

Benefiting from the REDD+ Himalaya Programme

Success stories from Bhutan, India, Myanmar, and Nepal



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Success stories from Bhutan, India, Myanmar, and Nepal

Editors

Yukari Yamasaki

Nabin Bhattarai



Bagan, an ancient city in the Mandalay Region of Myanmar, is a UNESCO World Heritage Site.

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Abbreviations and acronyms

BMU	Federal Ministry of the Environment, Nature Conservation and Nuclear Safety	ICIMOD	International Centre for Integrated Mountain Development
BSM	Benefit-sharing mechanism	MEA	Millennium Ecosystem Assessment
CBFM	Community-based forest management	MMR	Measuring, monitoring, and reporting
CF	Community forests	MRV	Measurement, reporting, and verification
CFUG	Community forest user group	NFI	National Forest Inventory
CO₂eq	Carbon dioxide equivalent	NFMS	National forest monitoring system
ERPD	Emission Reduction Programme Document	NTFPs	Non-timber forest products
FCPF	Forest Carbon Partnership Facility	REDD+	Reducing emissions from deforestation and forest degradation (including the conservation and enhancement of forest carbon stocks and sustainable forest management)
FMU	Forest management unit	RIC	REDD Implementation Centre
FREL	Forest Reference Emission Level	SFM	Sustainable forest management
FRL	Forest Reference Level	SRAP	State REDD+ Action Plan
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	UNFCCC	United Nations Framework Convention on Climate Change
HKH	Hindu Kush Himalaya		



A REDD+ pilot project site, Nepal's Ludikhola watershed is characterized by a successfully managed community forestry programme.

Foreword

The Paris Climate Agreement views REDD+ as a global instrument to restore, conserve, and manage forests as a priority climate action with mitigation and adaptation benefits. In the Hindu Kush Himalayan region, a majority of the rural populations are intricately dependent on forests and forest-based resources. Their subsistence economy is founded on the relationships between forests, agriculture, and animal husbandry. Striking a balance between these three natural resource bases is fundamental to sustainable mountain development.

The stories in this report depict experience at the field level on how to balance community needs with better forest management. The REDD+ Himalaya project funded by BMU through GIZ has been supporting four Himalayan countries – Bhutan, India, Myanmar, and Nepal – in building socially and environmentally conducive phases to prepare

them for REDD+ implementation. This report documents actions and processes undertaken by ICIMOD partners in respective countries that show their commitment to and preparedness for REDD+ implementation.

I'd like to thank the editors and all the contributing authors for this compilation of the success stories. These stories should not only be a benchmark for REDD+ actions, but also provide inspiration for scaling out best practices in the region and beyond, especially where local communities are at the centre of the REDD+ programmes.

David Molden
Director General
ICIMOD

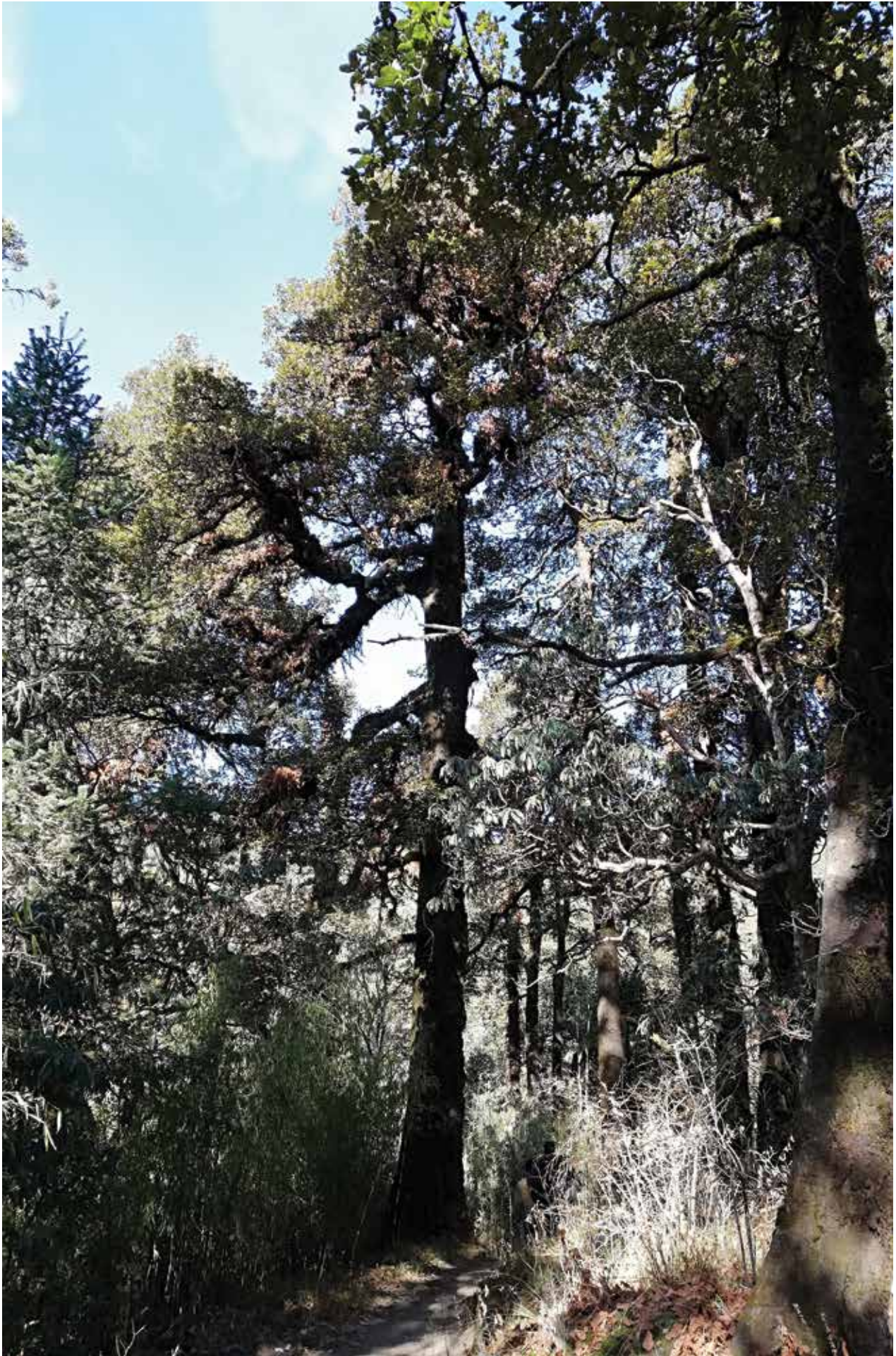


We are positive that this programme has supported ICIMOD's partner countries in improving conditions to implement socially and ecologically appropriate REDD+ measures to mitigate climate change. This collaboration has built on international social and environmental standards in REDD+, and followed this up with activities tailored to the changing landscape of UNFCCC negotiations since 2013.

It is great to see that this publication showcases success stories and lessons learnt from Bhutan, India, Myanmar, and Nepal. It is an achievement that the REDD+ Initiative – between ICIMOD and GIZ, with financial support by BMU – has successfully operationalized the first regional cooperation effort in REDD+ in the HKH region through work in these four regional member countries.

On behalf of GIZ, I would like to thank everyone who contributed to and supported the development and implementation of this Initiative. I am optimistic that the processes agreed upon and the results achieved will also be an important resource in the design and implementation of integrated and holistic REDD+ programmes within ICIMOD's partner countries and in increasing the socioeconomic resilience of people living in the Hindu Kush Himalaya in the future.

Elke Foerster
Country Director
GIZ Nepal



Tree cover is good for groundwater – it helps water retention and supports recharge.



Sal forests dominate the foothills of the Himalaya.

SECTION 1

Introduction

The global initiative ‘Reducing Emissions from Deforestation and Forest Degradation’ (REDD+) was established in 2015 following over a decade of negotiations, as part of the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). REDD+ is a results-based payment mechanism aimed at mitigating climate change by offering developing countries financial incentives to compensate for the costs of reducing their net greenhouse gas emissions from the forestry sector. REDD+ encompasses the following five activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

The REDD+ Himalaya programme commenced at the end of 2013, when the international UNFCCC negotiations on the structure of REDD+ were still under way. Its objective was to establish the political, institutional, and technical frameworks for the implementation of REDD. Four countries in the Himalayan region, namely Nepal, Bhutan, Myanmar, and India, joined the programme in the context that national forest authorities and forest user groups required capacity-building to take part in the global REDD+ mechanism.

At the start of the programme, an understanding of REDD+ was limited to only a few officials participating in the UNFCCC negotiations. The

requirements regarding forest reference level (FRL), measurement, reporting and verification (MRV), and meeting REDD+’s social and environmental safeguards were not interpreted in the same way by the different stakeholders. A common understanding and articulation of REDD+’s requirements only developed through engagement with REDD+’s focal points, and of subnational-level stakeholders, in the course of the REDD+ Himalaya programme. This was mainly done through the South–South learning platform in REDD+, operationalized by the REDD+ Himalaya programme. It aimed at demystifying the technical requirements of REDD+ and customizing its requirements to the Hindu Kush Himalayan context, keeping in view the different national circumstances of each country.

During the REDD+ Himalaya phase, the four countries have tried and tested different approaches in order to see what might be successful and what may not. This report presents case studies of the work carried out under the REDD+ Himalaya programme in Dolakha, Gorkha, and Chitwan districts in Nepal; the states of Uttarakhand and Mizoram in India; in Bhutan; and Shan state in eastern Myanmar. Its objective is to compile and present the success stories and the lessons learnt by each country during their REDD+ readiness phase so that countries can learn from each other as they move forward.



Conserving forests is conserving wetlands.

SECTION 2

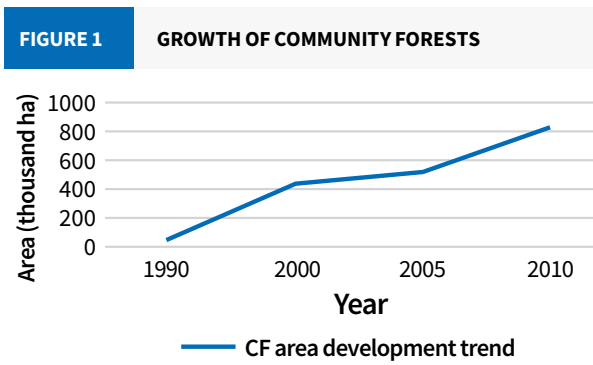
Nepal

Mainstreaming the REDD+ mechanism in community-based forest management

Bhaskar Singh Karky and Shankar Adhikari

Nepal's forest management is unique in that a third of its population manages nearly a third of the country's forest area, comprising about 1.8 million hectares. Globally, Nepal has been a pioneer in mainstreaming community-based forest management (CBFM) into forest policy, which has resulted in the greening of denuded hills. Figure 1 shows the significant growth of the area under community forests in the country, a positive result of community-favourable forest policy such as the Forest Act (1993) and Forest Regulations of 1995. Given this context, it is obvious that Nepal's position regarding the implementation of REDD+ under the Paris Agreement has to incorporate a socially inclusive and community-driven approach.

The results-based payment mechanism under REDD+ undoubtedly represents a paradigm shift in the manner in which forests are viewed and managed in the country. The role of forests in climate change mitigation and adaptation is now fully acknowledged by policy makers, scientists, and governments globally; however, the question remains as to how to link local, traditional actions with global concerns. This led the REDD+ Himalaya programme in Nepal to develop institutional capacities based on a decentralized and inclusive approach, building on the success of Nepal's community forest policy and its impacts. The programme focused on three districts, namely Dolakha, Gorkha and Chitwan, for building the capacity of subnational actors in understanding REDD+ instruments and in identifying activities that



Source: FAO (2010, p 18)

would further the implementation of the national REDD+ strategy.

The implementation of REDD+ requires many skills, including technical knowledge about measurement, reporting and verification (MRV), forest reference level (FRL), national forest monitoring system (NFMS), and benefit sharing mechanism (BSM). While there was support from numerous donors at the central level in the country, little knowledge about these technical issues was imparted at the subnational level, despite the fact that the real custodians and managers of forests are the local forest institutions. There existed a dearth of knowledge and skills among them in understanding the requirements of REDD+. The REDD+ Himalaya programme sought to fill those gaps.

The REDD+ Himalaya programme has been implemented in Nepal by the REDD Implementation



Melanesian REDD delegates visit the REDD Desk in Chitwan, Nepal.

Centre (RIC), Ministry of Forests and Environment, since 2014. At the central government level, the RIC is responsible for the overall coordination of the REDD+ programme in the country. The RIC has been able to use the REDD+ Himalaya programme to build synergy and complementarity with the REDD readiness phase of the country. At the subnational level, REDD desks were established in the three division forest offices (formerly known as district forest offices) of the project area through the programme. Similarly, REDD+ working groups were formed with terms of reference in each of these districts.

Capacity-building at the subnational level

The REDD+ working groups at the district level comprise multi-stakeholders representing government agencies, community-based organizations, indigenous peoples, women, and Dalits. They steer the REDD+ activities in the districts. Capacity-building in REDD+ was mainstreamed at the subnational level through these multi-stakeholder groups, making the programme reach out to the community forest user groups and other stakeholders. Furthermore, local resource persons were recruited and trained, to be able to assist in augmenting the role of local forest user groups in participating in REDD+ activities.

During the REDD readiness phase, the RIC conducted a multi-stakeholder self-assessment of Nepal's REDD+ readiness for the Forest Carbon Partnership Facility (FCPF) towards the preparation of the Readiness Package. At the local level, the assessment was conducted in 10 districts, including the three pilot districts, following the FCPF Readiness Package Assessment Framework. During the assessment, it was found that the knowledge of local people in the three districts about the REDD+ mechanism was remarkably higher than those outside the project area (REDD Implementation Centre, 2016). From this one can infer that ongoing project activities have contributed to raising local people's awareness and deepening their involvement in REDD+.

The RIC has also developed a measuring, monitoring, and reporting (MMR) guideline, which is used by teams at different levels in the districts (ICIMOD, 2016). The MMR guideline is needed to implement REDD+ interventions effectively, by enhancing the capacities of local communities and REDD+ practitioners to monitor, measure, and report information to the relevant authorities.

Agriculture is directly dependent on the forestry sector. That is why the forestry sector is one of the key areas where the government can invest for returns to the people. The key objective of the government policy is people's participation. The REDD Action Plan was prepared in consultation with the local people. That is why it was popular.

Sindhu Prasad Dhungana

Joint Secretary and Chief
Planning, Monitoring and
Coordination Division,
Ministry of Forests and Environment



Sustainable forest management practices include managing the use of forest products and resources such as timber, NTFPs, and fuelwood.

Furthermore, local involvement ensures the sharing of responsibilities and benefits and strengthens a sense of ownership over the programme's implementation and monitoring.

Carbon inventory training was imparted to forest user groups by local resource persons. As a result, these groups were able to integrate carbon data into their community forest operation plans.

The RIC and ICIMOD have also generated a manual for developing a Sub-national REDD Action Plan (Richards et al., 2017). This manual helped develop REDD+ interventions in two districts, Chitwan and Ilam. There was active stakeholder participation in the process, right from cause and effect analysis of deforestation and forest degradation, to solution analysis. This is another instrument that illustrates how local communities can participate in planning and implementing REDD+ through local institutions at the grassroots level, such as district forest coordination committees and the Nepal Federation of Indigenous Nationalities.

A study was conducted to assess the quality of governance of the community-managed forest management system for REDD+ in Bhutan, India, Nepal, and Myanmar. Quality of governance is represented by the meaningful participation of stakeholders and productive deliberation. It was measured based on four criteria, namely interest representation, organizational responsibility, decision-making, and implementation. The study showed that the quality of governance is perceived fairly positively at both the subnational and local levels in Nepal, which reflects the institutionally embedded nature of the 'district' model of forest governance (Maraseni et al., 2019). Besides, Nepal was selected for REDD+ implementation after the approval of the Emission Reduction Programme Document by the FCPF. The selection was based on the strengthening of local institutions, which demonstrates how the REDD+ mechanism can be mainstreamed at the institutional level in CBFM.

The key reason that the REDD+ Himalaya programme could meet its intended objectives

was mainly that the RIC was able to work at varied levels with different stakeholders. The National REDD+ Strategy explicitly mentions the importance of CBFM in addressing deforestation and forest degradation (MoFE, 2018). In addition, the CBFM is also recognized as a best practice model to ensure social inclusion. Indeed, the establishment of mechanisms, tools, and techniques at the subnational and local levels will enhance social inclusion by addressing existing exclusions in the governance structure.

The REDD+ Himalaya programme enabled the RIC to implement the REDD+ mechanism at the district level, enabling the synchronization of REDD+ requirements with local needs. For the future, as the country develops more subnational REDD+ programmes, one of the key lessons from this experience is to take a multi-stakeholder approach, as it makes the programme more inclusive and enables one to address the twin goals of reducing global greenhouse gas emissions and improving local livelihoods.



Old growth trees provide shade to coffee bushes.

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ADDITIONAL INFORMATION

Partners/donors who supported the work:

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2. International Centre for Integrated Mountain Development, Kathmandu, Nepal
3. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
4. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Republic of Germany



Rara National Park, Nepal is home to an estimated 1070 species of flora and close to 300 species of fauna.

Climate action with biodiversity conservation

Nabin Bhattarai, Bhaskar Singh Karky, Niroj Timalisina, Serena Amatya,
Trilochana Basnett, Rajaram Aryal, and Shyam Thapa

The HKH is the youngest global mountain biome

The Hindu Kush Himalaya (HKH) is one of the greatest mountain systems in the world, covering 4.2 million sq. km across eight countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. The region is a vast reserve of natural resources, and home to the world's highest peaks, unique cultures, and diverse flora and fauna. It is the origin of 10 major river basins and provides ecosystem services (including water, food, and energy) that directly sustain the livelihoods of 240 million people in the mountains and hills of the HKH. Nearly 1.65 billion people living in downstream areas of these river basins depend directly on the food produced in its river basins, and a further three billion people benefit indirectly. The HKH and the Tien Shan mountains together form the largest area of permanent ice cover outside of the north and south poles and are also referred to as the 'Third Pole'.

HKH ecosystems provide crucial ecosystem services to over two billion people, which is more than any other mountain system. The unique high mountains, driven by plate tectonics, have created a diverse landscape, climate variability, ecological gradients, and physical habitats that set the stage for ecosystem differentiation and species evolution. The biodiversity in the region is underexplored and further studies need to be conducted to document their occurrence and status. Between 1998 and 2008, an average of 35 new species were discovered each year in the eastern Himalaya alone. The mountains support 25% of the world's terrestrial biodiversity and include nearly half of the world's biodiversity hotspots. The HKH harbours 4 out of the 32 hotspots. (Wester et al., 2019).

Major drivers of forest and biodiversity loss in the HKH

Climate change is a major driver of the degradation of this biome. According to the HKH Assessment report (Wester et al., 2019), even if global warming is limited to 1.5°C, warming will likely be at least 0.3°C higher in the HKH, and at least 0.7°C higher in the northwest Himalaya and Karakoram. There has been a rising trend of extreme warm events in the HKH over the past five to six decades, a falling trend of extreme cold events and a rising trend in extreme values and frequencies of temperature-based indices (both minimum and maximum).

Land use conversion from forest to agricultural land and urban expansion have further contributed to the fragmentation of wildlife habitat throughout the HKH region. Low productivity of land and shifting cultivation, together with weak land use planning and forest governance, have intensified forest degradation. Declining soil fertility is another major concern that stems from landslides, erosion, overgrazing, poor soil management practices, intensified droughts and rainfall, and unplanned urbanization and construction, among other factors. These pose serious challenges to forest and biodiversity loss in the region.

Climate change mitigation and biodiversity conservation

Climate change is one of the greatest challenges we face today and there is ample evidence that it affects biodiversity. According to the Millennium Ecosystem Assessment (MEA) 2005, climate change is likely to become one of the most significant drivers of biodiversity loss by the end of the century. It is producing poleward range shifts of numerous taxa, communities, and ecosystems worldwide (Hampe & Petit, 2005) and also forcing biodiversity to adapt either through habitat shifts, life cycles changes, or the development of new physical traits (Araújo & Rahbek, 2006). However, its degree of impact may vary from place to place.

Conserving natural terrestrial, freshwater, and marine ecosystems and restoring degraded ecosystems (including their genetic and species diversity) are essential to meeting the overall goals of both the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC) (CDB, 1992; UNFCCC, n.d.). Ecosystems functions play a vital role in the global carbon cycle and in adapting to climate change, while also providing a wide range of



The white-toothed pygmy shrew weighs about 1.8 grams on average and is about 4 centimetres long, excluding the tail.

The white-toothed pygmy shrew (*Suncus etruscus*), the smallest mammal of Nepal and one of the smallest mammals of the world, was recorded at a survey site of the PNP.

ecosystem services that are essential for human well-being and the achievement of the Sustainable Development Goals.

Under the CBD, countries have developed their National Biodiversity Strategy and Action Plans (NBSAPs) to have a clear roadmap on the conservation and sustainable utilization of biodiversity and equitable benefit-sharing arising from it. (CDB, 1992) (CDB, 1992) On the other hand, the Paris Agreement under the UNFCCC requires developing countries to prepare REDD+ national strategies or Action Plans, which include forest monitoring systems, and environmental and social safeguards information systems, among others.¹ While implementing these frameworks at the ground level, both the UNFCCC and the CBD contribute to the goals of climate change mitigation and biodiversity conservation through separate streams.

Biodiversity conservation helps reduce the negative effects of climate change as conserved or restored habitats can remove carbon dioxide from the atmosphere. It is an ecosystem-based adaptation

measure as well. Because REDD+ is a financing model, countries can identify numerous avenues through which to conserve biodiversity, which also depends on how REDD+ is designed and implemented in a particular country. After REDD+ safeguards were defined in 2010, countries were able to demonstrate that the implementation of REDD+ ensures social and environmental safeguards. Nepal developed the Biodiversity Monitoring Protocol for REDD+ for this purpose. The Protocol monitors biodiversity, which can mitigate the externalities of REDD+ implementation. The information generated can be part of the biennial submission to the UNFCCC on safeguards.

Improving biodiversity focus for the REDD+ Programme

Implementation of the Biodiversity Monitoring Protocol will help avoid negative impacts on biodiversity conservation, as recognized by the Cancun Agreements at the 2010 United Nations Climate Change Conference. The Cancun Agreements meet the multiple-benefit standards outlined by the Climate, Community and Biodiversity (CCB) Standards. Additionally, the Biodiversity Monitoring Protocol will also promote and strengthen coordination between the UNFCCC and the CBD, which can ultimately lead to the implementation of the Multi-lateral Environmental Agreement (MEA), including the Rio Conventions, on the ground. The protocol was developed by a multi-disciplinary team through various levels of stakeholder consultations. The core team consisted of personnel at the Ministry of Forests and Environment (MoFE), the REDD Implementation Centre (RIC), the Department of National Parks and Wildlife Conservation (DNPWC), the Nature Trust of Nature Conservation (NTNC), and the International Centre for Integrated Mountain Development (ICIMOD).

A strategic aim of this protocol for REDD+ is to reduce risk to biodiversity depletion through a prioritization of sites with both high carbon value and high biodiversity benefit. To assess priority sites for conservation, one would ideally obtain biodiversity measures assessing the species richness (total number of species), species diversity (types of species), and population sizes of all species present at the site. In order to attain this information, the Biodiversity Monitoring Protocol for REDD+ provides a variety of methods, tools, and assessment at multiple points.

¹ Requirements under the UNFCCC REDD+ to access results-based payments: https://www.reddcompass.org/mgd-content-v2/dita-html/en/s6_1.html

The protocol has been prepared in the simplest of formats in order to cater to all types of stakeholders and contains all necessary tools required for biodiversity monitoring, covering all taxonomic groups and the selection of sampling sites. Additionally, it can generate temporal and spatial data/information on patterns, processes, and trends of biological resources so that they can be used to inform resource managers, policy and decision makers, community members, and other stakeholders.

Implementation of the Biodiversity Monitoring Protocol for REDD+

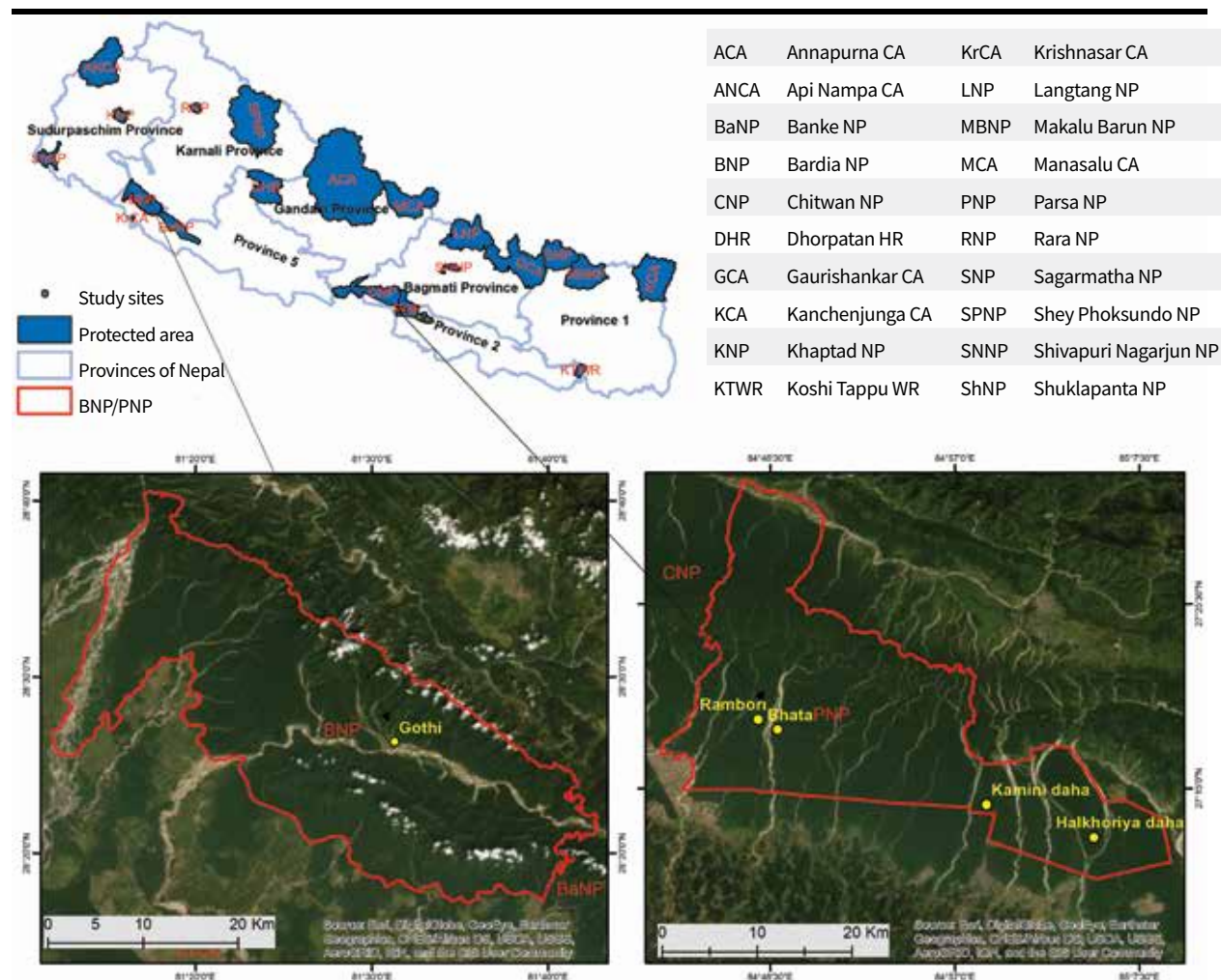
A team of experts from MoFE, RIC, DNPWC, and other concerned departments, together with NTNC and ICIMOD, implemented this protocol to document the biodiversity status of Bhata, Kaminidaha, and Halkhorja (Parsa National Park) and the Gothi area (Bardia National Park) (see figure 2), which fall within the Emission

Reduction Programme Document (ERPD) area (i.e., a future REDD+ programme area). The data generated from this exercise formed the baseline for the proposed REDD+ programme in the area. Field surveys were carried out from 19 February 2017–7 March 2017 in Parsa National Park and 23–29 December 2018 in Bardia National Park. These surveys indicated the feasibility of plans to implement the Biodiversity Monitoring Protocol in these areas.

Biodiversity, especially smaller faunal species, are good indicators of ecosystem health. Monitoring them can therefore be an effective approach to monitoring overall ecosystem health and contributing to biodiversity conservation. Recognizing the lack of a scientifically uniform approach to this kind of study, a survey was conducted with the aim of filling the gaps by addressing biodiversity monitoring methods for all the protected areas (PAs) of the Terai.

FIGURE 2

BIODIVERSITY MONITORING SURVEY SITES IN PARSA AND BARDIA



The comprehensive survey was helpful in successfully providing information on both faunal and floral diversity, especially in terms of baseline information on the distribution of small faunal species in the PAs of the Terai, about which there is very little information. Since a lot of areas in Nepal, even in the PAs, are yet to be explored for small faunal species, field implementation using the protocol can yield new information about species diversity. Furthermore, collection of data and continuous monitoring of such areas can help determine their conservation status, ecosystem health, and even their response to climate change.

Although the survey period was very short, the number of species encountered was appreciable. Many tools and techniques were employed. Camera traps were effective for recording and documenting medium- to large-sized mammals, whereas live traps were effective for small mammals. Similarly, pitfall traps and mist nets were particularly useful in surveying small mammals, herpetofauna, insects, and bats. And lastly, transect walks were effective for the survey of birds, butterflies,

herpetofauna, and anthropogenic disturbance as well as in identifying faunal species through direct and indirect signs.

Although most of the mammals listed below (Table 1) were not sighted directly in the survey area during the transect walks, their indirect signs were observed frequently in both the areas. Megafauna such as tiger (*Panthera tigris*), rhino (*Rhinoceros unicornis*), wild pig (*Sus scrofa*), gaur (*Bos gaurus*), and sambar (*Rusa unicolor*) were captured in camera traps whereas elephant were recorded through indirect sign surveys (Tables 2 and 3). Transect walks also produced a significant number of birds and butterfly species and a few species of dragonflies and herpetofauna. Although the sampling areas in PNP was drier compared to the Gothi area of BNP, it still had high mammal diversity.

In survey sites of the PNP, white-breasted waterhen (*Amaurornis phoenicurus*), bronze-winged jacana (*Metopidius indicus*) and lesser whistling duck (*Dendrocygna javanica*) were few of the wetland birds. Additionally, three frog species: the narrow-

TABLE 1 ASSESSMENT AND METHODOLOGY APPLIED		
Assessment	Parsa	Bardia
	Methodology applied	
Large mammals	Camera traps	Camera traps
Small mammals	Elliot traps, collapsible traps, and pitfall traps	Elliot traps, collapsible traps, and pitfall traps
Birds	Transect survey	Transect survey
Reptiles	Transect survey	Survey not conducted
Amphibians	Transect survey	Survey not conducted
Aquatic animals	Survey not conducted	Gill nets in transects
Macro invertebrates	Survey not conducted	Rapid appraisal/kick sampling
Butterflies	Transect survey	Survey not conducted
Dragonflies and damselflies	Transect survey	Survey not conducted
Forest inventory	Survey not conducted	Concentric Circular Sample Plot (CCSP) model used by Forest Research Training Centre (FRTC) for National Forest Assessment (NFA)

TABLE 2 MAMMALS CAPTURED BY CAMERA TRAP		
	Parsa	Bardia
Tiger (<i>Panthera tigris tigris</i>)	✓	✓
Golden jackal (<i>Canis aureus</i>)		✓
Spotted deer (<i>Axis axis</i>)		✓
Rhinoceros (<i>Rhinoceros unicornis</i>)		✓
Honey badger (<i>Mellivora capensis</i>)		✓
Wild pig (<i>Sus scrofa</i>)	✓	✓
Barking deer (<i>Muntiacus muntjak</i>)		✓
Sambar deer (<i>Rusa unicolor</i>)	✓	✓
Langur (<i>Semnopithecus spp.</i>)		✓
Gaur (<i>Bos gaurus</i>)	✓	

TABLE 3 NUMBER OF FAUNAL SPECIES RECORDED DURING THE TRANSECT SURVEY		
	Parsa	Bardia
Large mammals	13	14
Small mammals	16	3
Birds	73	51
Reptiles	5	Not conducted
Amphibians	3	Not conducted
Aquatic animals	Not conducted	3
Herpetofauna	6	Not conducted
Butterflies	52	Not conducted
Dragonflies/damselflies	17	Not conducted



The great hornbill (*Buceros bicornis*) is listed as Vulnerable in the IUCN Red List of Threatened Species.

mouthed frog (*Microhyla ornata*), the Indian skittering frog (*Euphlyctis cyanophlyctis*), and the Terai wart frog (*Fejervarya teraiensis*) were documented.

Seventeen different species of dragonflies and damselflies were recorded in the PNP sites.

In the BNP, the number of sight-based evidence of wild animals was surprisingly higher as the site selected was much smaller than that of the PNP. The number of wild animals captured in camera traps was very high, and included footage of four individual tigers during the duration of the survey.

More tools from the protocol were used to conduct assessments at the BNP compared to the PNP. These included an aquatic survey, a macroinvertebrates survey, and forest inventory. Three different species of fish were identified during the aquatic survey:

1. Kalabans (*Bangana dero*): Sighted population: 200, of which 60% were less than 1kg. They were sighted in deep pools and could not be caught using spoon lures or two-foot wide gill nets.

A wider gill or the electrofishing method will probably be required.

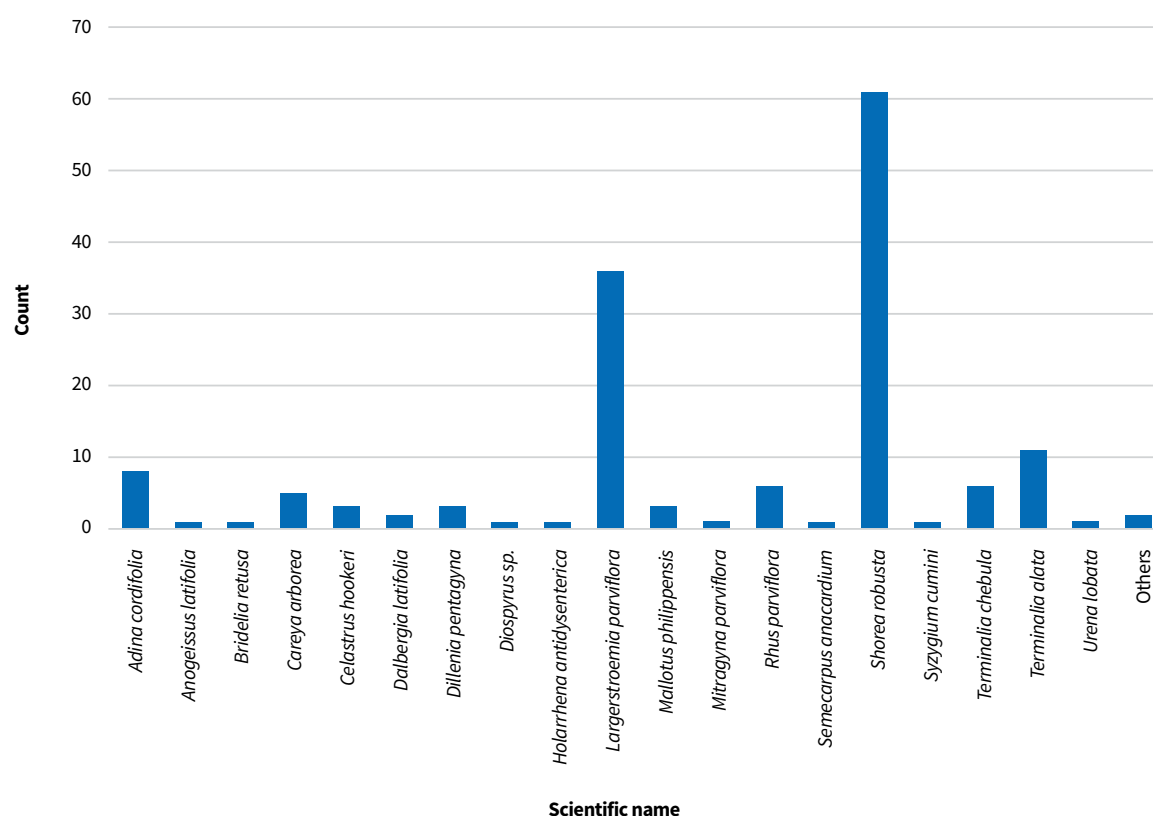
2. Golden mahseer (*Tor putitora*): Sighted population: 250 across the river in schools, 70% of them less than 1 kg. One was caught using a spinning rod and the rest were observed in the running water.
3. Indian trout (*Raiamas bola*): Sighted population: 2 in deep pools, both were less than 1 kg.

Similarly, a macro invertebrates survey was conducted to assess the water quality of a small section of the Babai River. Two different sites were selected for this survey, which indicated that the water quality class for the sites fall in Class-, meaning undisturbed/none to slight pollution as per a seven class scheme of river water classification (Sharma & Moog, 1996).

A total of 8 plots were designed to commence the inventory as per the Department of Forest Research and Survey (DFRS), Nepal's 2015 national forest inventory guideline. Overall, the count of each tree species was calculated to estimate the dominant

FIGURE 3

TREE SPECIES



tree species in the study site. Sal (*Shorea robusta*) was the highest recorded, with 61 trees counted within the specified radius, followed by bodh dhaiyaro (*Lagerstroemia parviflora*) as shown in figure 3.

Conclusion

The Biodiversity Monitoring Protocol for REDD+ proves to be an important tool for incorporating biodiversity monitoring in the implementation of REDD+ activities. While the objective of REDD+ is to mitigate GHG emissions, the Biodiversity Monitoring Protocol ensures that data and information are generated to provide baseline information on local biodiversity, which can be used for monitoring changes and ensuring environmental safeguards are implemented. This protocol needs to be used regularly across the REDD+ landscape as it also justifies compliance with the UNFCCC and the CBD.

The Biodiversity Monitoring Protocol is a combination of numerous tools, which can be customized as per site and physiography. The field sampling was conducted over a short period of time in two sites that lie in the ERPD landscape of

Nepal, in which the first REDD+ programme has been proposed. Periodic monitoring using this protocol will ensure integrity of the environment and biodiversity in REDD+ sites in the years to come. Its application in the selected sites has illustrated the richness in floral and faunal diversity of this landscape. The application of this protocol also led to the first documentation of a pygmy white-toothed shrew in the PNP. Smaller mammals like the pygmy white-toothed shrew and insects such as dragonflies have mostly been ignored in the PA taxonomical surveys, which focus more on larger mammals (megafauna). As a result of this survey, the protected areas, particularly Parsa National Park, can claim that they harbour both the smallest and largest mammals of Nepal. For Bardia National Park, aquatic data from the Babai River will be valuable in comparing what happens when the Bheri River, which is snow-few, is channeled to the spring-fed Babai River in the future.

The utility of this protocol goes beyond the purpose of serving the environmental safeguards for REDD+. There is further scope to engage university students and local volunteers for this exercise on an annual basis.



The golden mahseer (*Tor putitora*) is an important indicator species of a healthy Himalayan freshwater system.

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2. REDD Implementation Centre, Ministry of Forests and Environment, Nepal
3. National Trust for Nature Conservation, Khumaltar, Lalitpur, Nepal
4. International Centre for Integrated Mountain Development, Khumaltar, Lalitpur, Nepal
5. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
6. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Republic of Germany



Land being prepared for *jhum* cultivation in Mizoram, India.



Forest monitoring at a project site in India.

SECTION 3

India

Charting a REDD+ pathway through State REDD+ Action Plans in Mizoram and Uttarakhand

R.S. Rawat, Jaiyati Rawat, Nabin Bhattarai, and Bhaskar Singh Karky



An orientation programme on developing the SRAP for Mizoram.

As per the *India State of Forest Report 2017*, the forest cover in Mizoram extends over 18,186 sq km, which is 86.27% of the geographical area of the state. When compared to the previous survey, *India State of Forest Report 2015*, a net decrease in forest cover of 531 sq km in the state is reported (FSI, 2015; FSI, 2017). This decrease is mainly due to shifting cultivation and other drivers of forest degradation (addressed in the next chapter).

The forest cover in Uttarakhand is 24,295 sq km, which is 45.43% of the geographical area of the state (FSI, 2017). Again, when compared to the previous survey, *India State of Forest Report 2015*, the latest report reveals a net decrease in forest cover of 49 sq km in the state. In Uttarakhand, this decline is mainly due to developmental activities and other drivers of forest degradation. Local communities in both states are dependent on forests for their livelihoods and natural resources. This, along with other direct and indirect drivers, is putting tremendous pressure on forest resources and causing serious forest degradation. It clearly suggests that there is ample scope for the implementation of REDD+ activities, including the conservation of forests, the sustainable management of forests, and an enhancement of forest carbon stocks in both Mizoram and Uttarakhand.

The National REDD+ Strategy India clearly mentions the need for the preparation of State REDD+ Action Plans (SRAPs) for implementation of the REDD+ Strategy at the state/subnational level (MoEFCC, 2018). The SRAPs address the drivers of deforestation and forest degradation, as well as the barriers to forest carbon enhancement (which can be ensured mainly through reforestation, afforestation, and forest conservation). The problems of forest degradation due to state-specific drivers in Mizoram and Uttarakhand are being experienced by the local communities, foresters/forest practitioners, and other stakeholders. Hence, it was felt that the preparation and implementation of SRAPs for these two states may effectively address the drivers of deforestation and forest degradation in these states. This may enhance the health of their forests, and can ultimately lead to them receiving REDD+ finance.

The SRAP for Mizoram was prepared by ICIMOD, the Indian Council of Forestry Research and Education, Dehradun (ICFRE), and the Department of Environment, Forests and Climate Change, Government of Mizoram. The SRAP for Uttarakhand was prepared by ICIMOD, ICFRE, and the Forest Department, Government of Uttarakhand. Importantly, the two SRAPs were prepared through multi-stakeholder and

multi-sectoral consultative processes, in which practitioners from different sectors (forests, agriculture, horticulture, animal husbandry, public works, renewable energy, water/irrigation, watershed development), as well as representatives of research institutions, universities, civil society organizations, and local communities participated.

Addressing the drivers

This multi-stakeholder consultative process identified the following drivers of deforestation and forest degradation and barriers for the enhancement of forest conservation and forest carbon stocks as the most significant for Mizoram:

- **Direct drivers of deforestation:** Shifting (*jhum*) cultivation and limited livelihood options
- **Direct drivers or causes for forest degradation:** Shifting cultivation, forest fires, and the unsustainable collection of fuelwood and non-timber forest products (NTFPs)
- **Barriers to enhancement of carbon stocks:** Sociocultural aspects and traditions, the lack of economic resources, and the difficult topography

Depending on the nature of the drives and barriers, necessary state-specific intervention packages and activities were identified to address these in both states.

The intervention packages and activities identified for Mizoram include (Government of Mizoram, 2018):

- Sustainable cropping patterns and land management
- Adoption of horticultural crops
- Creating habitat mosaics for biodiversity conservation
- Livelihood enhancement
- Control and management of forest fires
- Sustainable energy supply
- Developing market linkages for agricultural produce
- Improving land entitlements

Likewise, the following drivers and barriers were identified as the most significant for Uttarakhand:

- **Direct drivers of deforestation:** Diversion of forest land for non-forestry purposes, loss of regeneration due to forest fires and grazing, encroachment of forest lands, and mining

With the REDD+ financial mechanism agreed upon under the UNFCCC, it is high time that countries gear up for REDD+ implementation on the ground. A State REDD+ Action Plan, developed with due diligence involving all the relevant stakeholders, will certainly give the state an advantage for receiving REDD+ finance.

Suresh Gairola

Director General, ICFRE, Dehradun
(Member of the Expert Group for preparation of the Uttarakhand SRAP)

India's National REDD+ Strategy, released by the Government of India, encourages state governments to create a REDD+ cell within the forest departments. It also encourages states to prepare State REDD+ Action Plans (SRAPs). The SRAPs, when prepared through multi-stakeholder participation, including that of local communities, will always stand a better chance to gain success on the ground.

V. R. S. Rawat

Former Assistant Director General
(Biodiversity and Climate Change)
ICFRE, Dehradun
(Member of the Expert Group for preparation of the Mizoram and Uttarakhand SRAPs)

It is well recognized that public participation in natural resource management is an important mechanism to ensure conservation of natural resources that include the forests. Uttarakhand has a long history of people's participation through van panchayats (community forest management) in managing forests. The presence of 12,089 van panchayats in Uttarakhand has tremendous potential, with the active involvement of local communities in the conservation and management of forests. The State REDD+ Action Plan, [when] implemented on the ground, would prove to be a game-changer for the payment of ecosystem services in the state.

R. B. S. Rawat
Former Principal Chief Conservator of Forests and Head of Forest Force,
Dehradun, Uttarakhand
(Member of the Expert Group for preparation of the Uttarakhand SRAP)

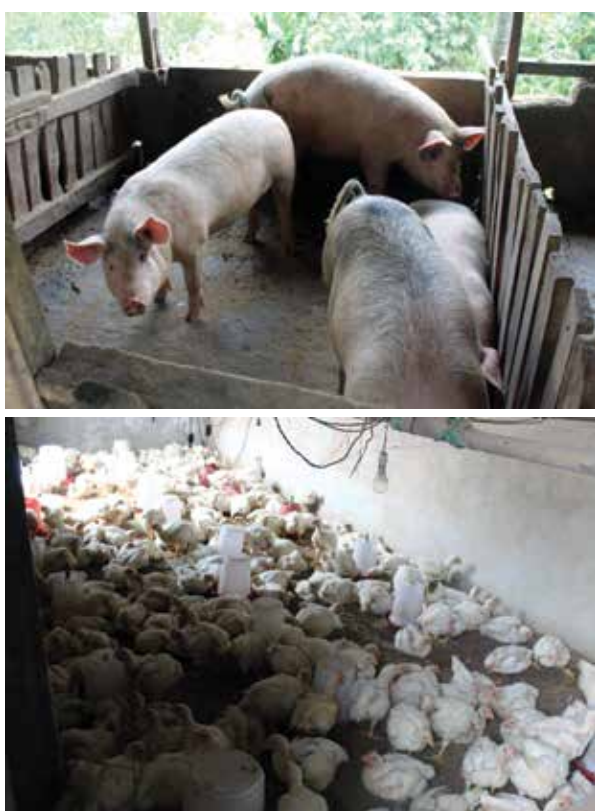
- **Direct drivers or causes of forest degradation:**
Overgrazing, unsustainable collection of fuelwood and fodder, forest fires, and the non-adoption of silvicultural practices
- **Barriers for improved forest management:**
Lack of a scientific approach to agroforestry and horticulture, and the unavailability or delayed availability of finance

The intervention packages and activities identified for the state of Uttarakhand include (Government of Uttarakhand, 2018):

- Effective implementation of forest laws/acts, and prescriptions of forest working plans
- Preparation of a comprehensive state land use plan
- Deforestation-free urbanization and establishment of other settlements
- Planning developmental activities in such a manner that they avoid biodiversity-rich areas (including areas with moist, broadleaved evergreen trees) and biodiversity hotspots
- Discouraging the felling of trees by incentivizing agroforestry and horticulture with modern agricultural technologies
- Sustainably managing the use of forest products and resources such as timber, NTFP, fuelwood, fodder collection, and grazing
- Prevention of forest fires with the provision of rewards
- Adaptation to extreme climatic conditions
- Simplified approaches to promote carbon enhancement activities.

The necessary activities, along with their estimated costs, have also been identified for implementation of the intervention packages in the both states. The states have five years for the implementation of the SRAPs. Foresters, policy makers, local communities, and other stakeholders in the states will benefit from the successful implementation of these REDD+ action plans. Additionally, to supplement information for the SRAP for Mizoram, two separate studies were carried out on identifying the drivers of deforestation and forest degradation (D&D) (Rawat et al., 2017) and strategies to address D&D drivers in the State of Mizoram (Rawat et al., 2018).

Preparing these SRAPs was a challenge due to the limited capacity of the stakeholders in preparing such plans. However, the orientation programme for preparing the SRAPs (organized by ICIMOD and ICFRE at Aizawl, Mizoram) as well as the actual processes of SRAP preparation have augmented these capacities of the concerned stakeholders in Mizoram and Uttarakhand. The experience and capacities of the main actors will be utilized further in preparing SRAPs for other states. They will also be deployed in implementing the identified intervention packages to address the drivers of deforestation and forest degradation in Mizoram and Uttarakhand, to avail of REDD+'s financial benefits.



In Mizoram, pig and poultry farming are major income-generating activities.

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ADDITIONAL INFORMATION

List of partners/donors who supported the work:

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2. International Centre for Integrated Mountain Development, Kathmandu, Nepal
3. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
4. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Republic of Germany
5. Department of Environment, Forest and Climate Change, Government of Mizoram
6. Forest Department, Government of Uttarakhand



Turmeric plants grow in a jhum field in Mizoram, India.

Mitigating *jhum* cultivation through REDD+ in Mizoram

R.S. Rawat, V.R.S. Rawat, Jaiyati Rawat, and M.Z. Singson

As per the *India State of Forest Report 2017*, the forest cover in Mizoram is spread over 18,186 sq km. However, when compared with the previous survey, *India State of Forest Report 2015*, a net decrease of 531 sq km is reported in the state (FSI, 2015; FSI, 2017). This decline is mainly due to *jhum* cultivation.

Jhum cultivation is an age-old farming practice followed in India's northeastern states. It is also known as shifting cultivation, or slash-and-burn agriculture. Under this method of farming, each household first clears a patch of forest. That patch is then burnt.

The burnt patch of forest land is used for the cultivation of varied crops, such as rice, tobacco, chillies, and vegetables.

Over time, the productivity of the piece of land diminishes, and it is then left fallow for some time. A new patch of land is then cleared and burnt each year for *jhum*. This unscientific farming system has resulted in deforestation, loss of soil and water, and the loss of indigenous biodiversity. *Jhum* cultivation is one of the main drivers of deforestation and forest degradation in Mizoram. However, it can be addressed through the implementation of REDD+.

In order to arrest the deforestation that occurs as a consequence of *jhum* cultivation, local communities were assisted and guided, through the REDD+ Himalaya programme, in adopting sustainable land management techniques and cropping patterns, accompanied by suitable, alternative income-generating activities. Training programmes were conducted to build the capacities of the local Mizo communities. Exposure visits and demonstration activities regarding permanent terrace farming were organized.

In addition, three documents—‘Drivers of deforestation and forest degradation in Mizoram’

(Rawat et al., 2017), Strategies for addressing the drivers of deforestation and forest degradation in Mizoram (Rawat et al., 2018) and the State REDD+ Action Plan for Mizoram (Government of Mizoram, 2018)—were developed for implementing REDD+ activities in the state. These documents are vital for playing the bridging role for implementing REDD+ at sub-national level (MoEFCC, 2018). The former proposed the following strategies to address the issue of *jhum* cultivation (Rawat et al. 2018):

- Promotion of terrace farming/settled farming
- Promotion of agroforestry/farm forestry
- Promotion of horticultural crops on homestead land
- Eco-restoration of shifting areas; and
- The sustainable management of forests and the conservation of biodiversity

The Mizoram SRAP was prepared by ICIMOD, ICFRE, and the Department of Environment, Forests and Climate Change, Government of Mizoram. It devised an intervention package on sustainable land management and cropping patterns to address the drivers of *jhum* cultivation. The SRAP includes the following strategies: (Government of Mizoram, 2018):

Adoption and expansion of settled terrace farming systems

- Promotion of horticultural crops for improved livelihood options
- Provision of income opportunities to farmers who practice shifting cultivation
- Community capacity-building and involvement in forest fire management
- Making alternative and sustainable energy accessible to local communities



Under *jhum* cultivation, patches of forest are cleared and then burnt.



Cleared forest land is used for agricultural purposes. Crops such as rice and tobacco, and a variety of vegetables are grown in *jhum* fields.

We want to settle into permanent cultivation. This would protect forests from degradation, which is also good for the village and its people.

C. Lalduhkima

Farmer, Reiek Village,
Mamit District, Mizoram

The villagers of Ailawng have been practising shifting cultivation. However, most of them now would like to leave this practice as the forests have been degrading and water sources drying up.

Muana

Village Council President, Ailawng Village, Mamit district, Mizoram

- Introduction and adoption of sustainable agricultural technology and models
- Demarcation of land for agriculture, forests, and agroforestry through the effective implementation of land use policies and economic development programmes

Both these will be the guiding documents to address *jhum* cultivation in the state of Mizoram. The intervention packages, with detailed activities and strategies identified in these two documents, will be implemented in convergence with existing programmes in order to address the issue.

REDD+ in Mamit District

The REDD+ Himalaya programme focused on two pilot project villages, Ailawng and Reiek, in Mamit district of Mizoram. In accordance with the suggested strategies, a number of measures have been implemented in two REDD+ pilot project villages. Demonstration plots of shaded



Once the productivity of *jhum* land diminishes, it is left fallow for some time.



A coffee plant nursery.



A solar drier installed at Reiek, a village in Mizoram.



A turmeric processing and cooking unit in Ailawng, Mizoram.



A shaded coffee plantation.

coffee plantations were established to create alternative income-generating activity for the local communities in the project area. These were also meant as a demonstration model that could showcase a type of permanent cultivation.

Second, farmers in the project area were provided a solar drier for drying raw turmeric and a turmeric processing unit so that the local communities can get a good price for turmeric, their main cash crop. Powdered turmeric can be sold for Rs 250/kg, which is about four times higher than the price one can get for raw turmeric. Such income generation through value addition will ultimately encourage local communities to adopt permanent types of cultivation in place of *jhum*. To encourage this process and build awareness among the local

people, exposure visits of members of the local communities to areas with permanent cultivation in the state of Meghalaya were organized.

Third, households were provided with improved cookstoves, which resulted in the reduction of fuelwood consumption per household from about 30 kg per day to merely 5–6 kg per day. In addition, due to improved cook stoves women benefited the most, as they saved their time for collecting fuelwood and resulting health improvement due to less smoke from the stove. Finally, they are able to give more time to other households work and family members.

Changing the mindset of local communities about the traditional *jhum* practice was a challenge. A number of awareness generation programmes and training programmes on REDD+ were organized for the local residents of Ailawng and Reiek. Efforts in the form of local consultation, training, and, as already stated, exposure visits and the establishment of demonstration plantations were made to generate awareness regarding permanent or settled cultivation techniques.

It is not possible, within the short, stipulated period of the pilot project, to accurately estimate the impacts of the project's interventions in terms of the percentage of people opting for permanent cultivation or the extent of the forest area that has avoided being burnt under *jhum* cultivation. However, it can be stated with confidence that the awareness of the local people regarding permanent cultivation has certainly been changing, and growing. Now, local communities in the REDD+ pilot project sites are more open to adopting permanent types of cultivation practices. Going by the perceptions of local communities in the project area, it is estimated that a large number of people will benefit from activities implemented under the REDD+ Himalaya project. This will also help in reducing the extent of shifting cultivation and will reduce the depletion of forest cover in the area.

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ADDITIONAL INFORMATION

List of partners/donors who supported the work:

1. Indian Council of Forestry Research and Education, Dehradun, India
2. Forest Research Centre for Bamboo and Rattan, Aizawl, India (an ICFRE Centre)
3. International Centre for Integrated Mountain Development, Kathmandu, Nepal
4. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
5. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Republic of Germany
6. Norwegian Ministry of Foreign Affairs
7. Department of Environment, Forests and Climate Change, Government of Mizoram



Thimphu, Bhutan's capital, is the largest city in the country.

SECTION 4

Bhutan

Lessons from the REDD+ Himalaya Project in carbon-negative Bhutan

Dorji Wangdi, Lobzang Dorji, Younten Phuntsho, and Kinley Dem

Bhutan has always placed the highest priority on environmental conservation despite being one of the least developed countries in South Asia. Its policies and plans are guided by the development philosophy of Gross National Happiness (GNH), which ensures that environmental sustainability is not undermined in the pursuit of economic development. However, an increasing population and infrastructure development pose grave threats to Bhutan's long history of environmental conservation and its international commitment to remaining carbon neutral. In the context of growing and irreparable damage from climate change being faced by the global community, the need for developing country-specific information to showcase Bhutan's environmental conservation efforts and the state of the country's carbon emissions and removals has become increasingly pertinent, indeed imperative. However, the lack of technical capacity and financial resources act as major stumbling blocks in our pursuit of this goal.

The REDD+ programme in Bhutan provides the necessary financial support for capacity-building, improving the knowledge base, and promoting sustainable forest management (SFM) through the establishment of a national forest monitoring system (NFMS), the development of forest reference levels, and the development of a holistic National REDD+ Strategy. The REDD+ Strategy will ensure that the benefits our communities enjoy from forests in the form of timber, non-timber forest products, and other ecosystem services at the national level, will be safeguarded.

Bhutan's greenhouse gas (GHG) emissions in 2000 were estimated to be approximately 1.2 million metric tonnes (mt) of CO₂-equivalent (CO₂eq) (NEC 2011) and 2.2 mt of CO₂eq in 2013 (NEC 2015). Carbon sequestration in Bhutan totalled 6.3 million tonnes of CO₂eq in 2000 (NEC 2015; NEC 2011). These estimates were generated using IPCC default values and formed the basis for validating our claims of carbon neutrality.

However, the forest inventory data available in Bhutan was limited to management-level inventory data such as that of forest management units (FMUs), constituting merely 5 per cent of the total forest cover. The Pre-Investment Survey (1974–1981), Bhutan's first and only field-based assessment, focused on assessing timber resources for the development of forest-based enterprises. A more comprehensive study of forest resources, including forest carbon, was deemed necessary.

Towards this end, Bhutan initiated the first comprehensive National Forest Inventory (NFI) in

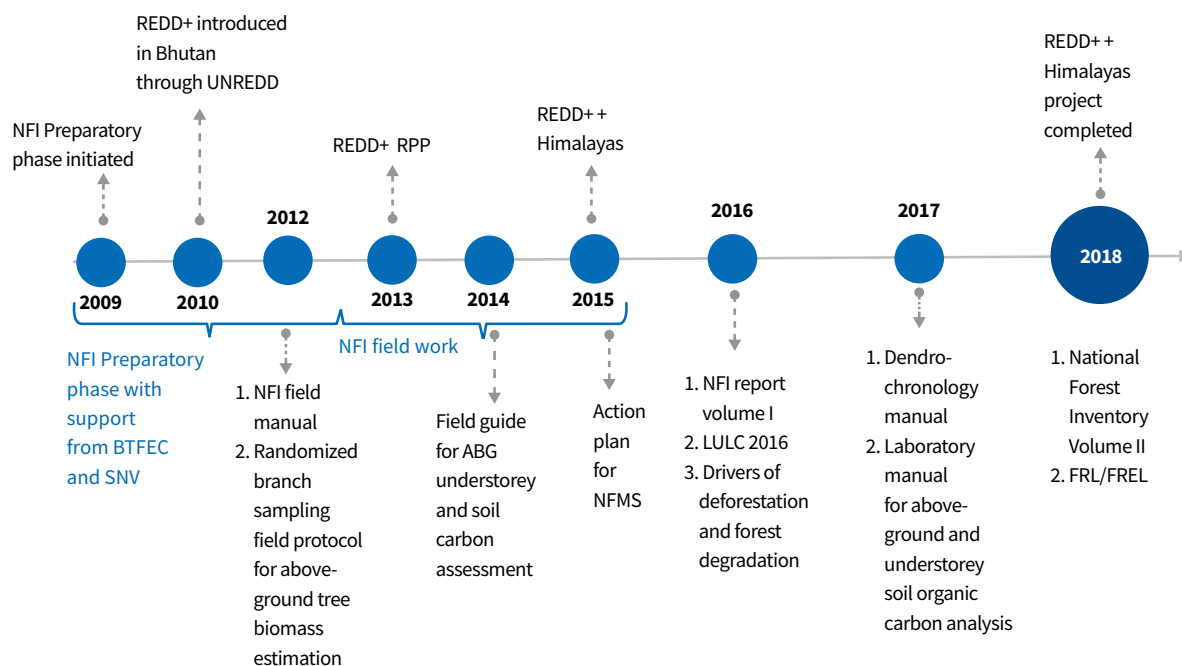
2009, whose preparatory phase extended until mid-2012, followed by an implementation phase. The NFI is not limited to traditional forest parameters such as height, basal area, and volume, but also provides information on biomass, carbon stock, forest health, wildlife, species diversity, and increment. Twenty per cent of the total accessible sampling plots of the NFI were systematically sampled for forest understory and soil carbon assessment.

Capacity-building under the REDD+ Himalaya Project

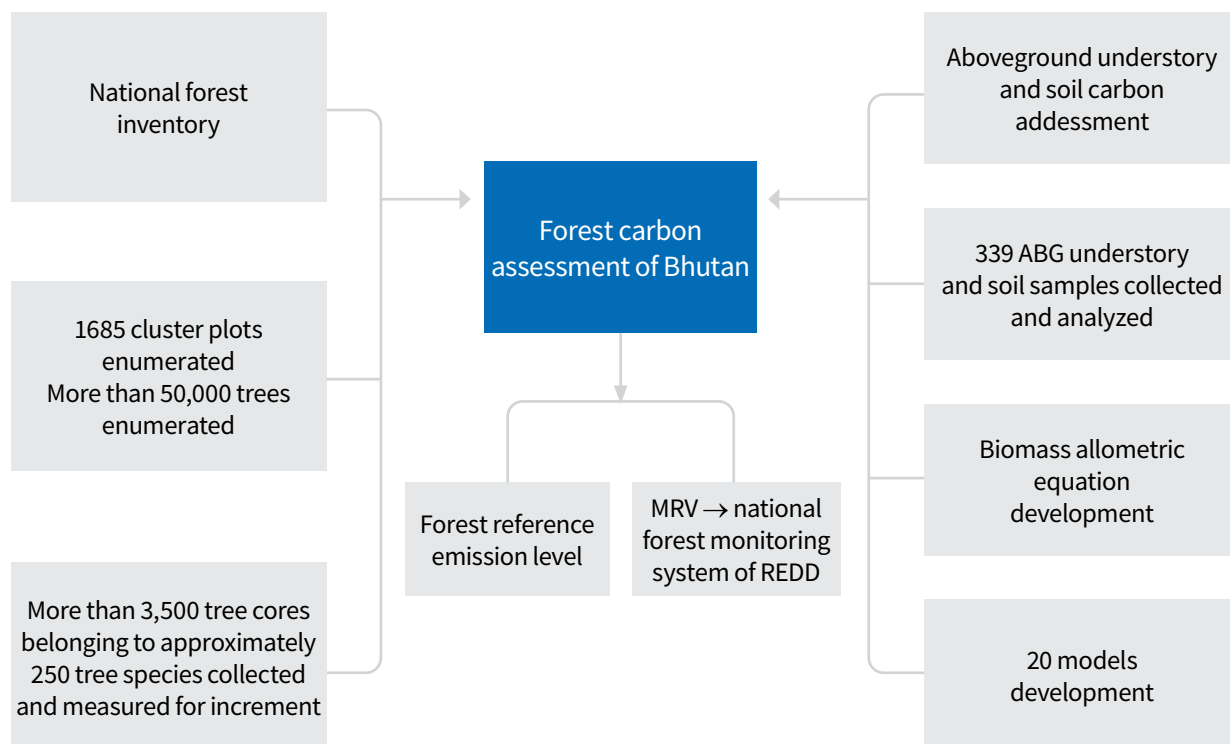
The REDD+ Himalaya Project was initiated in Bhutan in 2015 (Figure 4), and was designed to complement Bhutan's REDD+ readiness programme. It provided support mainly in NFI and forest carbon data collection, the development of biomass estimation equations, capacity-building of agencies involved in the data collection and analysis exercises, and in the establishment of a database management system. Besides such capacity-building, the REDD+ Himalaya Project achieved other specific outcomes in Bhutan, such as empowering local communities to participate in REDD+ activities, and documenting and communicating the relevant information regarding the NFI, forest biomass, and forest carbon. We briefly elaborate on some of these outcomes below.

The REDD+ Himalaya Project helped build capacities in different institutions and at different levels (Figure 5). The project helped strengthen technical capacities of the Soil and Plant Analytical Laboratory (SPAL) and the Research Development Centre (Yusipang), now under the Ugyen Wangchuck Institute of Conservation and Environmental Research (UWICER), Thimpu. It helped aid infrastructure development in the form of laboratory equipment. The SPAL carried out laboratory analysis of soil organic carbon, litter, and understory aboveground carbon. Staff from UWICER were trained regarding the development of biomass allometric equations for the computation of the carbon stock in the country. Twenty-two biomass allometric equations were developed in collaboration with UWICER, and 16 of them were used in the computation of Bhutan's carbon stock.

Further, the capacities of the Department of Forest and Park Services have been enhanced regarding data collection, data processing, analysis, report writing, and biomass mapping at pilot sites. The staff from the Forest Resources Management Division (FRMD) received training in data analysis for the development of the National Forest Inventory

FIGURE 4
TIMELINE FOR NFI AND THE REDD+ HIMALAYA PROJECT IN BHUTAN


Source: FRMD

FIGURE 5
THE REDD+ HIMALAYA CAPACITY BUILDING PROJECT: SUPPORTING REDD READINESS IN BHUTAN


Modified from: http://lib.icimod.org/record/33858/files/icimod1062_REDD+.pdf



Training and field demonstration on the use of instruments.

and the Forest Reference Level/Forest Reference Emission Level (FRL/FREL), benchmarks against which future performance in implementing REDD+ activities can be assessed.

Bhutan, a carbon-negative country

Bhutan reported a total forest carbon stock of 709 million tonnes, comprising aboveground biomass carbon, belowground biomass carbon, dead organic matter (litter and coarse, woody debris), and soil organic carbon. This includes 521 million tonnes of carbon from its forests (FRMD 2018). The forest carbon data used for generating the emission factor, along with the activity data generated from the wall-to-wall land use map downscaled from the global forest cover, were used to prepare the FRL/FREL. The FRL/FREL has been endorsed by the Royal Government of Bhutan and will be submitted

to the UNFCCC's focal agency in Bhutan for onward submission to the UNFCCC for a technical assessment.

The results of the NFI have also been used for developing a greenhouse gas inventory, the National REDD+ Strategy, Forest Resources Assessment (FRA), and other policies and plans. The net carbon sequestration rate is estimated at 8.714 million tCO₂eq/year in the forestry sector (DoFPS 2018), compared to total emissions of 2.6 million tCO₂eq / year (NEC 2015) from industries, waste, energy, transport, and agriculture, forests, and other land use sectors. This information reaffirms that the forests of Bhutan remove from the atmosphere almost four times as much carbon as the country emits, and hence the country is indeed carbon negative.

Lessons learnt

Investment in capacity-building showed positive impacts at both the national and local levels, in terms of data collection, data analysis, and, in some specific areas, regression modelling. This capacity-building is very likely sustainable as all the activities are implemented by a government official with technical help from partner agencies when required.

In the implementation of REDD+ programmes, the generation of the National Forest Inventory, including the carbon analysis, was in itself a huge learning process. The implementation of NFI, despite limited financial resources, technical capacities, and the challenging mountainous terrain and geographical area, can be regarded as a great success. This exercise was executed in its entirety



Carrying out field inventory.



An NFI team en route to a pilot site.



An NFI team uses maps and GPS to navigate in the field.

by Bhutanese, albeit with technical support from the FAO, Yale University, the US Forest Service, the University of Washington, and ICIMOD.

The National Forest Inventory, details about the process and the success of the carbon analysis, the field guide and manuals for the implementation of the NFI fieldwork have all been published and documented for future reference and the sustainability of the programme (www.dofps.gov.bt). The capacity built through the REDD+ Himalaya Project in the implementation of the NFI and the documentation of the process shall serve as a knowledge bank and aid the implementation of the second phase of the NFI.

Key highlights

1. **Funding sources:** Bhutan started its NFI with no secure funding sources, which was a huge challenge considering the constraint of other developmental priorities for a least developed country. Carrying out the NFI was an expensive exercise, in terms of both financial and human resources. The NFI data collection, analysis, and reporting necessitated huge costs in terms of strengthening the laboratory infrastructure and building technical capacities at different levels. The outstanding achievement/results delivered in the initial phase of NFI—besides delivering expected project outcomes on time—played a significant role in fund mobilization as many
2. For the future as well, it is of utmost importance to deliver expected outcomes and outputs on time for a sustained flow of support from donors and other partner agencies.
3. **Human resources:** When the NFI was initiated in 2009, Bhutan did not have the technical know-how either. Since FRMD is a functional division with no field staff, it was difficult to pull out huge numbers of field crew from the territorial division and parks. Further, the limited technical capacity of the field staff in terms of data collection, cleansing, and analysis was another major hurdle. Keeping the field crews motivated at all times was also a major challenge especially in a country like Bhutan, where the difficult terrain and topography made most plots difficult to access.
4. The REDD+ Himalaya Project mainly helped strengthen the technical capacity of the UWICER and SPAL and kept the crews motivated through trainings and study visits. The project also supported capacity-building in the Department of Forests and Park Services (DoFPS) regarding the establishment of FREL, the use of Open Foris Collect, Open Foris Calc, and Quality Assurance and Quality Control (QA/QC). These capacities developed within the department shall come in useful during the next phase of the NFI and carbon data collection.

NFI and the establishment of FRL/FREL by the Bhutanese with country-specific information is one of a kind and a great achievement for the country. The infrastructure, and more importantly the capacity built through the process, shall be used effectively for the next NFI

Forest Resources Management Division

Given all the challenges during the first NFI, proper planning at the outset of the fieldwork was found to be very important, and addressing the limited human resources recognized as one of the key issues. Therefore, decentralization of the data collection and data management is very crucial. Monitoring the data collection (hot checks) would be very important and the ownership of the data collected must be given to those involved in collecting the data. Integrating this programme into mainstream plans and programmes will also provide the platform for instituting it on a sustainable basis.

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ADDITIONAL INFORMATION

1. Partners

Financial support: RGoB, BTFEC, R-PP, FAO, UNREDD_TS, BMUB through ICIMOD, GIZ and EU_TCP Technical support:

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2. U. S. Forest Service, USDA
3. Yale University
4. University of Washington
5. Royal Government of Bhutan
6. Ugyen Wangchuck Institute for Conservation, Environment and Research
7. Soil and Plant Analytical Laboratory, National Soil Service Centre, Department of Agriculture, Royal Government of Bhutan

2. Important Links

1. Department of Forests and Park Services
2. Bhutan REDD+ Secretariat
3. Ministry of Agriculture and Forests
4. National Environment Commission



Goat keeping has helped bolster family incomes in the HKH.

SECTION 5

Myanmar

Establishing and revitalizing community forests in Shan State

Thaung Naing Oo and Inkyin Khaine

Shan State, located in eastern Myanmar, is the largest among the fifteen regions/states of the country, and one in which the agricultural sector dominates. A number of ethnic groups living in the state depend heavily on agricultural practices for their livelihood. Most people also rely on the forests for many of their basic needs because of poverty and limited job opportunities outside agriculture. However, little attention has been paid to forest conservation hitherto, and motivating and encouraging people to engage in forest conservation in Shan State has been a challenge. Essentially, collective social factors such as poverty, unsustainable agricultural practices, limited income opportunities, and the lack of awareness about ecosystem services provided by the forests have all contributed to deforestation and forest degradation in Shan State.

The establishment of community forests (CF) is the most suitable alternative approach, not only for the conservation of forests but also for meeting the resource and livelihoods needs of local people. Establishing community forests has another advantage. A village or a community will not be greatly interested in conserving and protecting natural forests, or establishing plantations, if they do not have clear and secure rights to the property and its management in the long term. Community forests also address that concern.

Myanmar has set an overall community forest target, to establish them over 2.27 million acres (918,636 hectares) between 2000–2001 to 2030–31. In an attempt at meeting the target and increasing forest cover, the Forest Department has been promoting community forestry programmes all over the country, including in Shan State, ever since the Community Forestry Instruction (CFI) was issued in 1995. As of 2018, according to data from the Myanmar Forest Department, 218,530 hectares of forest land (or 2,185.3 sq km) were being managed by 3,965 community forest user groups, comprising 106,074 households. The Forest Department has been implementing community forestry projects in collaboration with local NGOs as well as international organizations. Among its initiatives is ICIMOD's REDD+ Himalaya Project in Shan State.

Interventions under the REDD+ Himalaya Project

Under the three-year project, many activities were organized and implemented with inclusive participation in forest conservation and reforestation, significantly, in community forests. First, to further the active and effective participation of local people, the Forest Department/ministry organized a series of public talks as part of a knowledge-sharing and awareness-



A Burmese man harvests sap from a palm tree which is later fermented into palm wine.

raising campaign that dealt with the vital role of forests for human beings and innumerable other living creatures.

Successful community forestry programmes enable communities to manage their forests by themselves in a sustainable manner. Thus, second, there were training sessions organized regarding community forest development, planting techniques, nursery operations, community forestry procedures, and plantation silviculture. People were involved in tree-planting campaigns at the project sites to draw attention to forests and willingness to develop CF. In other words, the local people grabbed at the chance of community participation in decision-making processes, to promote the conservation and protection of their forest resources through CF.

Permanent forest nurseries were established in the villages for the sustainable production of good quality seedlings. Moreover, seedlings and other materials for planting were also provided in the pilot sites under the REDD+ Himalaya project. As discussed below, two new CFs were established at project sites and two villages received CF certificates to that effect.

Third, since the socioeconomic condition of local communities is a key factor in developing successful community forests in the long term, the REDD+ Himalaya Project provided training in, and supported the development of local livelihood opportunities such as bamboo-based handicrafts, market networking, etc.

There are a number of community forestry enterprises (CFEs) in Shan State. Examples of these are enterprises that engage in community-based tourism (CBT) and community-based coffee production in Nyaung Shwe and Ywa-ngan townships, respectively. The REDD+ Himalaya Project introduced the concept of community-based tourism to local communities in the project areas through cross visits to successful CBT villages in other areas. Local communities in the project areas are now interested in and are preparing to start community-based tourism. Furthermore, meetings and workshops were also organized for sharing their knowledge and experience with each other, for successful community forestry and sustainable livelihoods.

One of the major achievements of the project is the manner in which it has increased the confidence and strengthened the abilities of local people in Shan State in responding to the challenges and opportunities for the establishment and long-term



An SRAP orientation training for personnel from Myanmar's forestry department.

development of community forests. This is an outcome of their having participated in trainings regarding awareness-raising, community forest and livelihood development, cross visits to successful community forests, and the establishment of the forest nursery.

Tangible gains and lessons learnt

In more tangible terms, a significant achievement is the establishment of two new community forests in the pilot project areas: Sha Pyar CF (extending over 46.17 acres, or 18.70 ha) and Nan Kone CF (98.14 acres, or 39.72 ha). Two villages were awarded CF certificates in October 2017 for this achievement. Moreover, the revitalization of 'Pway Hla CF' (133.35 acres, or 53.96 ha) was carried out under the project.

With the support of the REDD+ Himalaya project, the local people in Shan State now possess certificates concerning their access to community forest lands. It is a good model for other villages around the project sites to follow. Such achievements also support the national community forestry programme effectively. Changing their attitudes regarding forests, and their active participation, also plays a key role in contributing to sustainable forest management under REDD+. A report, 'Study on benefit sharing in community forests to inform REDD+ consideration in Myanmar', has been published to support REDD+ benefit-sharing mechanisms (<https://www.forestdepartment.gov.mm>).

Ensuring the active and full participation of local people was the main difficulty in implementing REDD+ activities as well as CF, because of their limited knowledge about CF and forest conservation at the start of the project. To overcome this, the various measures that have been discussed—public talks, the knowledge-sharing and awareness

Community forestry is the one of the most important approaches not only to achieve the sustainability of forest resources but also to cover social, economic, and conservation dimensions in a range of activities, including decentralized and devolved forest management, smallholder forestry schemes, community–company partnerships, small-scale forest-based enterprises, and indigenous management of sacred sites of cultural importance.

Kyaw Kyaw Lwin

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Deputy Director General, Forest Department, Myanmar

raising campaign, tree-planting campaigns, setting demonstration sites, working together to establish new CFs—were done step-by-step. The following important lessons we learnt from the process in Shan State are relevant for successfully establishing community forests:

- Active participation and a clear understanding of community forests is necessary.
- Reaching out to local people to get all households in a village involved in CF work and management is essential for the sustainability of community forests.
- Community forestry should be implemented by involving local people in the decision-making process.
- Income and job opportunities for the locals are key.

- The development of livelihoods for local people is essential for ensuring the success of community forestry programmes. From this and the above it can be generalized that instruction in community forestry alone is not sufficient to ensure sustainable community forestry. It is essential that local people be provided some motivation to participate actively in the establishment of community forests.
- Community capacity should be strengthened in a sustainable manner.
- Policies, laws, rules, and regulations of community forestry regarding the tenure of indigenous people over the forests should be strengthened. Effective knowledge-sharing and awareness-raising activities are necessary but not sufficient. The secure rights to land/property and management are also needed and play a vital role in the future development of community forestry.
- For the successful and sustainable implementation of community forestry, the government, NGOs, and INGOs should provide technical and financial assistance to the local people.
- It is also necessary for the local communities to establish an effective communication system between concerned department officials and staff, agencies, groups, and the local people.

ADDITIONAL INFORMATION

List of all partners and/or donors who supported the work:

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2. International Centre for Integrated Mountain Development, Kathmandu, Nepal
3. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
4. Forest Department, Ministry of Natural Resources and Environmental Conservation, Myanmar
5. Shan State Forest Department, Forest Department, Ministry of Natural Resources and Environmental Conservation, Myanmar



Forest restoration has taken place at various sites in Myanmar.

Different facets of the REDD+ Initiative in Shan State

Thaung Naing Oo and Inkyin Khaine

REDD+ is a mechanism under the UNFCCC to mitigate climate change by incentivizing the reduction of greenhouse gas emissions from deforestation and forest degradation, while fostering forest conservation, sustainable forest management, and carbon enhancement. The Republic of the Union of Myanmar, located in South East Asia, is a developing country with diverse forests that cover 42.92% of the country's total area (FRA 2015). The Government of Myanmar has long recognized the potential of REDD+ in climate change regulation. In July 2013, the Ministry of Environmental Conservation and Forestry published the *Myanmar REDD+ Readiness Roadmap* (MoECF 2013). A draft National REDD+ Strategy has been developed and revised through a series of consultations with experts from different sectors, members of different technical working groups, and also, significantly, representatives of indigenous communities. The process was opened up for public comments, to be taken into consideration. The National REDD+ Strategy currently identifies over fifty Policies and Measures (PAMs).

Among the other key elements, an action plan of the National Forest Monitoring System has been developed and implemented since 2016. The Forest Reference Emission Level was identified and has been submitted to UNFCCC in 2018. Regarding a Safeguard Information System, a safeguards roadmap has been developed and the risks and benefits of PAMs have been assessed. The clarification of safeguards based on a risks and benefits analysis of PAMs and a revision of the draft National REDD+ Strategy and REDD+ Policy and Measures are currently in the progress. More detailed information about this process can be found on the website <http://www.myanmar-redd.org/>.

Basic outline inputs such as the prioritization and analysis of the drivers of deforestation and forest degradation, the problem and solution tree analyses of those drivers, and defining PAMs constitute the core aspects of the REDD+ process and the development of the National REDD+ Strategy in Myanmar. Consultations with many stakeholders and experts are still ongoing as the National REDD+ Strategy is still being developed. Although Myanmar is clearly still in phase I of the REDD+ process, this and the other three phases are not mutually exclusive. Hence, some relevant policies and measures can be implemented in parallel.

However, one key hurdle in ensuring the effectiveness of REDD+ is the weak understanding

of REDD+-related matters. There is hence still the need to fine-tune the national REDD+ strategy through a regional-scale assessment. Therefore, it is important to conduct REDD+ activities at the subnational/regional scale, and thereby support the national REDD+ strategy by identifying the major drivers and information gaps and through capacity development. Which is why the REDD+ Himalaya Project in Shan State in Myanmar becomes significant.

The REDD+ Himalaya Project in Shan State

Shan State, situated in eastern Myanmar, is home to a number of indigenous ethnic groups, such as Taung Yoe, Pa-ot and Da-nu. It has one of the highest rates of deforestation in Myanmar (FRA 2015). It has been estimated that, over the period 2005–2015, Shan State alone emitted 6.86 million tonnes of carbon dioxide from deforestation and forest degradation (Myint n.d., p. 1)

Most people in Shan State have limited knowledge and awareness about REDD+ activities, and there was no specific project that focused on Shan State alone. Therefore, the REDD+ Himalaya Project, which was initiated in 2016, contributed to much-needed awareness-building and capacity development in Shan State, and helped identify and fill the gaps that would strengthen and support the national REDD+ strategies in Myanmar. The project also enabled the identification of the major drivers of deforestation and forest degradation in Shan State.

We discuss those drivers first, followed by brief subsections on the presentation of the project's outcomes through the generation of knowledge products, and finally, the project's awareness-raising and capacity-development activities.



Community members get together to restore a forest in Shan State, Myanmar.



Shifting cultivation in Myanmar.

IDENTIFYING AND ADDRESSING THE DRIVERS OF DEFORESTATION

An important report highlighted agricultural expansion, shifting cultivation, the overexploitation of timber, and fuelwood consumption as the major drivers of deforestation and forest degradation in Shan State (Myint, n.d.) A number of strategic options for addressing those drivers have been suggested:

- Making the National Land Use Policy effective across the country.
- Compensating relevant land plot for the permission of development projects within Permanent Forest Estate (PFE) areas.
- Site selection and allotment should be done with the comment of the Forest Department.
- Introducing high-yielding crop varieties and farming systems and distributing high-yielding varieties of seeds and seedlings.
- Cutting trees outside the PFE must be taxed by the Forest Department (or all relevant line departments).
- Introducing agroforestry with the support of perennial crop seedlings.
- Introducing sustainable and climate-smart agricultural practices, including the stabilization of shifting cultivation.

- Establishing community forestry.
- Establishing private forest plantations.
- Establishing model farming (integrated farming practices).
- Practising reduced impact logging, and logging below the Annual Allowable Cut (AAC).
- Poverty reduction, ending hunger, assuring food security, and fulfilling basic needs.
- Awareness-raising of and law enforcement within local communities
- Promoting sustainable fuelwood and charcoal consumption.
- Promoting and distributing efficient stoves.
- Job creation for local communities, including community-based tourism, community-based coffee production, community-based bamboo handicraft manufacturing, etc.

KNOWLEDGE PRODUCTS

As evidence of the results or outcomes under this project, different kinds of knowledge products pertaining to forests and sustainable forest management, sustainable cities, forests and water, and forests and energy have been produced, and the following reports published. Nearly all of these can be retrieved from the website of the Forest Department (Forest Department n.d.):

Identification of the major drivers of deforestation and forest degradation is crucial and collective efforts to address these problems are essential for the successful implementation of REDD+. We recognize that REDD+ is an innovative concept and a mechanism to create an incentive for forest-rich developing countries, including Myanmar, to protect, better manage, and wisely use their forest resources, contributing to the global fight against climate change.

Thaung Naing Oo

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- Gap analysis in line with the National REDD+ readiness process in Shan State, Myanmar.
- Analysis of drivers of deforestation and forest degradation in Shan State and strategic options to address those.
- Report on Assessment of Plant Species Diversity and Wildlife in Pindaya Township, Shan State, Myanmar.
- Study on benefit sharing in community forests to inform REDD+ consideration in Myanmar.
- Proceedings of the regional workshop on role of REDD+ in supporting SDGs and NDCs.
- Stock Taking Report on FPIC, Biodiversity, and SESA under REDD+ Himalayas
- Capacity Building Needs Assessment of REDD+ in Myanmar
- Building Timber Value Chains for REDD+: The timber value in Myanmar and its compatibility with REDD+.

The findings from the project are subnational level-based results, and thus support the revision of the draft national REDD+ strategies, providing the required information on drivers of deforestation and degradation, livelihood development options, and the current gaps in REDD+ readiness processes. The State REDD+ Action Plan (SRAP) for Shan State, with intervention packages that could address the drivers of deforestation and forest degradation and the barriers of carbon enhancement has also been developed under the REDD+ Himalaya project.

AWARENESS BUILDING AND CAPACITY DEVELOPMENT

One of the key outcomes of the REDD+ Himalaya Project in Shan State is the development of the REDD+ initiative at the state/regional, or subnational scale, through the establishment of demonstration sites, capacity development programmes, and community forestry.

It was initially found that the knowledge and awareness of local people regarding the concept of REDD+ and its activities was poor in this region. Unsustainable agricultural practices and limited knowledge about forest conservation constituted challenges in the implementation of REDD+ in Shan State. To overcome these challenges, awareness-raising and knowledge-sharing regarding REDD+ activities, environmental impact assessment, and forest conservation took place. Participatory tree-planting campaigns were organized. Specific programmes promoting the establishment and revitalization of community

forests and agroforestry were conducted for the local people, including the Taung Yoe, Pa-ot and Da-nu ethnic groups. The project promoted awareness and capacity development about REDD+ through demonstrations, training, cross visits, and livelihood development courses. Some of this has been discussed in more detail in the preceding chapter.

Keeping in mind future generations, awareness-raising training for the youth about REDD+, and climate change and the role of forests was organized under the REDD+ Himalaya Project. It imparted capacity-building training on Free, Prior, and Informed Consent (FPIC), Strategic Environmental and Social Assessment (SESA), and biodiversity conservation. Gender considerations were incorporated in a number of the project's activities. The project organized stakeholder consultation meetings, and training regarding bamboo-based handicraft production, and distributed efficient cooking stoves in the context of REDD+ safeguards for society and the environment. The cross visits to different areas, including Nepal, to learn how communities elsewhere manage community forests sustainably have proved to be very useful for local communities, and effective. Now the local people in the project site are participating actively in various REDD+ activities. They want to develop community forests and have developed an interest in agroforestry. One could briefly conclude by stating that the REDD+ Himalaya Project in Shan State enabled REDD+ activities to be conducted at the subnational scale, and furthered Myanmar's national REDD+ strategy by highlighting the major drivers of deforestation and forest degradation, identifying information gaps, and promoting awareness and capacity development.

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ADDITIONAL INFORMATION

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2. International Centre for Integrated Mountain Development, Kathmandu, Nepal
3. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany
4. Forest Department, Ministry of Natural Resources and Environmental Conservation, Myanmar
5. Shan State Forest Department, Forest Department, Ministry of Natural Resources and Environmental Conservation, Myanmar



A spotted deer (*Axis axis*) with a pair of common myna (*Acridotheres tristis*) perched atop its back and antler.



Forest and river systems are intrinsically connected.

SECTION 6

Conclusion



With 71% of its area covered by forests, Bhutan has the highest percentage of forest cover in the world.

The stories in this report capture the experiences of people closely engaged in the REDD+ process in four countries in the region – Nepal, India, Bhutan, and Myanmar. These experiences, as well as best practices and lessons learnt, can be beneficial for the further development of REDD+ approaches by the four countries. Moreover, the stories will be useful for other countries who have recently participated in REDD+ processes, especially if they can adapt the best practices relevant to their country context. For countries aiming to participate in the REDD+ mechanism under the UNFCCC, the development of four elements is necessary: a national strategy and/or action plan; a national forest reference level, as a baseline to measure the results of REDD+ activities; a national forest monitoring system, for the monitoring and reporting of REDD+ activities; and a system for information on how REDD+ social and environmental safeguards are being met during the implementation of the activities. Each success story included here sheds light on the lessons and achievements in developing one or more of these four elements.

The benefits derived have been varied, depending on context and where each country has reached in its REDD+ trajectory. In Nepal, the REDD+ Himalaya programme has contributed to considerable awareness-raising and capacity-building at the

subnational level, and underlined the importance of a multi-stakeholder approach. In Mizoram, communities in two pilot villages are beginning to shift from *jhum* cultivation towards settled agriculture, which will lead to reduced deforestation over time. In Bhutan, the process of carrying out a National Forestry Inventory involved considerable capacity-building, which can be sustained and which they will continue to benefit from in the future. Shan State in Myanmar has witnessed the establishment and revitalization of community forests, with communities in pilot sites gaining CF certificates.

While the six success stories appear to deal with different elements, the stories also show that the four countries faced certain common challenges in their efforts to develop these elements. In particular, they all mention the importance of capacity development, not only at the national level but also at the local level, and motivating local people to get engaged in the process. The experiences of these four countries underline the significance of a strategic approach to stakeholder involvement for effective and efficient REDD+ implementation. It is hoped that these success stories and lessons learnt will be valuable to relevant REDD+ stakeholders in establishing effective REDD+ mechanisms in the region and beyond.

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About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD), is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalaya – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.

REGIONAL MEMBER COUNTRIES



About GIZ

Nepal is a priority country for German Development Cooperation. As a federally owned agency, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) supports the German Government in achieving its objectives in international cooperation for sustainable development. GIZ and its predecessor agencies have been active in Nepal since the 1970s.

In Nepal, GIZ mainly works on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), but also other German ministries, namely German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

GIZ supports the Nepal Government and civil society organizations in the implementation of different projects in the following priority sectors:

- Promotion of Sustainable Economic Development
- Health
- Renewable Energy and Energy Efficiency

Additionally, support is also provided in the areas of Local Governance, Peace Building through Civil Peace Service and a regional program on Reduction of Emissions from Deforestation and Forest Degradation (REDD+).

GIZ Nepal employs over 160 national and international staff, who work closely with partner organizations and in many cases they are directly based in government institutions and civil society organizations. GIZ coordinates its work closely with bilateral and multilateral partners.

giz Deutsche Gesellschaft
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Zusammenarbeit (GIZ) GmbH

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

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