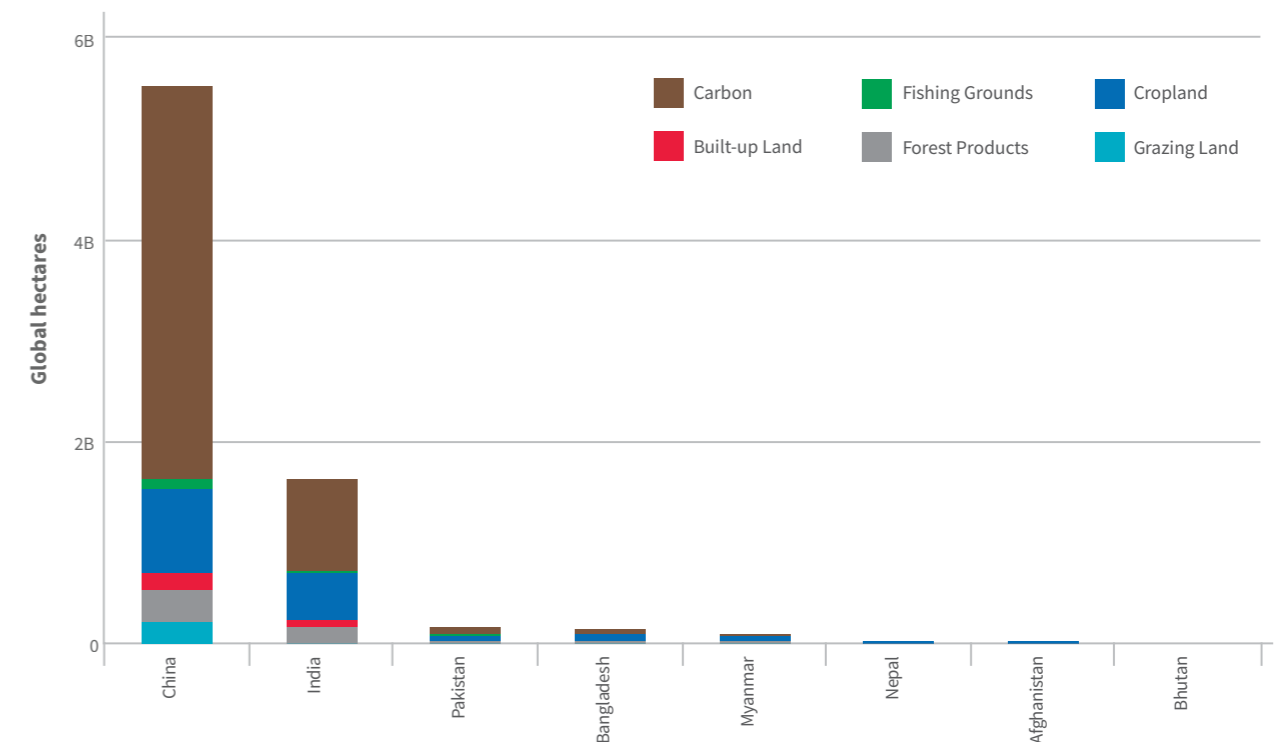


Overall, the countries reported increasing awareness and more policies and plans on the sustainability of production and consumption in the region. India and China have reported to be on track, having developed sustainability plans and taken actions on the ground. Similarly, Bhutan has emphasized on sustainable consumption and production of resources, and the recycling of plastic waste in its National Environment Policy 2018. The National Framework for Organic Farming in Bhutan (2006) has enhanced its implementation capacity vis-à-vis its organic programme and ensures standards for the production, import, and use of bio-fertilizers and bio-pesticides. Similarly, Pakistan has integrated the sustainability agenda into its national economy strategy and has promoted sustainable production and consumption.

However, the region has varying levels of ecological footprints (see Figure 10).

China, for example, has reported to have high carbon footprint, widespread urbanization, and rapid agricultural land expansion. India too shows a similar trend with its high carbon footprint and rapid urbanization. As for Myanmar, cropland expansion has been rapid in the country. In the case of Bhutan, it is regarded as a “carbon neutral” country and well ahead in terms of conservation of forests and is.

**FIGURE 10** ECOLOGICAL FOOTPRINT OF THE EIGHT COUNTRIES OF THE REGION (GLOBAL HECTARES PER PERSON)



Source: Global Footprint Network (2022)

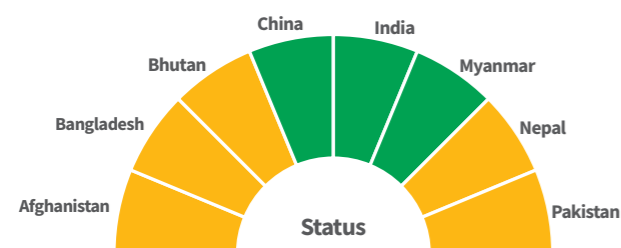


### Aichi Target 5: Habitat loss to be halved and reduced

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.

#### SUMMARY OF THE PROGRESS

The rate of deforestation has significantly reduced with the increase in forest cover in some countries of the region. However, the rate of degradation of ecosystems, fragmentation, and the loss of habitats of key species remain high. Hence, the **target has not been achieved**.



The HKH countries have reported their progress towards Target 5 by highlighting their efforts at increasing forest cover, enhancing carbon stocks, and improving forest cover through afforestation and reforestation programmes based on strategies like co-management and assisted natural regeneration. The countries also report that they have reduced substantial degradation of habitats in the last decade by according priority to conservation through zoning.

Bhutan, China, and India reported an increase in their forest cover over the last decade by 0.8 per cent, 9 per cent, and 4 per cent respectively, while Afghanistan and Nepal reported no change in its forest cover during the same period (see Table 4). Afghanistan reported that it did not suffer any substantial degradation of habitats within the designated ecoregions of the country. As for Pakistan, it has been able to develop national standards for REDD+ under the Forest Carbon Partnership Facility.

However, some countries need to put in more effort to progress towards this target as the rate of degradation has not decreased. For instance, the forest cover of Bangladesh, Myanmar, and Pakistan have decreased over the last decade (Table 4).

**TABLE 4** FOREST COVER CHANGE OVER THE LAST DECADE (2010–2020) ACROSS THE HKH COUNTRIES

Country	2010	2020	Change
Afghanistan	1208.44	1208.44	0
Bangladesh	1888.34	1883.4	-4.94
Bhutan	2705.29	2725.08	19.79
China	200610.4	219978.2	19367.8
India	69496	72160	2664
Myanmar	31441	28543.89	-2897.11
Nepal	5962.03	5962.03	0
Pakistan	4093.73	3725.9	-367.83
<b>Total</b>	<b>317405.2</b>	<b>336186.9</b>	<b>18781.71</b>

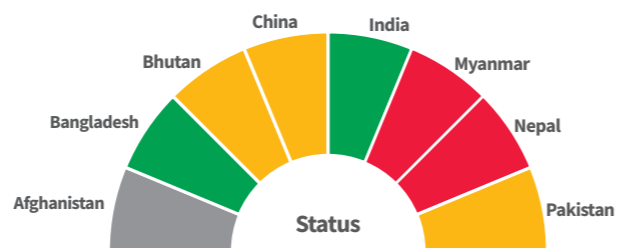
Source: FAO (2020)

### Aichi 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 [by] 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.

#### SUMMARY OF THE PROGRESS

This is one of the targets where the least progress has been made in the region; this has to do with unsustainable practices in fisheries, and degrading habitats. The **target has not been achieved**.



Bangladesh and India report to be on track as they have established aquatic sanctuaries and fish nurseries, as well as developed policy and legislative frameworks at the national scale. For instance, a total of 426 fish sanctuaries in different selective waterbodies have been established in Bangladesh.

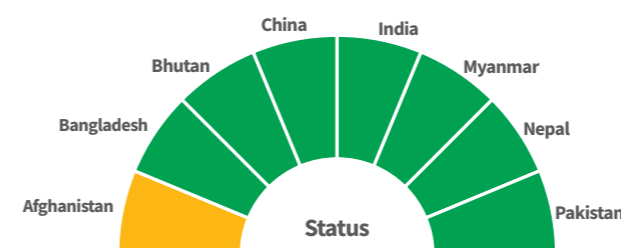
Myanmar and Nepal reported “no significant change” due to their limited progress on enforcement of policies, especially those related to restriction on fishing in major river systems and lakes; there have also been no efforts at controlling the invasive fish species. While Bhutan, China, and Pakistan reported some progress, it is clear that more needs to be done in terms of implementation of policies, management plans, and initiatives for sustainable fisheries management in the HKH countries.

### Aichi Target 7: Sustainable agriculture, aquaculture, and forestry

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

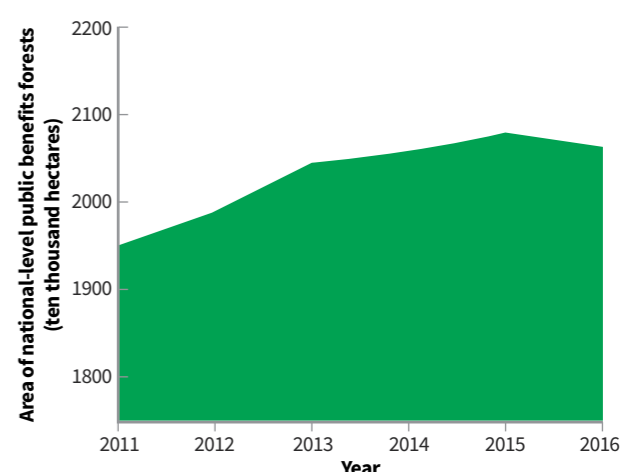
#### SUMMARY OF THE PROGRESS

The second-best rate of progress in the region has been in meeting Target 7. Seven countries have reported that they are “on track” and that considerable progress has been made. Yet, the **target has only been partially achieved**.



While Afghanistan reported insufficient progress because of the limited data and monitoring systems in the country, the other countries reported significant actions at the policy and practice levels towards the target. At the policy level, Bangladesh has developed national policies on land use, forestry, fisheries, and agriculture, emphasizing on sustainable production and consumption. Bhutan formalized its National Action Programme to Combat Land Degradation, 2014, and the Agriculture Land Development Guidelines, 2017; it has also a national programme on organic agriculture. As for China, it increased its forest cover by 1.12 million hectares in five years (2011–2016) (see Figure 11).

**FIGURE 11** AREA OF NATIONAL-LEVEL PUBLIC BENEFITS FROM FORESTS.



Source: CBD (2020)

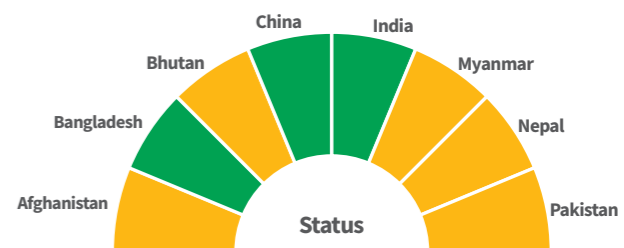
Similarly, India has four National Missions to implement various sustainable practices by adopting measures for agriculture, forestry, and fisheries. For instance, the state of Sikkim has been declared as an “organic state” in order to promote local and organic farming (Kumar et al., 2018; Meek et al., 2020). Nepal has also been progressing well towards sustainable forestry through its community forestry and scientific forest management systems. As for Pakistan, a green revolution is taking place as the government is in the first phase of planting 10 billion trees; the estimated cost of this exercise is around USD 650 million (MoCC, 2021). (See Box 3).

### Aichi Target 8: Reducing pollution

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

#### SUMMARY OF THE PROGRESS

Pollution is one of the major problems in the region as it contributes to habitat degradation and biodiversity loss. Though major efforts have taken place, especially at the policy level, pollution continues to be a serious issue. Hence, the **target has not been achieved**.





### BOX 3: PAKISTAN'S BILLION TREE TSUNAMI

The Billion Tree Tsunami was launched in 2014 by the Government of Khyber Pakhtunkhwa as a response to the challenge of global warming and to improve the ecosystems of classified forests; this is being carried out in close collaboration with the communities and stakeholders concerned to ensure their meaningful participation and by effectuating project promotion and extension services. The Billion Tree Tsunami Afforestation Project thus has made a huge contribution towards carbon sequestration, leading to a check on global warming and rapid climate change; it has also enhanced forest conservation and development along with the preservation of other natural resources. Buoyed by the success of the Billion Tree Tsunami project, a programme called Green Pakistan was launched in 2016 to facilitate Pakistan's transition towards becoming an environmentally resilient country. The programme, backed by an enabling policy environment, attempts to mainstream notions of adaptation and mitigation through ecologically targeted initiatives which cover afforestation and biodiversity conservation.

[https://few.kp.gov.pk/page/about\\_billion\\_tree\\_tsunami\\_afforestation\\_project](https://few.kp.gov.pk/page/about_billion_tree_tsunami_afforestation_project)

### BOX 4: EXAMPLES OF ACTION TO CONTROL POLLUTION

**Bangladesh:** About 77.5 per cent of the eligible industries have installed effluent treatment plants. From 2014 to June 2018, zero-discharge plans for 368 liquid-discharging industrial plants were approved. A total of 15 industries have already adopted the zero-discharge plan. Besides, a GIS-based monitoring system is in operation to monitor the pollution load in rivers.

**India:** It has initiated projects on integrated pest management and integrated nutrient management. It has also been promoting bio-fertilizers and soil-health assessment-based production.

**Myanmar:** A national programme has been initiated with floating vegetation farmers to reduce the use of chemicals in freshwater ecosystems and to produce organic vegetables.

The HKH countries have taken different actions to reduce pollution and its impacts on ecosystems. The establishment of effluent treatment plants and waste compost plants has been made mandatory for liquid waste-generating industries in a few countries of the region (see Box 4). Establishment of standard operation procedures, and regulations on import, sale and use of pesticides for agriculture have been progressive. In the case of Nepal, a National Pollution Control Strategy and Action Plan and a River Ecosystem Management Plan have been prepared to protect the country's ecosystems.

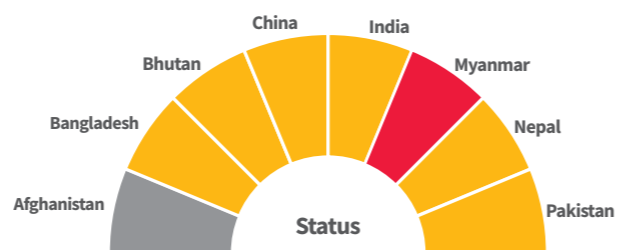
Yet, pollution continues to be a grave issue for the region. Many of the countries have not been able to take effective measures against water pollution, especially in river systems which are subjected to direct discharge of waste; the same holds true in the case of controlling air and plastic pollution which have wreaked havoc on the region's ecosystems and its biodiversity.

### Aichi Target 9: Controlling and reducing the number of invasive alien species

*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.*

#### SUMMARY OF THE PROGRESS

Target 9 has recorded the least progress in the region. Though some measures have been taken, no concrete actions at the policy and implementation levels with visible impacts have been reported. Hence, the **target has not been achieved.**



Invasive alien species is regarded as an important threat by the HKH countries. Yet, measures to control them have been few and far between. For instance, while Afghanistan has declared that it plans to develop and implement mechanisms to control these species, it has not taken any effective action so far. In the case of Bangladesh, Bhutan, China, and Nepal, they have been involved in data collection, formulation of policies and guidelines, and in controlling the entry of these species at international ports. For instance, the strategies to control these species are ready for endorsement in Nepal, while China has identified 311 such species since 1950 (see Figure 12). As regards India, it is "on track" with local actions in specific areas, but lacks a comprehensive approach on a larger scale. Meanwhile, Myanmar has reported "no significant change", but has identified

a few species and also established a plant quarantine facility at its international airports. Likewise, Pakistan has developed a new information system on invasive species, but has taken no other significant action.

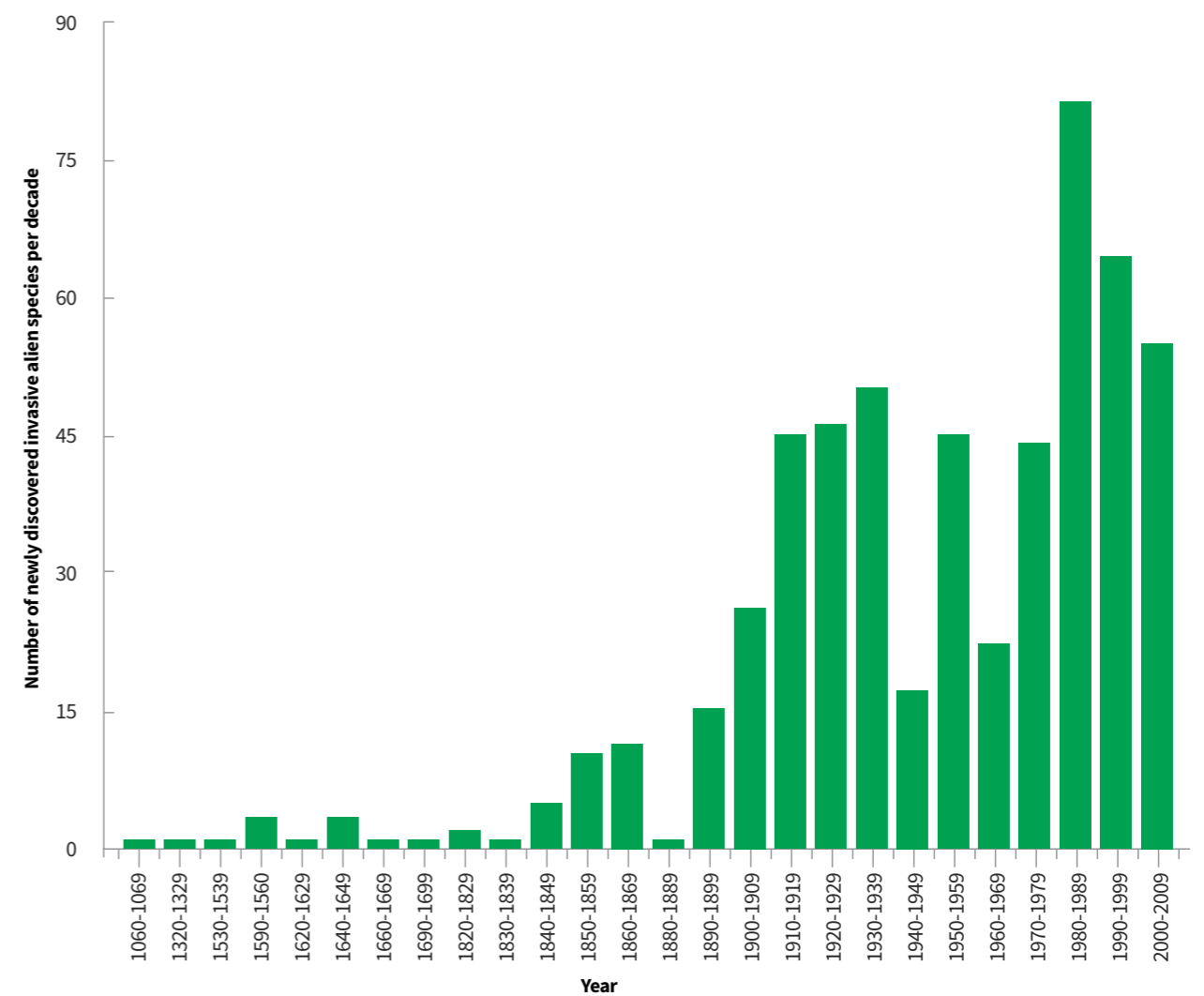
### Aichi Target 10: Reducing pressure on vulnerable ecosystems

*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.*

#### SUMMARY OF THE PROGRESS

Efforts made to ward off the impacts of climate change and other drivers of adverse change, and to conserve the fragile and vulnerable mountain ecosystems of the HKH.

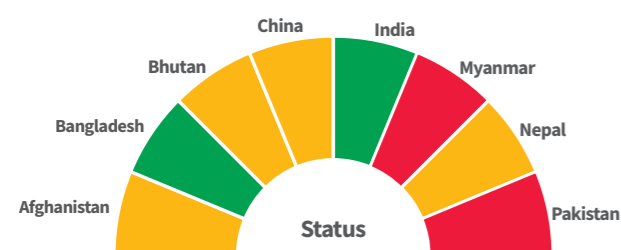
FIGURE 12 IDENTIFICATION OF INVASIVE ALIEN SPECIES



Source: CBD (2020)



However, the region has lagged behind in achieving Target 10. While Myanmar and Pakistan report “no significant change”, in the case of Afghanistan, Bhutan, Bangladesh, China, and Nepal, more action is required in this area. Hence, the **target has not been achieved**.



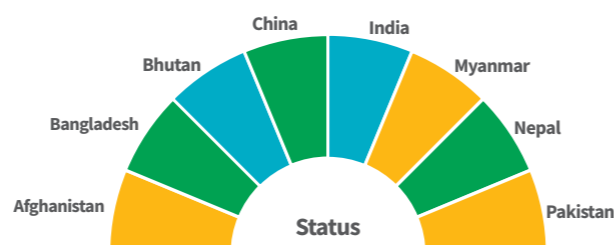
The HKH, as one of the important biomes of the world, is highly vulnerable to different threats and drivers of change, including climate change (Wester et al., 2019). This target focuses on climate change and its impacts on vulnerable and fragile ecosystems. The actions taken by the HKH countries in meeting this target have revolved around identification of pressures on vulnerable ecosystems, glacier melting, and policy actions on adapting to climate change. Prioritized climate change adaptation and mitigation strategies have included policy actions like India’s National Action Plan on Climate Change (NAPCC). Efforts have also been underway to restore degraded lands, develop tools to assess and monitor changes, and conserve vulnerable ecosystems. For instance, while Bangladesh has attempted to conserve the Sundarbans ecosystem, Nepal has adopted Ecosystem-based Adaptation (EbA) approach to conserve its mountain ecosystem. In the case of Bhutan, it has reported climate change as a major threat and has demanded proactive interventions in the areas of mitigation and adaptation.

#### Aichi Target 11: Increasing and improving protected areas

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

#### SUMMARY OF THE PROGRESS

In terms of Target 11, the region has shown good progress, with notable efforts being made to achieve it. Some countries have even exceeded their set targets. However, as a whole region, the actions are insufficient and hence the **target has only been partially achieved**.



The commitment to Target 11 by the HKH countries has included creating and/or expanding PA coverage, especially areas of particular importance for biodiversity, improving ecological representativeness, and establishing well-connected systems. Bhutan and Nepal have already exceeded the global target of 17 per cent coverage with 51.44 per cent and 23.39 per cent respectively of their land coming under the PA system. Besides, 10 of Nepal’s forests have been declared as protected, while nine more are in the process of being the same (GoN, 2017). However, Nepal has not been able to meet its national target of 25 per cent PA coverage by 2020. In the case of Bhutan, it used METT+ (Management Effectiveness Tracking Tool) for reasuring management effectiveness of PAs. As for India, it has committed to having 20 per cent of its geographical area as PAs, including marine and coastal ecosystems. It has also put in efforts on OECMs to progress towards the target; with the inclusion of OECMs such as community conserved areas, sacred groves, biosphere reserves, and notified eco-sensitive zones, about 27 per cent of the country’s geographical area would become conservation areas with 10 biogeographic zones.

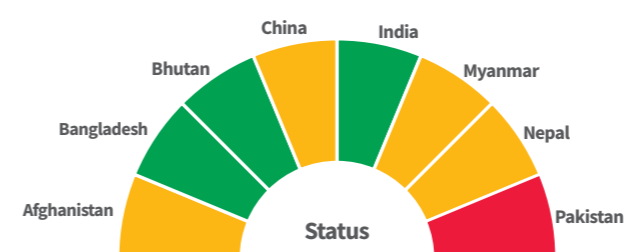
All said, while the countries have been progressing well in PA coverage, the other elements of the target such as management effectiveness, well-connected systems, and ecological representation have not been properly considered. Thus, the region needs specific attention from its countries to achieve positive conservation outcomes.

#### Aichi 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.*

#### SUMMARY OF THE PROGRESS

The HKH countries have made efforts at documentation of IUCN RED List species, monitoring their status, and preparing management plans. The countries have also worked towards building capacity for assessment and conservation. However, these efforts have not really paid off as some species are now under threat more than ever. Hence, the **target has not been achieved**.



The common actions to progress towards Target 12 have included the documentation and monitoring of the status of the threatened species – as per the IUCN Red List and CITES – so as to take actions for their protection and conservation. For instance, Myanmar has set up a task force for evaluating the species, for capacity building, and for preparing species management plans. Similarly, Nepal has made good progress in the documentation of faunal species; it has also put in place management plans, and on the pipeline is a proposal to establish zoological gardens in the country. As regards India, it has taken action to restore 156 threatened plant species. In the case of Bhutan, it has updated the Red List and prioritized species-based conservation programmes.

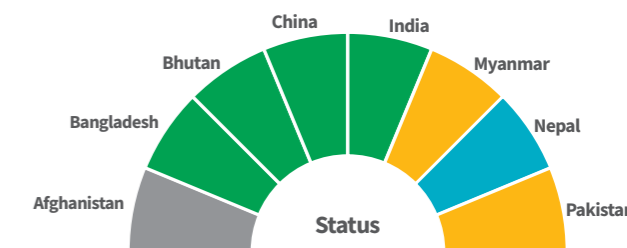
Despite these efforts, the status of critically threatened species in the region is worrisome. About 80 per cent of the species are under more threat than ever, while 19 per cent of them come under the “unknown” label (see Figure 13). Even more worrying is the fact that some species have become extinct in the region. Thus, all indicators point to the need for more efforts from the HKH countries to prepare a priority list of threatened species and execute actions to improve their status.

#### Aichi Target 13: Maintaining 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.*

#### SUMMARY OF THE PROGRESS

There has been continuous erosion in the genetic diversity of cultivated plants, domesticated animals, and their wild relatives in the region. However, to achieve Target 13, the countries made fair progress by working on capacity building, establishing in-situ and ex-situ conservation facilities, and by carrying out research. Yet, the **target has only been partially achieved**.

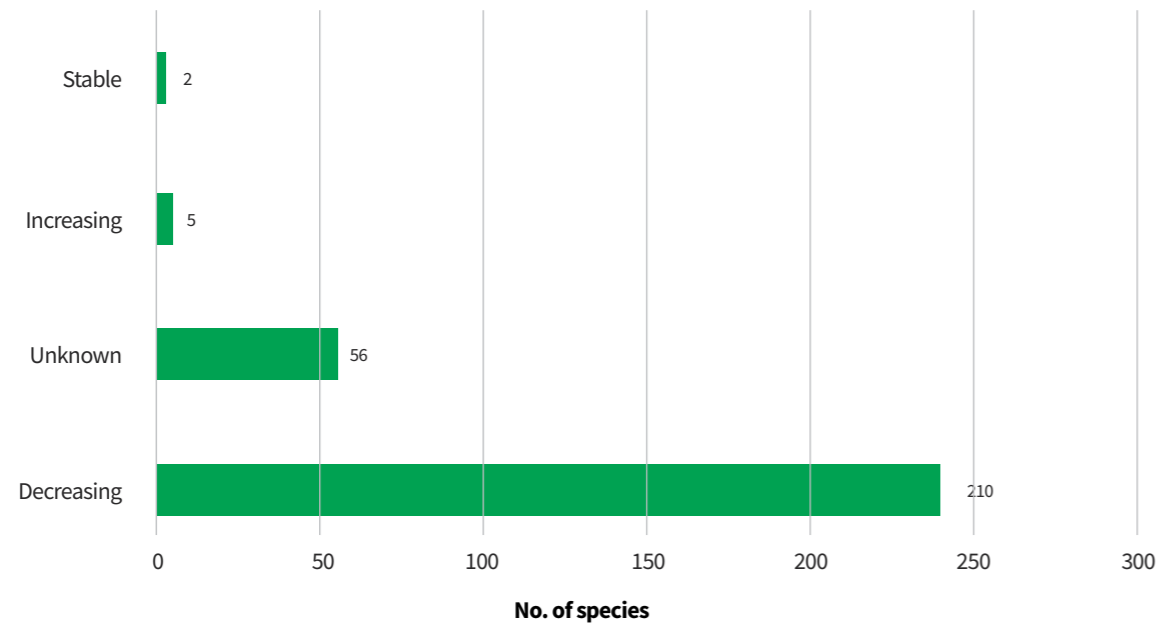


The national actions towards achieving Target 13 have included establishment of gene banks, capacity development in the documentation and management of agrobiodiversity, planning of incentive-based programmes, and formulating conservation strategies (see Box 4). In this regard, in a demonstration of regional cooperative practice, the Government of Bhutan, with support from ICIMOD’s KLCDI, donated two yak bulls to Nepal and India for the maintenance of genetic diversity (ICIMOD, 2021a).

However, the overall picture is not very healthy. Many local and wild varieties are at risk and no concrete actions have been taken to document and conserve the diversity. For instance, Afghanistan, Bangladesh, Myanmar, and Pakistan do not have data on the status of breeds at risk (see Figure 14). A 2002–2019 analysis shows China and India having 11 per cent and 10 per cent, respectively, of local breeds at risk of extinction, while Bhutan has 52 per cent of its local breeds at risk (FAO, 2019). One of the key gaps in meeting this target has been lack of in-depth information on genetic diversity.

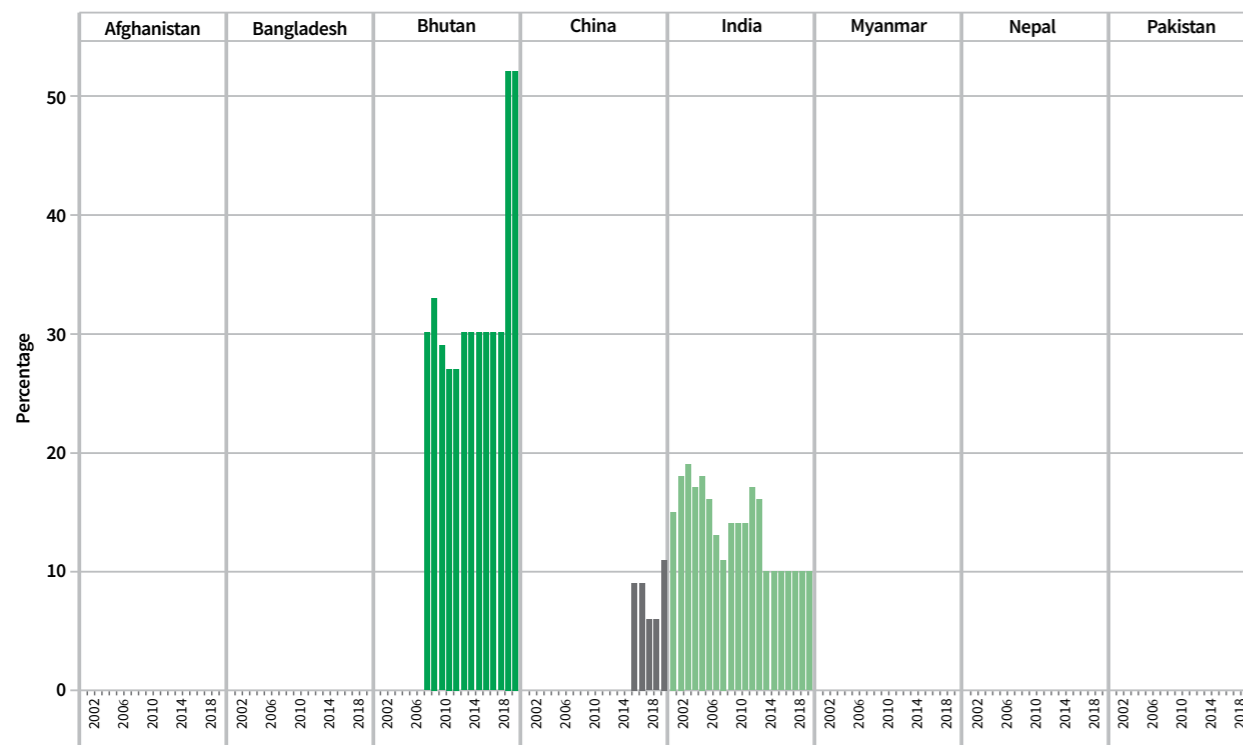


**FIGURE 13** STATUS OF THE CRITICALLY ENDANGERED SPECIES IN THE HINDU KUSH HIMALAYA COUNTRIES



Source: IUCN (2021)

**FIGURE 14** LOCAL BREEDS AT RISK (2002–2019) IN THE HKH COUNTRIES



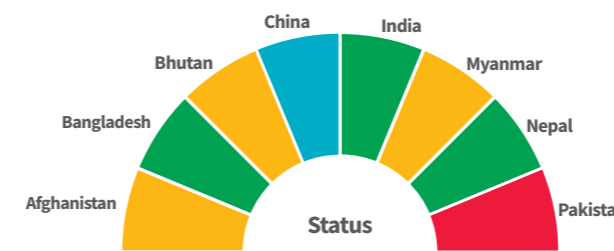
Source: FAO (2021)

**Aichi Target 14: Safeguarding ecosystems and essential 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.

**SUMMARY OF THE PROGRESS**

The HKH countries have made efforts to assess ecosystems, its services, and have taken actions to manage ecosystems with a particular focus on the degraded ones. However, more needs to be done to halt the degradation of ecosystems and sustainably manage its services. Hence, **the target has not been achieved.**



The common actions towards this target have included identifying the status, drivers, and the services provided by the ecosystems and taking steps to conserve the ecosystems and their services. Bangladesh has focused on the restoration of degraded wetlands, small rivers, and canals in order to improve the livelihoods of its people. In the case of Bhutan, it has done well in protecting forest ecosystems and their services; the country has reported “limited progress” and has sought comprehensive assessment and information on other ecosystems, including the agroecosystem and freshwater ecosystems. China has exceeded the target by doing considerable work on improving the health of its ecosystems. India, on its part, is “on track” and has identified the various pressures on its ecosystems; it has also developed strategies to control those pressures so as to improve essential services for its people; besides, it has paid specific attention to its aquatic, agricultural, forest, riverine, and land ecosystems. Nepal too is “on track” on Target 14; it has identified 64 critical river systems and has implemented community-based soil and water conservation initiatives to improve the services from these ecosystems. In the case of Myanmar, it has

placed particular emphasis on river ecosystems, their restoration, and management.

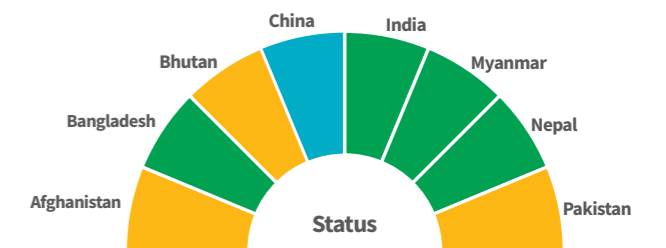
However, more needs to be done to better conserve and maintain the flow of essential services. Many ecosystems in the region are in a degraded state and need concentrated efforts in sustainable management. In the area of challenges and issues cited in the reports on the progress made in meeting Target 14 by the HKH countries, Afghanistan reported the absence of data and an effective monitoring system; Pakistan reported “no significant change” and pointed to inadequate analysis at the national level; while Myanmar drew attention to its limited capacity to assess the values provided by the different ecosystems of the country.

**Aichi Target 15: Restoring and enhancing the resilience of ecosystems**

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 combatting desertification.

**SUMMARY OF THE PROGRESS**

The region has done well in its actions towards achieving the target of restoring 15 per cent of degraded ecosystems. Half of the countries have reported to be on track, while one country has even exceeded the target. So, given the overall progress, it could be said that the **target has been partially achieved.**



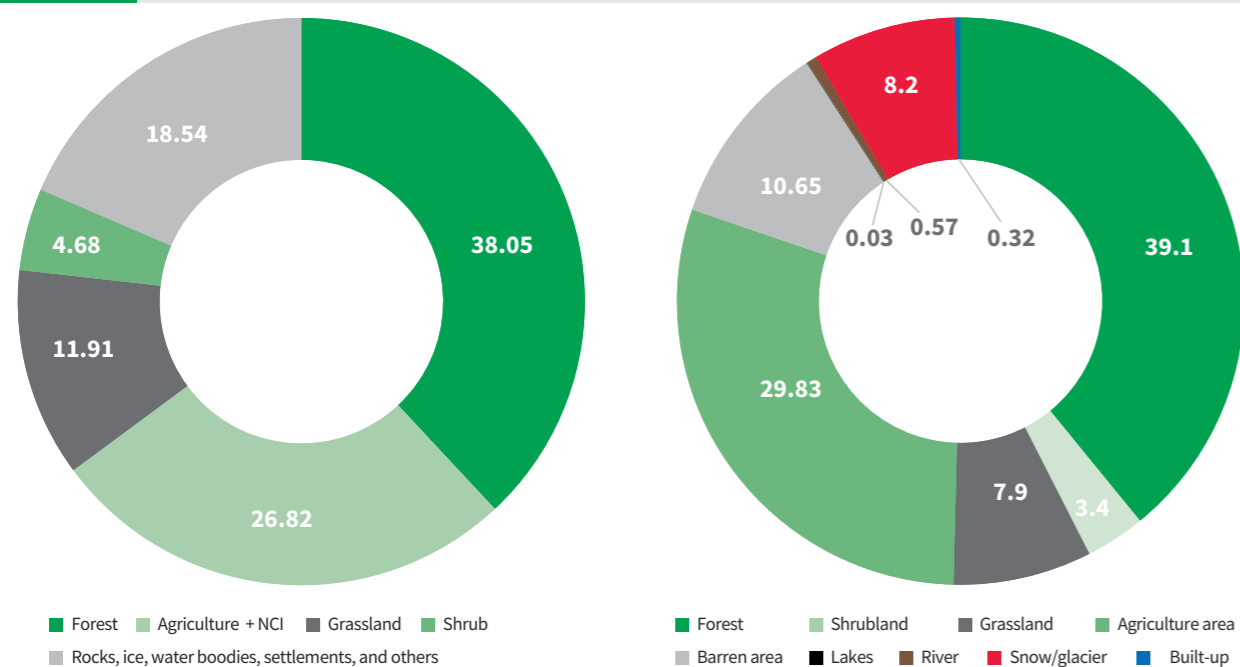
Land degradation in the Asia-Pacific region is one of the leading drivers of biodiversity loss (IPBES, 2019). The common actions to achieve Target 15 has included restoration of habitats, formulation of policies and guidelines, and management of critical ecosystems. In this regard, fish sanctuaries have been created to conserve the swamp forests in Bangladesh; for instance, 162 hectares of mangrove forest was



recreated beside the Bakkhali River. In Bhutan's case, the National Action Plan for Land Degradation was approved in 2014, and several plantations across the countries were done, including the setting up of the Green Bhutan Corporation. Bhutan has called for more efforts in meeting its national targets which include the baseline for classification of degraded ecosystems and habitats, and scaling up restoration activities.

As regards Myanmar, it has put in considerable work to be "on track" on this target; for instance, about 130,000 hectares of forests in the country are now managed under the community forestry system. In Nepal, a National REDD Strategy has been approved and restoration programmes are underway in Terai and Chure districts. Over a last decade (1986-2015), forest cover increased by 1.05% in Nepal (see Figure 15).

**FIGURE 15** CHANGE IN LAND COVERS FROM 1986–2015



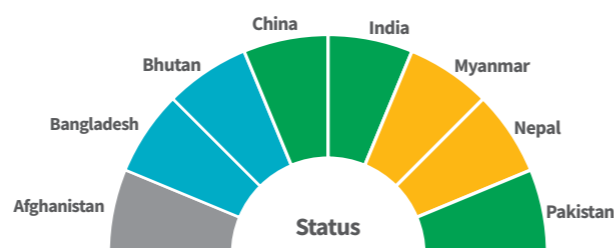
Source: GoN (2019)

**Aichi Target 16: Making the Nagoya Protocol 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.

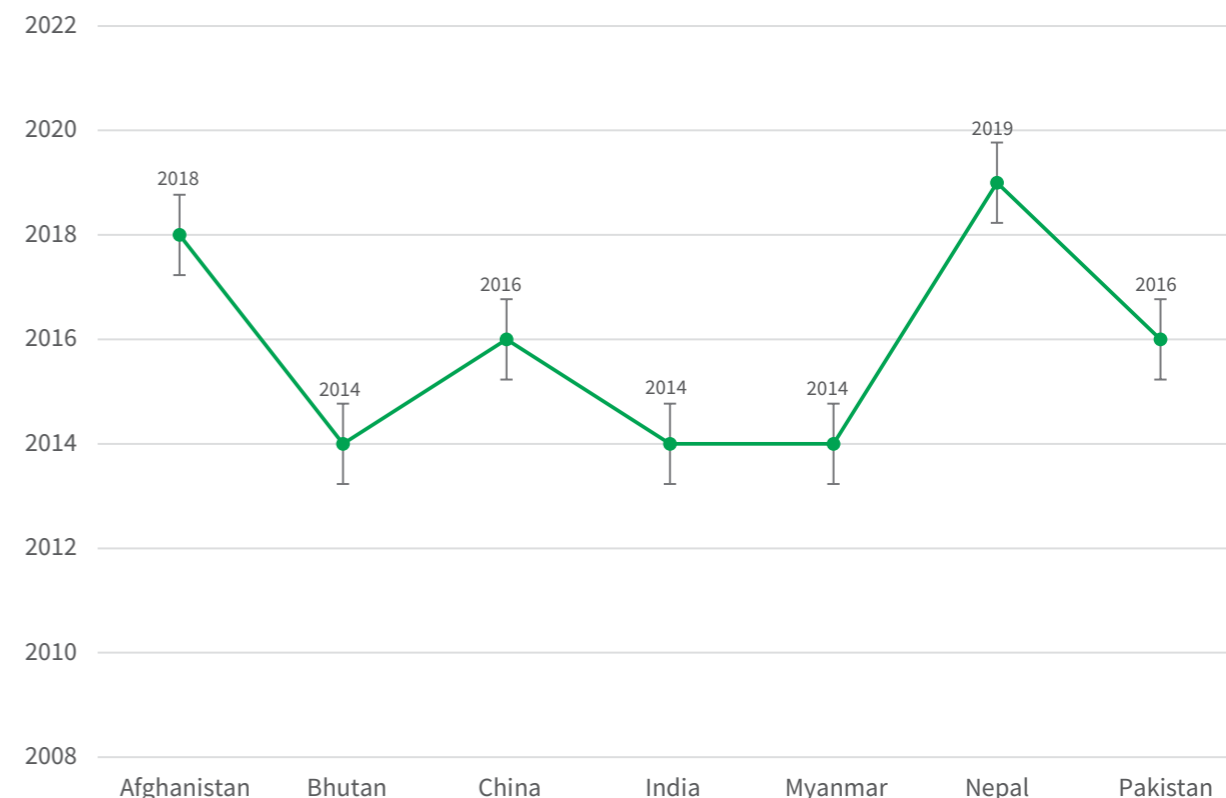
**SUMMARY OF THE PROGRESS**

A fair and equitable sharing of the benefits arising out of the utilization of genetic resources is one of the three objectives of the CBD. The countries of the region have made some progress on this target and except for Bangladesh, the other seven countries have ratified the Nagoya Protocol. It could be said that the **target has been partially achieved**.



The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization entered into force on 12 October 2014. Bhutan, China, and India were the first countries from the region to be a party to the Protocol (see Figure 16). Bhutan has also adopted an ABS national policy, and a Biodiversity Bill to implement the ABS policy has been drafted. China, India, and Pakistan are also "on track" vis-à-vis the

**FIGURE 16** NAGOYA PROTOCOL RATIFICATION IN THE HKH COUNTRIES



Source: National Reports submitted to SCBD

target. India has formulated "Guidelines on Access to Biological Resources and Associated Knowledge and Benefit Sharing Regulations 2014" for implementing the Protocol in the country. A draft ABS Bill has been developed in Pakistan and its enactment. In the case of Nepal and Myanmar, while some progress has been made, more actions are required to achieve the target. Nepal approved the Protocol in 2018, while an ABS Bill is awaiting endorsement. Similarly, Myanmar has initiated ABS-related projects to build capacity in the ABS mechanisms and has developed a National ABS Framework for implementation.

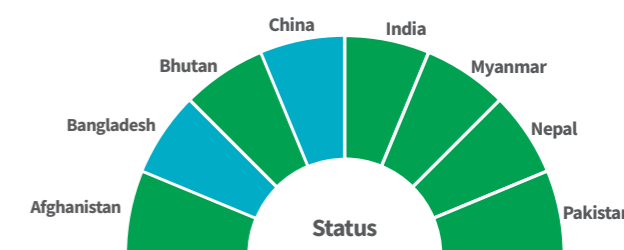
**Aichi Target 17: Adopting NBSAPs as policy instruments**

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.

**SUMMARY OF THE PROGRESS**

This is the target on which the most progress has been recorded in the region. While two countries have

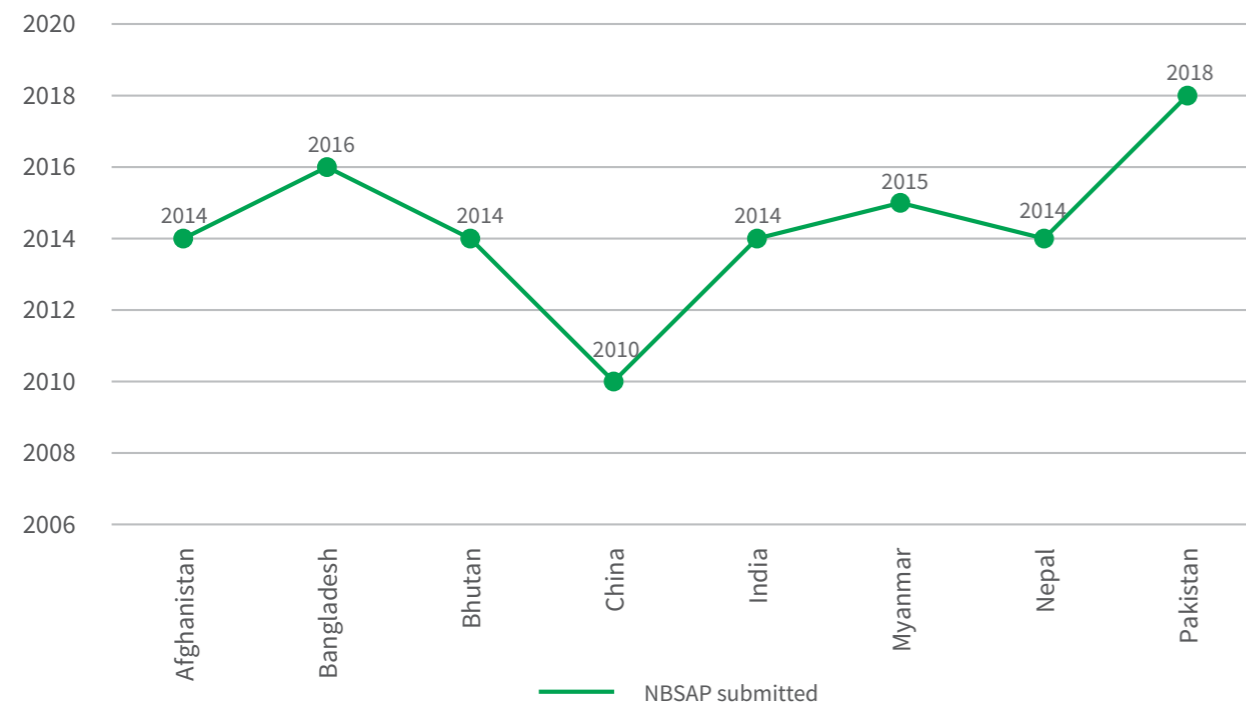
exceeded their national targets, the other six are "on track". All the countries prepared their NBSAPs and used as an effective policy instrument. However, the way in which the NBSAPs have been implemented has varied in terms of its effectiveness and its participatory nature. Hence, this **target has been achieved**.



The deadline to submit NBSAP was December End 2015. All the countries of the region, except Bangladesh and Pakistan, developed and submitted their NBSAPs by the set deadline (See Figure 17). China was the first to submit its NBSAP in 2010, followed by Afghanistan, Bhutan, India, and Nepal in 2014. Bangladesh and Pakistan were late and submitted in 2016 and 2018 respectively. While preparing their NBSAPs, the countries put in rigorous efforts in setting up the national targets and the



**FIGURE 17** THE NBSAPS DEVELOPED BY THE COUNTRIES AFTER THE ADOPTION OF THE STRATEGIC PLAN FOR BIODIVERSITY IN 2010



Source: CBD (2021)

indicators for each target. The NBSAP has been used as a guiding and effective policy instrument for achieving the CBD objectives. However, the implementation mechanism and the degree of participation of the stakeholders from each country are varied (see Box 5).

**BOX 5: EXAMPLES OF NATIONAL IMPLEMENTATION MECHANISMS**

**Bhutan:** A national Committee on Biodiversity with representation from all the relevant stakeholders has been established to provide a forum for discussion and coordination on matters related to biodiversity, and to make decisions and recommendations for adoption by the relevant implementing agencies.

**India:** Each state has prepared its own Strategy and Biodiversity Action Plan (SBAP) after consultations with the relevant stakeholders

**Nepal:** A mid-term monitoring and evaluation committee for NBSAP implementation was set up, which evaluated progress in 2018

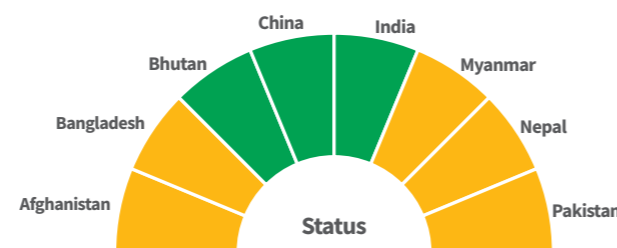
**Myanmar:** A National NBSAP Committee (NBCC) was formed with members from the relevant departments to ensure that the implementation mechanism functioned well

**Aichi Target 18: Respecting traditional knowledge**

*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.*

**SUMMARY OF THE PROGRESS**

In the region, the customary use, rights, and practices involving traditional knowledge have been recognized in policies at the national scale. However, the implementation of the same and the effective participation of indigenous and local communities have left much to be desired. Therefore, the **target has not been achieved.**



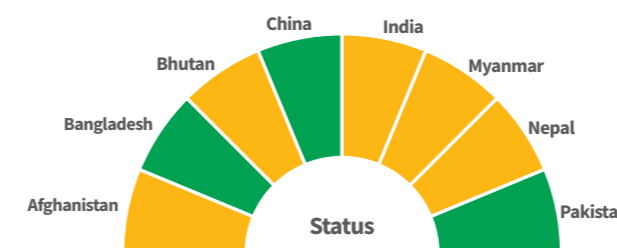
The common actions of the countries towards meeting the target have included documentation, taking consent, and forming policies to conserve and respect traditional knowledge. In this regard, Afghanistan has established legal and policy frameworks for protecting traditional knowledge and practices in natural resources management. Similarly, China came up with a legislation called Chinese Medicine Law which came into effect in 2017; this law protects the intellectual property rights concerning traditional Chinese medicine and ensures that the practitioners of traditional medicine enjoy rights and benefits (Wang et al 2021). As for Nepal, it has drafted amendments to the Plant Variety Protection and Farmers' Right Bill 2008 and to the intellectual property rights legislation. Bhutan has focused on developing capacities and protecting traditional knowledge and practices in the area of biodiversity; for instance, it has installed a national database which has a list of 716 such practitioners (529 males and 171 females). Similarly, Bangladesh has established what is known as Village Common Forest through the Chittagong Hill Tracts Development Facility to protect and promote local knowledge and practices (See Box 6).

**Aichi 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.*

**SUMMARY OF THE PROGRESS**

Notable efforts have been made by the HKH countries in progressing towards this target. They have been able to generate, manage, and share information on ecosystems and its species. However, the use of this information has varied across countries. So, while there has been progress, the **target has only been partially achieved.**



**BOX 6: EXAMPLES OF NATIONAL PROGRESS IN THE MAINTENANCE OF GENETIC DIVERSITY**

**Bangladesh:** A total of 516 tea germplasm samples have been collected and maintained ex situ.

**Bhutan:** A total of 37 on-farm conservation sites have been established across the country to promote the conservation and use of traditional crop varieties. This has helped build local capacities in Plant Varietal Selection (PVS), improved crops, added value, and enhanced the capacity of farming communities.

**Nepal:** Of the 30,000 existing estimated accessions, the National Gene Bank has a collection of 11,389 accessions. Annually, about 1,000 accessions are collected; community-based conservation of genetic diversity too has taken shape.

The HKH countries, in their national reports, have mentioned the use of modern systems to generate and assess information on ecosystems and species. All the countries have primarily focused on the documentation and recording of species, with special attention being paid to preparing a detailed checklist of the flora, fauna, and varied ecosystems. For this, they have used modern tools and technologies such as the GIS and RS. The countries have also promoted science-based technologies for analysis of land cover and changes in species. More importantly, the countries have made advancement in contributing to and sharing each other's data sets. For instance, all the eight countries have been active in contributing data to the Global Biodiversity Information Facility (GBIF); thus, a total of 2,640,2193 species occurrence and 8,132 data sets from eight countries have been reported (Figure 18). ICIMOD also facilitates the eight countries in generating and sharing information through its Regional Database System (RDS) (ICIMOD, 2021b).

However, for the countries to meet Aichi Target 19 in full, more work is required in the areas of data recording, analysis, management, and the updating system. Capacity building is another crucial area that has a bearing on achieving the target.

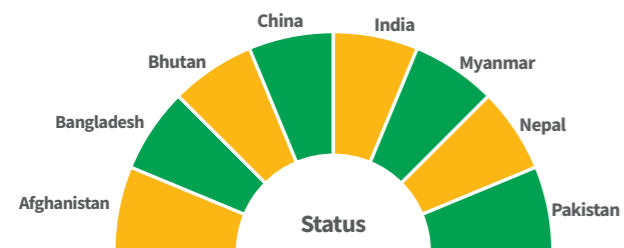


**Aichi Target 20: Mobilizing resources from all sources**

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011–2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resources Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments [and is] to be developed and reported by the Parties.

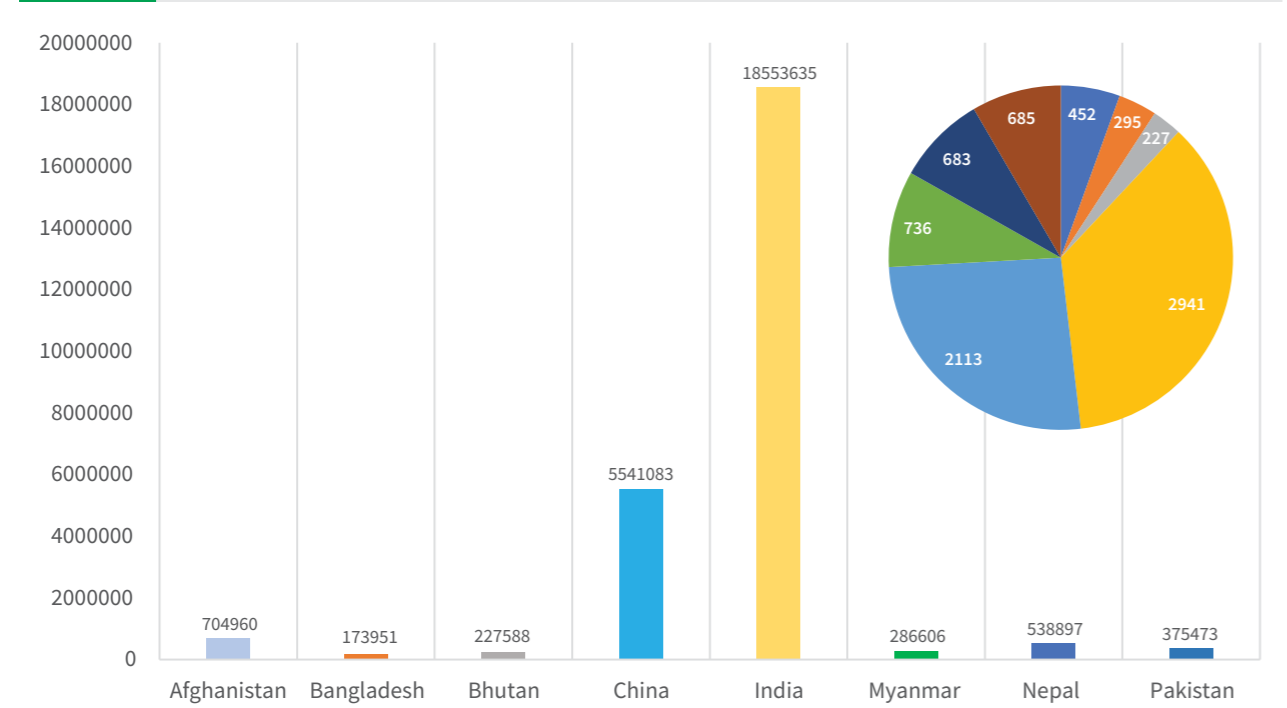
**SUMMARY OF THE PROGRESS**

There has been an increase in financial resources for biodiversity conservation in the HKH. The countries have in place national funding allocation for conservation, and international funding schemes have doubled over the decade. In this area, half of the countries are “on track”, while the rest need to put in more efforts. Hence, the **target has only been partially achieved.**

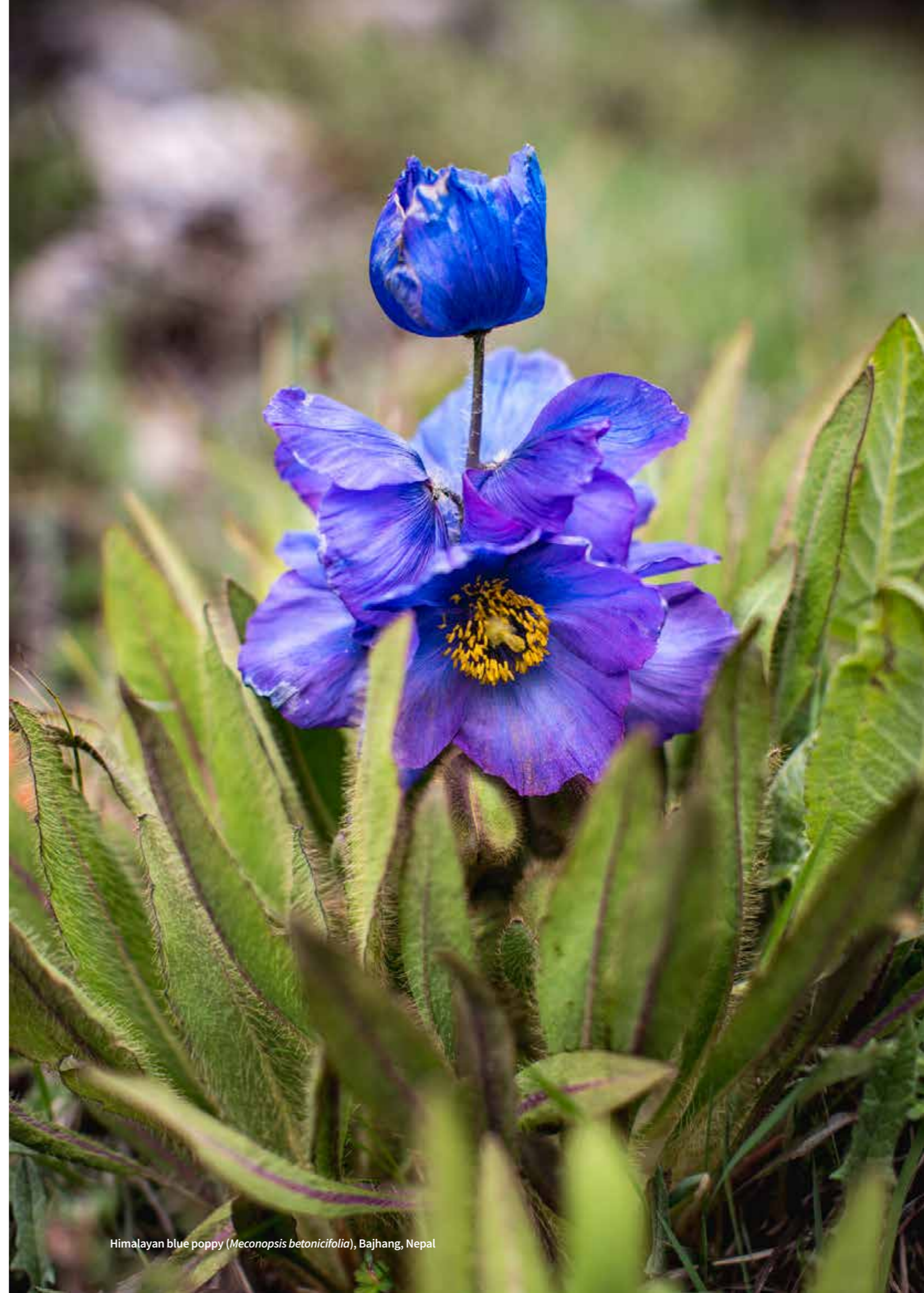


The international flow of financial resources to protect the biodiversity in the region showed an increase in the last decade (CBD, 2020). All the eight countries have reported utilizing the financial resources of the Global Environmental Facility (GEF) for the implementation of NBSAPs. Bhutan, India, and Nepal have reported utilizing the Biodiversity Finance Initiative (BIOFIN) to achieve biodiversity goals. Thus India, for instance, has 116 biodiversity-relevant schemes. Myanmar has also reported accessing substantial resources for biodiversity which has meant that the budget allocated for it has climbed by 65 per cent since the fiscal year 2014–15. In the case of Nepal, it has been progressive in the payments for ecosystem services (PES) and REDD+. Similarly, Bhutan has established the Bhutan for Life (BFL) scheme with USD 43 million allocated for PAs and biodiversity. However, no remarkable progress has been made towards national funding for biodiversity. More importantly, no significant contribution has come from the private sector for biodiversity management in the region.

**FIGURE 18** SPECIES OCCURRENCE RECORD AND DATA SETS AS OF FEBRUARY 2021



Source: GBIF (2021)



Himalayan blue poppy (*Meconopsis betonicifolia*), Bajhang, Nepal





Rhinos (*Rhinoceros unicornis*) in Chitwan National Park, Nepal

CHAPTER 5

## Links between Aichi Targets and the sustainable development goals



## HIGHLIGHTS

Aichi Targets are closely linked and directly contribute to the SDGs in the HKH



A woman winnowing rice grains in Lamabagar, Nepal

Biodiversity and ecosystems are essential for sustainable development. The benefits from ecosystems that enable human well-being and development have a strong link to the achievements of the 2030 Agenda for Sustainable Development (CBD, 2021). In fact, the achievements of the Strategic Plan for Biodiversity (2011–2020) are milestones on the way to the 2030 Agenda for Sustainable Development. The critical role of biodiversity in ensuring sustainable development has also been strongly emphasized by IPBES (IPBES, 2019). Positive trends on the status of biodiversity would contribute to the achievement of the SDGs, while negative trends on species and ecosystems threaten the well-being of people and the prospect of economic growth, thereby posing a challenge to the 2030 Agenda on Sustainable Development (IPBES, 2019). The Strategic Plan for Biodiversity with its 20 Aichi Targets and the 2030 Agenda for Sustainable Development are mutually supportive and hence the progress of one contributes to the achievements of the other. This section aims to show the links between the Aichi Targets and the SDGs at the global scale and also in the Hindu Kush Himalaya.

### 5.1 Links between the Aichi Targets and SDGs at the global scale

The Aichi Targets and the SDGs are highly complementary. Figure 19 shows the summary of linkages between the SDGs and the Aichi Targets. SDG 14 and 15, in particular, directly address biodiversity loss, and encourage sustainable management, thereby showing its strong links to 16 Aichi Targets – 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, and 19.

The progress on one Aichi target directly contributes towards the achievements of some SDGs and vice versa. This shows how biodiversity underpins human well-being and livelihoods, and is vital for achieving the SDGs (FAO, 2019). Supporting the livelihoods of billions, biodiversity is immediately relevant to SDG-1 on ending poverty, and SDG-8 on economic growth. SDG-10 is about improving socio-economic growth and reducing inequality within and among countries and social groups; this is directly linked to Aichi Targets 4, 6, 11, 15, 16, 17, and 18 which are about the recognition of rights of indigenous peoples, local communities, and women, as well as about fair and equitable benefit sharing. Biodiversity is key for SDG-2 on food security and improved nutrition which is linked to Aichi Targets 4, 6, 7, 13, and 18. In fact, ecosystem functions and services which support agricultural productivity, soil fertility, and water quality and supply are essential for maintaining

food security and improving the nutrition status of populations across the world. Maintaining the health of ecosystems would also ensure protection against disasters (SDG-6); enable varied sources of energy (SDG-7); supply nature-based solutions to address the challenges of urban life (SDG-11); and mitigate climate change (SDG-13) (see Figure 19).

### 5.2 Aichi Targets and SDGs in the Hindu Kush Himalaya

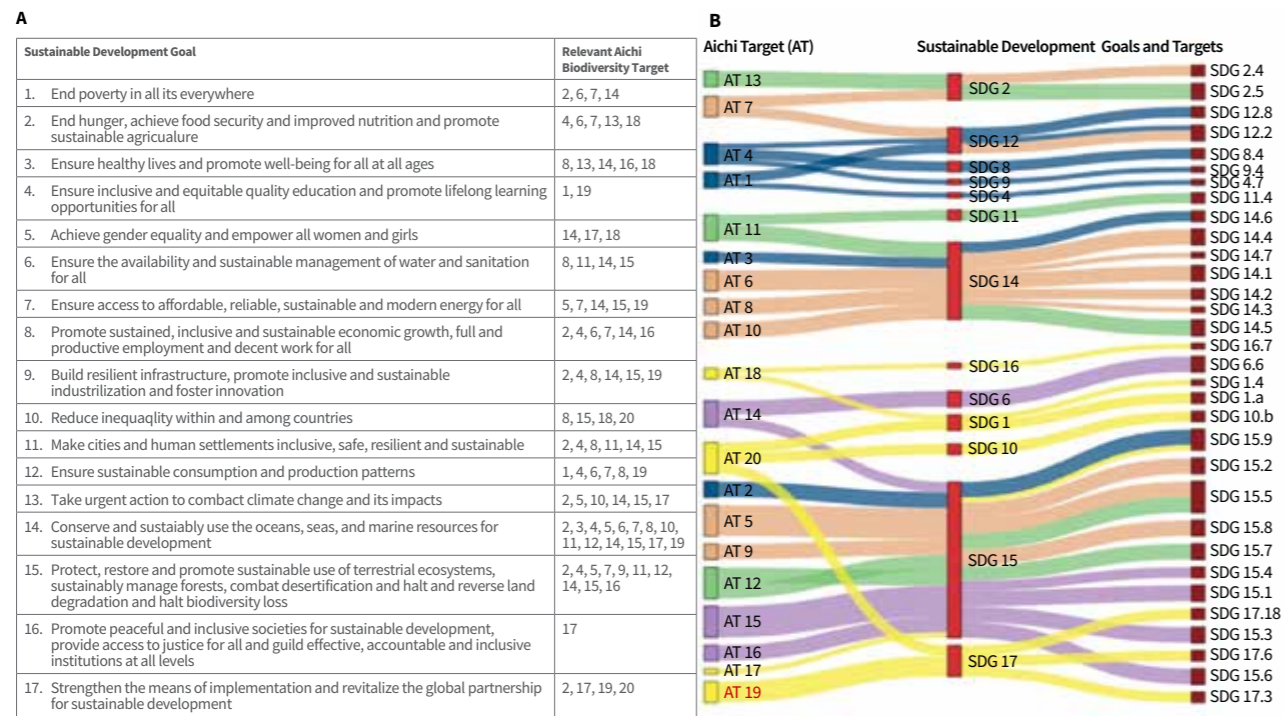
The Aichi Targets are closely linked and have been reported to contribute to the SDGs in the HKH (see Figure 20). The links between the Aichi Targets and the SDGs, as reported by the countries in their National Biodiversity Strategy and Action Plan (NBSAP) and in their Sixth National Report to the CBD (6NR), are as follows:

#### Links between the Aichi Targets and SDGs: country-wise analysis

Six countries (Afghanistan, Bangladesh, Bhutan, India, Nepal, and Pakistan) reported on the links and contributions of the Aichi Targets to the SDGs, while there was no reporting by China and Myanmar. Afghanistan showed the linkage of Aichi Target 10 (vulnerable ecosystems) to SDG-13 (climate action) by restoring and conserving forest ecosystems to reduce



**FIGURE 19 LINKS BETWEEN THE AICHI TARGETS AND SDGS AND ITS TARGETS**



Source: CBD, (2016, 2015)

greenhouse gas emissions. Similarly, Bhutan showed the contributions of Aichi Targets 4 (sustainable production/consumption), 11 (PAs), and 15 (ecosystem resilience) to SDG-1 (eradication of poverty), SDG-13 (climate action), and SDG-15 (life on land) through effective management of the PA systems and promotion of sustainable consumption practices. Bangladesh linked Aichi Targets (2, 6, 12) to SDGs (12, 14, and 15) by promoting sustainable consumption, and conserving life below water and on land. In India, Aichi Targets (1, 2, 3, 4, 6, 8, and 11) have been reported to have contributed to SDGs (1, 6, 7, 8, and 12) for ending poverty, improving sanitation, ensuring decent work and economic growth, and paving way for responsible consumption and production for the sustainable development of the country. Similarly, Nepal reported the links between Aichi Targets (1, 4, 6, 7, 11, 14, 15, and 19) and SDG-1 (alleviation of poverty), SDG-10 (reduction of inequality), SDG-11 (sustainable cities and communities), SDG-12 (sustainable consumption), and SDG-13 (climate action).

**Links between Aichi Targets and SDGs: Aichi Targets-wise analysis**

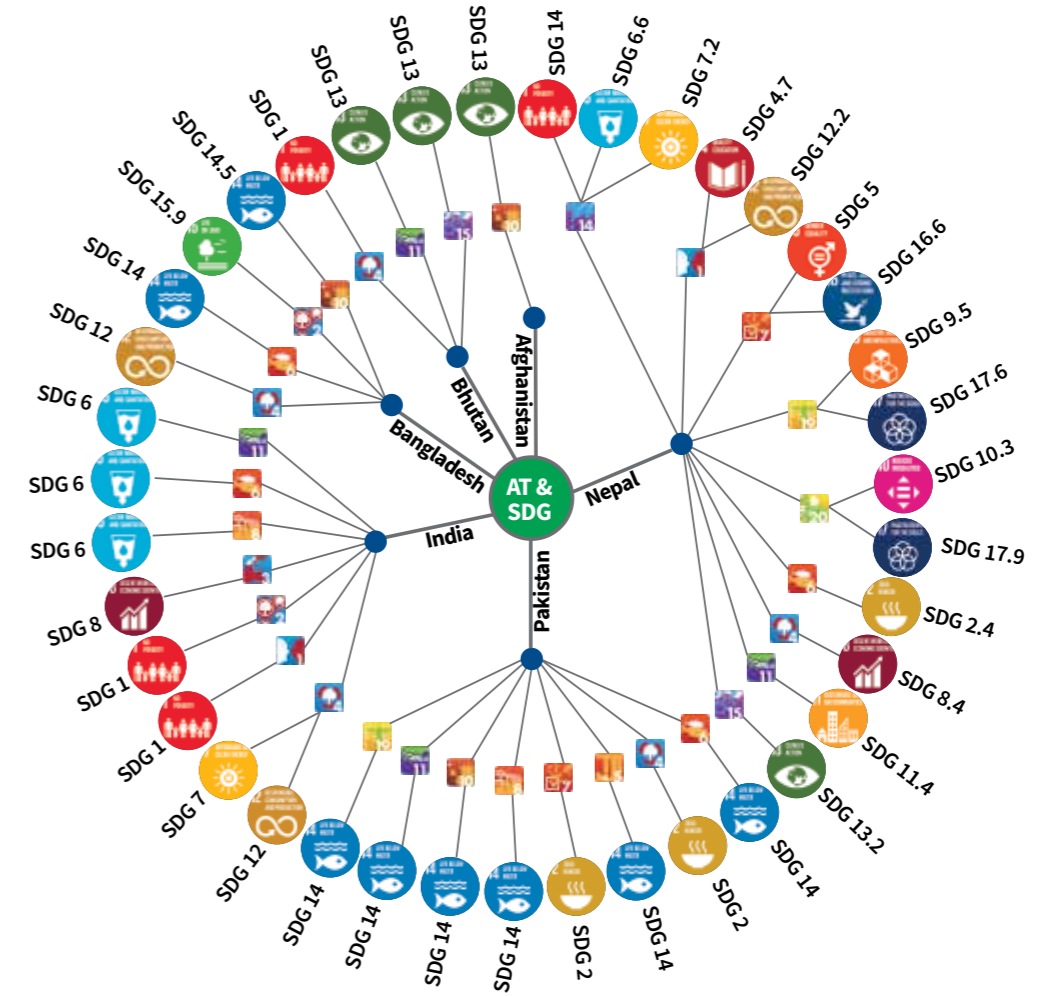
A total of 10 Aichi Targets have been found to have direct links to a total of 16 SDGs (see Table 5). In

**TABLE 5 RANKING OF AICHI TARGETS LINKED TO SDGS, AS REPORTED BY THE HKH COUNTRIES**

Ranking	Aichi targets	SDGs
1	Target 4 – Sustainable production and consumption	1, 2, 7, 8, 12
2	Target 6 – Sustainable fisheries	2, 6, 14
3	Target 11 – Protected Areas	6, 11, 13, 14
4	Target 1 – Awareness raising	1, 4, 12
5	Target 10 – Vulnerable ecosystems	13, 14
6	Target 14 – Ecosystem services	1, 6, 7
7	Target 19 – Knowledge, science, and technology	9, 14, 17
8	Target 7 – Sustainable agriculture and forestry	2, 5, 16
9	Target 15 – Ecosystem resilience	13
10	Target 2 – Integrating biodiversity values	15, 1
11	Target 20 – Mobilization of financial resources	10, 17
12	Target 8 – Pollution	6, 14
13	Target 3 – Eliminating incentives/harmful subsidies	8
14	Target 5 – Reducing habitat loss	14

Source: NBSAPs and Sixth National Reports

**FIGURE 20 LINKS AND CONTRIBUTIONS OF THE AICHI TARGETS TO SDGS IN THE HINDU KUSH HIMALAYA**



**Sustainable Development Goals (SDG)**

- 1 No poverty
- 2 Zero hunger
- 3 Good health and wellbeing
- 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 institutions
- 17 Partnerships for goal

**Aichi Target**

- T1: awareness raising
- T2: biodiversity values
- T3: incentives
- T4: sustainable production/consumption
- T5: habitat loss
- T6: sustainable fisheries
- T7: sustainable agriculture/forestry
- T8: pollution
- T9: invasive alien species
- T10: vulnerable ecosystems
- T11: protected areas
- T12: threatened species
- T13: genetic diversity
- T14: ecosystem services
- T15: ecosystem resilience
- T16: Nagoya Protocol
- T17: NBSAPs update
- T18: traditional knowledge
- T19: knowledge, science, and technology
- T20: financial resources mobilization



this regard, Aichi Target 4 (sustainable production and consumption) has contributed the most to SDGs, namely 1, 2, 7, 8, and 12; followed by Target 6 (sustainable fisheries) to SDGs 2, 6, and 14; Target 11 ( PAs) to SDGs 6, 11, 13, and 14); Target 1 (awareness raising) to SDGs 1, 4, and 12); and Target 10 (vulnerable ecosystems) contributing to SDG-13 (climate action) and SDG-14 (life under water). Except for SDG-3 (good health and well-being), the countries have directly linked its Aichi Targets to all the SDGs.

#### Links between Aichi Targets and SDGs: SDG-wise analysis

A total of 16 SDGs have been reported to have directly contributed to 14 Aichi Targets (see Table 6). In this regard, SDG-14 (life below water) has been ranked at the top with its links to six Aichi Targets (5, 6, 8, 10, 11, and 19), followed by SDG-1 (eradication of poverty), SDG-6 (clean water and sanitation), SDG-13 (climate action), SDG-2 (zero hunger), and SDG-12 (responsible consumption and production). This showed the HKH countries' focus on the following areas for sustainable growth: ecosystem management for climate action; reduction of poverty; clean energy; economic growth; equality; clean water; and zero hunger (see Table 6).

Overall, the analysis showed strong and mutually supportive links between the Aichi Targets and the SDGs in the Hindu Kush Himalaya. The countries have prioritized sustainable production/consumption, fisheries management, ecosystem management through PAs, and conservation of vulnerable ecosystems for contributing to the SDGs, especially pertaining to the goals involving life below water, poverty, climate action, and sustainable practices. The countries have also focused on addressing issues of inequality, peace, justice, and promoting strong institutions.

**TABLE 6** RANKING OF SDGS LINKED TO AICHI TARGET, AS REPORTED BY THE HKH COUNTRIES

Ranking	SDG	Aichi Targets
1	14 – Life below water	5, 6, 8, 10, 11, 19
2	1 – Ending poverty	1, 2, 14
3	6 – Clean water and sanitation	6, 8, 11, 14
4	13 – Climate action	10, 11, 15
5	2 – Zero hunger	4, 6, 7
6	12 – Responsible consumption and production	4, 4, 1
7	7 – Affordable and clean energy	4, 14
8	8 – Decent work and economic growth	3, 4
9	17 – Partnerships for the Goals	19, 20
10	4 – Quality education	1
11	5 – Gender equality	7
12	9 – Industry, innovation, and infrastructure	19
13	10 – Reducing inequality	20
14	11 – Sustainable cities and communities	11
15	15 – Life on land	2
16	16 – Peace, justice, and strong institutions	7

Source: NBSAPs and Sixth National Reports



Wild mushrooms for sale at a local market, Myanmar





CHAPTER 6

## Regional and bilateral cooperation





Blood pheasant (*Ithaginis cruentus*), China

## HIGHLIGHTS

Species-focused work, knowledge exchange, and transboundary collaboration through the regional cooperation framework (RCF) are some of the modalities of cooperation

Regional cooperation promotes science, policy, practice and advocacy for better conservation and evidence-based policy making

Cooperation and collaboration are key to achieve the three major objectives of the CBD, especially in the HKH where the fragile ecosystem and biodiversity is a shared heritage. Considering the need and importance, the regional countries have been giving emphasis to cooperation with a wide range of institutions, stakeholders, and processes across scales. South–South and North–South cooperation as tools, particularly in the areas of capacity building, resources transfer, and technology, have been promoted for the implementation of the Strategic Plan and to achieve conservation goals (CBD, 2021). In this regard, Cooperation among the countries in the HKH is evident and numerous examples can be given to illustrate it.

Our analysis found different models of regional cooperation for conservation and development in the region. The first one is species-based where two or three countries have been cooperating to address the issue of wildlife conservation. For instance, Bangladesh, Bhutan, and Nepal have initiated what is called “regional cooperation for wildlife protection” to build capacity and to provide incentives to protect their critically important species (see Table 7). The model also focuses on strengthening regional cooperation for preventing illegal wildlife trading. Besides, Bangladesh, Bhutan, India, and Nepal have been cooperating to enhance shared capacity and

to strengthen institutions and knowledge systems in order to address cross-border poaching and other conservation threats in the transboundary areas (World Bank 2012). Similarly, a regional cooperation initiative for the conservation of the snow leopard, wild prey, and associated species and their habitats in the higher mountains has been in practice in the HKH (Li et al., 2020). Myanmar has also been involved in transboundary collaboration for the conservation of seeds and flagship species through exchange of information on migratory species with its neighbouring countries.

**The ecosystem-based** model is a practice whereby countries collaborate for halting biodiversity loss and to conserve ecosystems; this model transcends national administrative boundaries. For instance, India and Nepal have entered into an agreement to strengthen the transboundary conservation of ecosystems and mega species like the Indian rhino, the Bengal tiger, and the Asian elephant (Aggarwal 2019). A system of transboundary PA management is also under consideration on the lines of the Transboundary Manas Conservation Area between Bhutan and India (see Table 7).

Besides, ICIMOD, by adopting the Ecosystem Approach, has been implementing transboundary landscape initiatives across the HKH under the guidance of the **Regional Cooperation Framework**

**(RCF)**. The RCF is an agreed document between the participating countries to promote and facilitate transboundary conservation; it also pertains to development and climate change adaptation; and serves as a guiding document to implement the programme. Currently, there are four transboundary landscapes in operation whose primary focus is regional cooperation for the conservation and sustainable development of these landscapes. One such is the Hindu Kush Karakoram and Pamir Landscape (HKPL), a landscape shared by Afghanistan, China, Pakistan, and Tajikistan; it attempts to improve the synergy among the stakeholders for the long-term development and conservation of the fragile ecosystems in the area. The Kangchenjunga Landscape Conservation and Development Initiative (KLCIDI), shared by Bhutan, India, and Nepal, seeks to enhance socioecological resilience by conserving and managing ecosystems and its services, and by improving livelihoods through nature-based solutions. Similarly, the Kailash Sacred Landscape (KSL) initiative promotes transboundary cooperation to conserve ecosystems, biodiversity, and ways of life across China, India, and Nepal. The Landscape Initiative for the Far Eastern Himalaya (HI-LIFE) aims to enhance regional collaboration for a better flow of culture, trade, and ideas across China, India, and Myanmar for improved natural resources management.



**TABLE 7 LIST OF ONGOING REGIONAL COOPERATION INITIATIVES IN THE HINDU KUSH HIMALAYA**

Country	Cooperation
Afghanistan	<ul style="list-style-type: none"> <li>The Hindu Kush Pamir Landscape (HKPL) Initiative aims to address cross-border conservation and development issues through improved transboundary cooperation among Afghanistan, China, Pakistan, and Tajikistan.</li> </ul>
Bangladesh	<ul style="list-style-type: none"> <li>Strengthening Regional Cooperation for Wildlife Protection to build capacity and offer incentives to improve the management of critical wildlife in Bangladesh, Bhutan, and Nepal.</li> <li>Capacity building and knowledge sharing between Bangladesh, Bhutan, India, and Nepal to tackle illegal wildlife trade and other conservation threats in the transboundary areas.</li> </ul>
Bhutan	<ul style="list-style-type: none"> <li>The Kangchenjunga Landscape Conservation and Development Initiative (KLCDI) between Bhutan, India, and Nepal to maintain and sustainably manage the mosaic of conservation space in the eastern Himalaya through transboundary conservation mechanisms.</li> <li>A Transboundary Manas Conservation Area (Bhutan and India) has been established in collaboration with ICIMOD and WWF.</li> </ul>
China	<ul style="list-style-type: none"> <li>The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organisation of seven South and Southeast Asian nations consisting of Bangladesh, Bhutan, India, Nepal, Sri Lanka, Myanmar, and Thailand. This regional alliance is essentially for economic cooperation but is also equally important for the conservation and management of transboundary ecosystems.</li> <li>The Kailash Sacred Landscape Initiative is a transboundary landscape programme between China, India, and Nepal with an aim to conserve and develop the bio-culturally rich landscape through the signed Regional Cooperation Framework (RFC).</li> <li>China-ICIMOD (CNICIMOD) has been established to strengthen regional cooperation in the science, policy, and practice of conservation in the HKH.</li> <li>China Climate Change South-South Cooperation Fund has been established to promote clean energy, disaster prevention and mitigation, ecological conservation, climate-adaptive agriculture, and low-carbon cities.</li> </ul>
India	<ul style="list-style-type: none"> <li>Identified 12 transboundary protected areas through bilateral and/or multilateral cooperation which were initiated with neighbouring nations.</li> <li>India–Nepal Memorandum of Understanding (MoU) for transboundary cooperation for conservation of the Indian rhino, the Bengal tiger, and the Asian elephant.</li> <li>India’s agreement to cooperate in ICIMOD’s flagship programme on Transboundary Landscapes: Kangchenjunga Landscape Conservation and Development Initiative (KLCDI), and Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI).</li> </ul>
Myanmar	<ul style="list-style-type: none"> <li>Transboundary collaboration for conservation of seeds and flagship species through exchange of information on migratory species.</li> <li>ICIMOD: HI-LIFE is a transboundary landscape initiative between China, India, and Myanmar for conservation and sustainable development through an agreed Regional Cooperation Framework (RCF) among the three countries.</li> </ul>
Pakistan	<ul style="list-style-type: none"> <li>Regional cooperation for conservation of flagship species such as the snow leopard in the higher mountains; and conserving wild prey and associated species and their habitats through measures such as maintaining ecosystem values; ameliorating climate change impacts; enhancing surveillance and monitoring; forging inter-provincial and transboundary partnerships to reduce wildlife crime and related threats; and improving knowledge and communications systems. For instance, Hindu Kush Karakoram Pamir Landscape (HKPL) is a regional initiative between Afghanistan, China, Pakistan and Tajikistan for conservation and development in the area.</li> </ul>
HKH Call to Action	<ul style="list-style-type: none"> <li>The HKH being a fragile mountain ecosystem and considered as a water tower with rich biodiversity, has been a priority, and the HKH Call to Action with six urgent actions, including one on sustaining ecosystem services through interventions in biodiversity conservation, could be an instrumental regional mechanism.</li> </ul>

Regional collaboration has also been focusing on promoting science, policy, and practice for better conservation and evidence-based policymaking. For instance, China has 40 agreements with different countries, including Nepal, Pakistan, and Myanmar, to cooperate on science, evidence-based policymaking, and capacity building for conservation and climate change adaptation. Besides, China-ICIMOD (CNICIMOD) has been established to strengthen regional cooperation on science, policy, and the practice of conservation in the HKH.





CHAPTER 7

## Discussions and conclusion





Blue sheep (*Pseudois nayaur*), Bhutan

HIGHLIGHTS

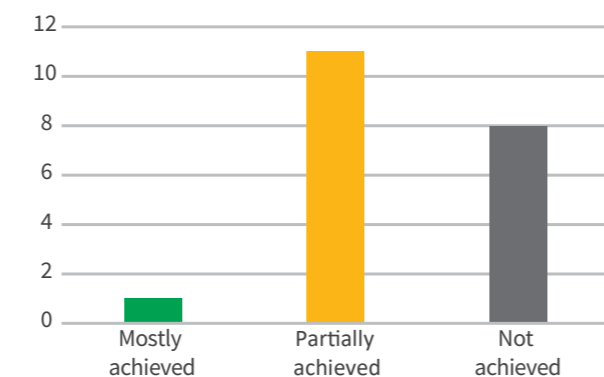
A transformative change in science, policy, and practice across scales is required to achieve the Aichi Targets

The HKH Call to Action, agreed upon by the HKH countries, could be mainstreamed for integrated conservation and development in the region

**7.1 An overview of the progress on Aichi Targets at the regional scale**

Significant progress has been made by the region towards meeting all the Aichi Targets (see Figure 21). To sum up, out of the 20 targets, one has been mostly achieved, 11 have been partially achieved, while the rest eight have not been achieved.

**FIGURE 21** A REGIONAL OVERVIEW OF THE STATUS OF THE PROGRESS ON THE 20 AICHI TARGETS, BASED ON THE SIXTH NATIONAL REPORTS SUBMITTED TO THE SCBD



Source: CBD (2020)

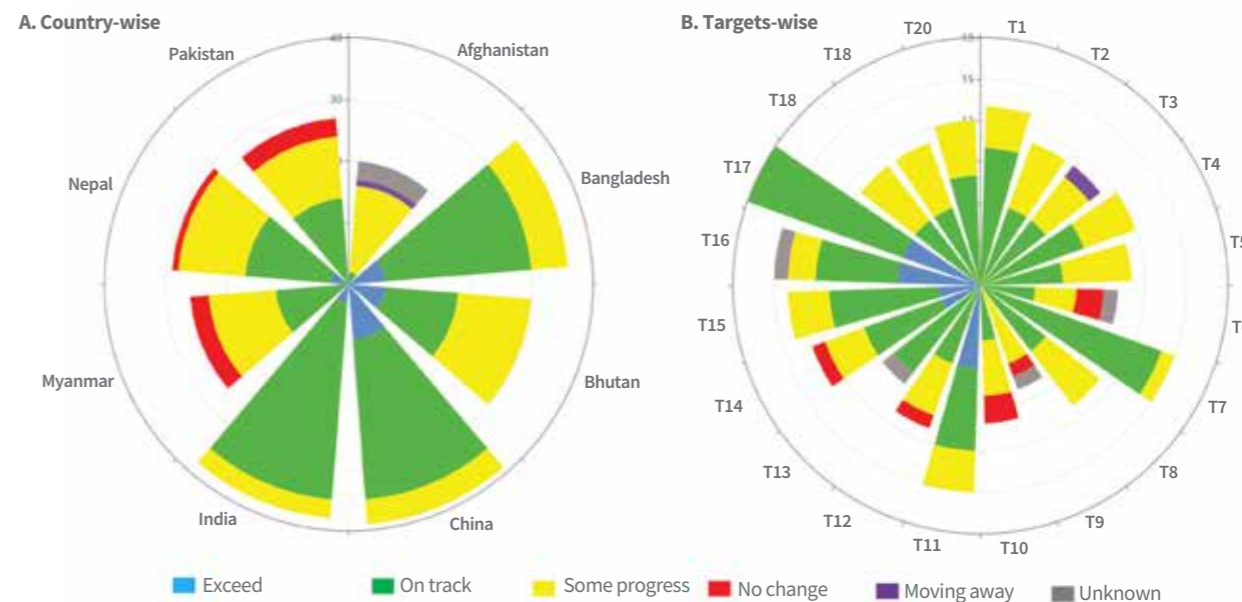
**7.2 Assessment of the progress at the regional level: country- and targets-wise**

The progress reported on meeting the Aichi Biodiversity Targets at the country level shows that much more needs to be done to achieve the targets. None of the regional member countries have fully met the 20 targets (see Figure 22).

Among the countries in the region, China has shown the best level of progress; its performance has “exceeded” for targets 14, 15, and 17; on 13 targets (1, 2, 3, 4, 5, 7, 8, 11, 13, 16, 18, 19, and 20), it’s “on track”; and on four (6, 9, 10, and 12), it has shown “some progress but at an insufficient rate”.

India has “exceeded” in the case of Target 11; it’s “on track” on 16 targets; and on three targets (9, 19, and 20), it has shown “some progress but at an insufficient rate”.

**FIGURE 22** PROGRESS TOWARDS THE GLOBAL AICHI TARGETS



Source: National Reports submitted to CBD.



Bangladesh has “exceeded” on targets 16 and 17; the country is “on track” on 12 targets (1, 6, 7, 8, 10, 11, 12, 13, 14, 15, 19, and 20); and on six targets (2, 3, 4, 5, 9, and 18), it has shown “some progress but at an insufficient rate”.

Bhutan has “exceeded” in the case of Targets 11 ( PAs) and 16 (Nagoya Protocol); it is “on track” on six (4, 7, 12, 13, 17, and 18); and on 12 targets (1, 2, 3, 5, 6, 8, 9, 10, 14, 15, 19, and 20), it has shown “some progress but at an insufficient rate”.

Nepal has “exceeded” on Target 13 (genetic diversity maintained); it is “on track” on seven targets (1, 4, 7, 11, 14, 15, and 17); on 11 targets (2, 3, 5, 8, 9, 10, 12, 16, 18, 19, and 20), it has shown “some progress but at an insufficient rate”; while on Target 6 (sustainable fisheries), it has reported “no change”.

Afghanistan has got only one target (17, on NBSAP) “on track”; it has shown “some progress but at an insufficient rate” on 15 targets (1, 2, 4, 5, 7, 8, 10, 11, 12, 13, 14, 15, 18, 19 and 20); and has been “moving away” from Target 3 (incentives/harmful subsidies). While, data was not available for three targets (6, 9 and 16).

Myanmar is “on track” for five targets (3, 5, 7, 17 and 20); it has made “some progress but at an insufficient rate” on 10 targets (1, 2, 4, 10, 11, 12, 14, 15, 16 and 19), and it has shown “no change” in the case of five targets – 6 (sustainable fisheries), 8 (pollution reduced), 9 (invasive alien species prevented), 13 (genetic diversity maintained) and 18 (traditional knowledge respected and integrated).

Pakistan is “on track” on seven targets (1, 2, 7, 16, 17, 19, and 20); it has made “some progress but at an insufficient rate” on 10 targets (3, 4, 5, 6, 8, 9, 11, 13, 15, and 18); and “no change” on Targets 10, 12, and 14.

On an average, the countries have reported more than half (55 per cent) of their targets to be “on track”; 11 per cent to have “exceeded”; about 29 per cent to have made “some progress but at an insufficient rate”; 3 per cent with “no significant change”; and less than half per cent to have moved away from the targets. Significantly, there’s no information on the progress made on about 2 per cent of the targets.

### 7.3 Gaps and challenges

Major gaps and challenges have been observed in the progress towards meeting the Aichi Targets. Some of them are highlighted below:

1. There were variations in the alignment of the national targets with the Aichi Targets in terms of scope and level of ambition.
2. Setting indicators for the targets was challenging for the countries, and most of the national indicators are different from the global ones.
3. The time period between the submission of the NBSAP and the implementation of the action itself was very short. For instance, Pakistan submitted its NBSAP in 2018 with just two years left for implementing the planned actions.
4. Data collection and assessment on the progress were based on reviews, expert opinions, and brief field visits, with limited detailed data assessments.
5. Limited baseline information as well as access to information on the targets. In fact, Afghanistan could not report on the status of four major targets.
6. Some of the major drivers of change in the region are ecosystem degradation, rapid economic growth, pollution, climate change, and invasive alien species.
7. While long-term research results and data – albeit limited – are available on species, ecosystems, and drivers of change in the region, they have not been paid enough attention.
8. In many instances, CBD implementation was hugely dependent on international funding mechanisms in the wake of sparse availability of national funds; this hampered the progress.
9. Limited awareness among the stakeholders, especially from the development sector and the public, about biodiversity and its significance; awareness was also low about the commitments to the CBD. This impaired the prioritization process.
10. Prolonged conflict in the region, especially in Afghanistan, proved to be a major stumbling block in implementing the CBD in the mountain areas.
11. Political instability and unstable governments also hindered the meeting of the targets at the national and local levels.
12. The Programme of Work on Mountain Biodiversity (PoWMB), though provisioned, did

not seem to be high on the priority list of the countries.

13. Limited technical capacity in assessing and reporting on Aichi Targets and in the overall CBD implementation.

### 7.4 Recommendations

A transformative change is required to progress towards the conservation targets in the region. While the success rate notched by the HKH is comparatively better than the overall global scenario in terms of meeting the Aichi Targets, more concentrated efforts are required to usher in transformative change.

This change would require transformations in science, policy, and practice across scales in the region and beyond. A combination of solutions is what’s required to trigger the change demanded by the post-2020 biodiversity agenda.

Some of the key areas for actions ought to be: terrestrial ecosystems (restoring and conserving intact ecosystems at the landscape level beyond country boundaries); freshwater (quality and quantity of water for people and biodiversity through an integrated and upstream–downstream approach); agrobiodiversity (enhancing productivity with quality while reducing pressures on biodiversity for food security, genetic diversity, and socioecological resilience); urban ecosystem (promoting sustainable and planned green infrastructure for better health and quality of life); renewable energy (cutting dependency on fossil fuels and promoting nature-based solutions for mitigating the impacts of climate change and reducing pressures on biodiversity); and vulnerable ecosystems like mountains (advocating specific, concentrated action on conservation and the sustainable development of mountains).

While focusing on these key areas, the countries could also focus on the following recommendations:

1. The national ambitions and levels of targets need to be well aligned with the global targets. This should also focus on setting up a few and feasible and measurable indicators for each set of targets – both global and national.
2. The parties to CBD encourage submit their NBSAPs within a year after adopting the post-2020 Biodiversity Framework and agenda. This will provide enough time for the parties to implement

actions on the ground. In this regard, the global, regional, and financial mechanisms should be in place for smooth implementation.

3. Capacity building at the regional and national scales – with a particular emphasis on the post-2020 Biodiversity Framework and integrated targets – need to be planned ahead and executed. The regional institutions could coordinate and collaborate with global partners for capacity building and experience sharing. In this regard, North–South and South–South cooperation tools could be used.
4. Education and awareness could be part of the key actions for implementing the post-2020 agenda. Special attention should also be focused on horizontal and vertical cooperation (along environmental sectors, and across environment and development sectors). This could contribute to integrating biodiversity values in plans and strategies (Target 2).
5. Other Effective Area-based Conservation Measures (OECMs) could be prioritized in the region to progress on Target 11 ( PAs). This could also contribute to acknowledging and respecting the rights and practices of indigenous people and local communities (Target 18).
6. The PoWMB, as a key priority, need to be well reflected in NBSAPs, and should be a major component of the 2030 target.
7. The challenges such as human–wildlife conflict, wildlife trade, and the right to passage for migratory species need special attention in order to address future zoonotic diseases and pandemics with the help of advocacy and the practice of the one-health notion.
8. The landscape approach as part of Nature-based Solutions (NbS) could be mainstreamed and promoted in the NBSAP and implemented on the ground to address threats and challenges. Special attention could be given to address issues like species decline, habitat degradation, invasive alien species, pollution, ecosystem growth, and climate change.
9. Regional mechanisms such as the HKH Call to Action that has been agreed upon by the eight countries needs to be mainstreamed for conservation of biodiversity and reduction of poverty in the region.





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A man feeds fish, Panjshir Valley, Afghanistan

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**ICIMOD gratefully acknowledges the support of its core donors:** the Governments of Afghanistan, Australia, Austria, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Norway, Pakistan, Sweden, Switzerland; and programmatic support from the Government of the United Kingdom.

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ISBN 978-92-9115-731-0 (electronic)