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NEPAL LAND AND NATURAL RESOURCE TENURE ASSESSMENT FOR PROPOSED EMISSION REDUCTIONS PROGRAM IN THE TERAI ARC LANDSCAPE

TENURE AND GLOBAL CLIMATE CHANGE (TGCC) PROGRAM

NOVEMBER 2016

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ACRONYMS AND ABBREVIATIONS

ACOFUN	Association of Collaborative Forest Users Nepal
ANSAB	Asia Network for Sustainable Agriculture and Bioresources
APLFUN	Association of Terai Public Land Forest Users Network
BISEP-ST	Biodiversity Sector Programme – Sivaliks and Terai
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
CF	Community Forestry
CoF	Collaborative Forest
CFUG	Community Forestry User Group
CIAA	Commission for the Investigation of the Abuse of Authority
COFSUN	Community-based Forestry Supporters Network, Nepal
CSO	civil society organization
dalit	oppressed person (previously considered "untouchable" within Hindu caste hierarchy)
DDC	District Development Committee
DFCC	District Forest Coordination Committee
DFID	United Kingdom Department for International Development
DFO	District Forest Office
DFOF	District Forest Officer
DNPWC	Department of National Parks and Wildlife Conservation
DoF	Department of Forests
ER	Emission Reductions
ERPA	Emission Reductions Program Agreement
ERPAA	Emission Reductions Program Accounting Area
ER-PIN	Emission Reductions Program Idea Note
FECOFUN	Federation of Community Forestry Users, Nepal
FCPF	Forest Carbon Partnership Facility
FRA	Forest Resource Assessment

FSS	Forest Sector Strategy
GMF	Government-Managed Forest
GoN	Government of Nepal
Ha	hectare
HBP	Hariyo Ban Program
HIMAWANTI	Himalayan Grassroots Women's Natural Resource Management Association
ICIMOD	International Centre for Integrated Mountain Development
IFAD	International Fund for Agriculture Development
IP	Indigenous People
janajati	indigenous (Nepali term)
LFP	Livelihoods and Forestry Program
LFUG	Leasehold Forestry User Group
LHF	Leasehold Forest
LSGA	Local Self-Governance Act
MF	Methodological Framework
MoFSC	Ministry of Forests and Soil Conservation
MoSTE	Ministry of Science, Technology and Environment
MPFS	Master Plan for Forest Sector
MSFP	Multi-Stakeholder Forestry Program
NEFIN	Nepal Federation of Indigenous Nationalities
NGO	Nongovernmental Organization
NPWC	National Park and Wildlife Conservation
NSCFP	Nepal Swiss Community Forestry Program
NTFP	non-timber forest product
NTNC	National Trust for Nature Conservation
PA	Protected Area
PD	Program Document
PILM	Public and Institutional Land Management
PF	Protected Forest
PLF	Public Lands Forest
PRF	Private Forest
PROFOR	Program on Forests

RECOFTC	Center for People and Forests
REDD+	Reducing Emissions from Deforestation and Degradation, plus the role of conservation, sustainable forest management and enhancement of forest carbon stocks
RF	Religious Forest
RIC	REDD+ Implementation Centre
R-PP	Readiness Preparation Proposal
SDC	Swiss Agency for Development and Cooperation
SESA	Strategic Environmental and Social Assessment
SNV	Netherlands Development Organization
TAL	Terai Arc Landscape
TCN	Timber Corporation of Nepal
UNFCCC	United Nations Framework Convention on Climate Change
VDC	Village Development Committee
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests
WWF Nepal	World Wildlife Fund Nepal
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Nepal's Emission Reductions Program Idea Note (ER-PIN) to the Forest Carbon Partnership Facility's Carbon Fund was among the first to be accepted in April 2014. The Carbon Fund's Methodological Framework (MF) provides guidance to countries on both the development of proposals and the implementation of REDD+ programs so that fund requirements can be met and regular reviews facilitated (FCPF, 2013). Criteria 28 and 36 of the MF focus on land and natural resource tenure concerns, and the ability of a national entity to sell carbon credits to the Carbon Fund respectively. This assessment of the present status of Nepal's land and natural resource tenure within the Emission Reductions Program Accounting Area (ERPAA), that forms part of the Terai Arc Landscape (TAL), has been prepared in order to support Nepal's REDD+ Implementation Centre (RIC, previously called the REDD+ Cell) in developing its ER Program design. Based on this assessment, the report provides a set of recommendations for Criteria 28 and 36.

OBJECTIVES OF THE ASSESSMENT

Understanding the current status of land and natural resource tenure rights forms part of the MF's Criterion 28 in the section on Sustainable Program Design and Implementation because tenure conditions will have multiple impacts on REDD+ initiatives. Tenure over natural resources refers to the social relations, institutions, and rules that govern people's access to and use of land and natural resources. Natural resource tenure, therefore, determines who is allowed to use which resources, in what way, for how long, and under what conditions, as well as who is entitled to transfer rights to others and how. Secure tenure rights play a key role in weakening the drivers behind deforestation and degradation, improving forest condition and cover, guiding effective development of safeguard measures, informing equitable benefit sharing plans, and determining responsibility for reversals. Secure land and natural resource tenure can therefore provide the enabling conditions (preconditions or factors that promote positive transformations) for successful REDD+ design and implementation. In addition, Criterion 36 of the MF on transfer of Title to ERs to the Carbon Fund helps to establish clear ownership of the carbon credits in order to ensure smooth transfer to the Carbon Fund while respecting the existing land and natural resource tenure rights of rights holders.

RECOMMENDATIONS FOR PROPOSED EMISSION REDUCTIONS PROGRAM IN TERAI ARC LANDSCAPE

FOREST TENURE DEVOLUTION IN THE ERPAA

Nepal's ER-PIN is among the new jurisdictional REDD+ initiatives currently being developed around the world. By comparison with project-based REDD+, the idea note presents significant challenges: ensuring that national policy and legal structures provide support for a sequential rollout of the ER Program and designing and implementing interventions across a large landscape that transects numerous administrative districts. Building national long-term commitment, coordinating among multiple stakeholders, and developing tools for conciliating between multiple development and environmental objectives are all individually substantial endeavors. By working with a range of stakeholders across a diversity of land-use types, jurisdictional REDD+ aims for an integrated approach that can be promoted as a model for national implementation.

The issue of incentives needs to be examined through a range of regulatory, institutional, and market-based approaches, including forest and land tenure frameworks as the primary institutional form that governs and regulates forest management. Determining the right mix of legal and policy changes, tax benefits, subsidies, financial rewards, educational dividends, and other upfront investments along the entire wood products provisioning and supply chains is no simple task (Fishbein & Lee, 2015). Rather than think about benefits in terms of payment for opportunity cost in the way project-based REDD+ does, it is more effective to frame jurisdictional REDD+ as a set of sequenced interventions that can support transformational development

goals within a landscape. In such a context, instead of direct results-based carbon payments, it is useful to consider rewarding *proxies of performance* that may be simpler to implement and easier to understand for all concerned. REDD+ payments from results-based finance can then form part of the mix in moving toward a richly forested landscape.

It is necessary to develop a programmatic approach that builds key bundles of well-targeted interventions early on to support positive momentum over the years of the program (Fishbein & Lee, 2015). Creating an enabling environment through legal and policy measures in parallel with interventions within the landscape will help, through phased design, to achieve the composite transformations within the forested landscape. A central dimension of programming will be to ensure that all the major forest tenure institutions and their property rights within the landscape work synergistically and effectively to achieve ER goals. This will require understanding both their niche roles within the landscape and the integrated and cumulative effects of their performance both in terms of avoided deforestation and degradation, carbon sequestration, and as a spectrum of co-benefits.

In the case of Nepal, for reasons to do with large-scale deforestation experienced in the 1960s and 1970s, the country embarked on an ambitious program to devolve forest tenure rights to communities in order to jumpstart regreening and improve forests. As a result, over the last 30 years, a strong pro-forest conservation ideology has been at work both within the MoFSC and among rural citizens. Even when the national planning agenda revolving around poverty alleviation and social inclusion came into ascendancy in the early 2000s, the challenge was how to interlink this new set of needs with ongoing forest conservation mandates. As a result, the production-oriented elements of forest management for supplying a range of forest products to domestic markets has not received attention until recently. However, Nepal is now at a turning point: changing timber demand-supply dynamics together with persistent degradation of the remaining GMFs in conjunction with the rise of a REDD+ agenda have prompted a rethinking of the forest sector.

Having demonstrated substantial capacity to achieve successful forest tenure devolution at a large scale, and with proof of its ability to regreen its landscape, the next step in Nepal's forest sector management is to further devolve forest tenure by improving forest planning and silvicultural management to meet the new set of multiple uses of the forests. Improving prosperity in an equitable fashion is the new development agenda in the forest sector. Here the issue of achieving REDD+ goals is not about initiating a new isolated program but rather about integrating it into the proposed continuation of forest tenure devolution within the Terai.

In doing so, there is considerable concern that REDD+ may weaken the autonomy of CFUGs as the program encourages greater centralization of government control. There is a growing commentary that the primary focus of the government within REDD+ has, so far, been on its technical dimensions such as carbon assessments, reference scenarios, and reporting and verification of emissions rather than on the central issue of tenure and its role in drivers of deforestation and degradation (Bastakoti & Davidsen, 2014; Bushley & Khanal, 2012; Ojha, Khatri, Shrestha, Bushley, & Sharma 2013; Paudel, Vedeld, & Khatri, 2015; Poudel, Thwaites, Race, & Dahal, 2014).

The current challenge is to identify the role of different devolved forest tenure institutions in the prevailing drivers of deforestation and degradation. The central issue that needs closer examination is how the combination of different forest tenure institutions leads to particular composite forest outcomes in the ERPAA. Those institutional modalities that have delivered substantive positive performance in forest management can play a future role in further devolution of the government's forestlands. At the same time, analyzing the issue of drivers at a landscape scale will necessitate supporting innovative new trends such as CoF, PRFs, PLFs, and PFs. Furthermore, situating the role of forest tenure institutions along any forest product provisioning and supply chain can illuminate the broader economic and political development dynamics at play.

Tenure security is certainly an important platform through which investment of time and labor in forest management generates benefits over the long-term. An important part of the bundle of rights and duties that make up a given tenure institution is management of the resource. The FSS has identified the need for more intensive forms of forest operational planning in order to better balance conservation and livelihoods goals. In

light of this, using silvicultural concepts developed through participatory (rather than techno-bureaucratic) approaches, tailored to specific ecologies, forests can promote carbon sequestration as well as provide forest products for household and market needs. Globally, community-based forest management has tended to focus on governance and institution-building rather than on silvicultural knowledge and practice. Conservation objectives have all too often been seen to be conflicting with production aims in forest management.

Whereas the introduction of conservation objectives into productive forests is the norm elsewhere, it is the reverse in Nepal. Currently, there is an opportunity to consider how conserved forests can be intensively managed so as to simultaneously meet production goals. For example, management intensification involves not simply extracting more timber but also improving the quality of the harvested timber through thinning and regeneration techniques. It can also involve the use of more spatial segregation techniques where different plots are used for specific purposes. So far, silvicultural practices in Nepal have been simple and mostly passive. The ER Program is well-placed to support the identification of a spectrum of silvicultural practices tailored for the location-specific goals within different forest tenure modalities. Development of such silvicultural techniques through a participatory approach is in its early stage of knowledge generation globally. Nepal, therefore, has an opportunity to pilot some innovations on this front that could be shared with the global community.

ER Program Design and Implementation Recommendations

Based on the assessment of forest tenure types within the ERPAA landscape in the Terai, the following recommendations are put forward for the design and implementation of the ER Program. They start from interventions to be implemented at the macro-scale and move toward those needed at the individual forest tenure institutional level. The focus is on achieving composite and synergistic changes in forested landscapes within the ERPAA. While there is generally good understanding of the Middle Hills forest landscape, the Terai has been insufficiently researched. This assessment has sought to examine the formal governance frameworks and property rights rules at work within all forest tenure modalities in the ERPAA landscape, in particular identifying the key agents of change that have facilitated positive practices and effective performance. The effectiveness, particularly of community-based forest tenure, is highly dependent not simply on laws and policies but also on the right mix of support from donors, CSOs, national/global NGOs, and researchers. The recommendations are categorized into four sections: a) landscape-level interventions; b) strengthening government administration and capacity; c) complementary interventions; and d) cross-cutting issues. Since the delivery of the major part of ER will be from CF and CoF (existing and new), the landscape-level interventions are directed at these two devolved forest tenure institutions. The remaining smaller-scale forest tenure types can support the landscape-level improvements through complementary interventions. Additionally, lessons derived from the diverse experience of smaller-scale tenure types in balancing multiple needs can help build overall synergistic programming, prevent leakage across tenure types, and reduce conflicts.

A. LANDSCAPE-LEVEL INTERVENTIONS

Landscape-level interventions are designed to create the largest levels of ER within targeted forest tenure institutions. The ER-PIN sets out that reductions in emissions will be substantially obtained by devolving GMFs to a range of key forest tenure types, namely CF, CoF and a possibly new category called private plantations. Therefore, the ER Program can direct its resources towards developing a process that determines how that devolution process should be carried out. The creation of a participatory planning platform across the ERPAA that engages with DFCCs can help identify criteria for the distribution of GMFs to particular forest tenure types. Priority needs to be given to the plains Terai sub-landscape rather than the Churia both because deforestation levels as well as potential for carbon sequestration are higher given its particular forest ecology. Although much attention has been given to the Churia conservation program, its lower deforestation levels and capacity to sequester carbon indicate that amendments to regulations as well as supportive programs for existing devolved forest tenure institutions in this sub-landscape, primarily

CFUGs, for balancing livelihoods and conservation needs will be the most cost-effective way forward with lower levels of conflict. Although existing CFUGs have already directed efforts at improving forest condition and cover, they can be additionally supported by implementing participatory forms of silvicultural management in their operational plans that ensure equitable and balanced use of forests that meets the multiple goals of the REDD+ initiative.

i. Forest Tenure Devolution of GMFs

According to the FSS, Nepal is poised to continue the forest tenure devolution process that hands over national forestlands to a range of community-based forest tenure types. The FSS, which sets out the direction of forest sector transformations from 2015 to 2025, is presently undergoing public consultation. The ER Program will be contributing to this devolution process. One major source of ER will result, according to the ER-PIN, from the devolution of GMFs to a range of key forest tenure types in the landscape, namely CF, CoF, and a possibly new category called private plantations. Prior to developing criteria to guide relative distributions among these tenure types, there is a need to develop an evaluation of the lessons from the first phase of CoF across all 16 diverse CoFs in the ERPAA. Case studies indicate that a number of governance and management issues need improvement. Given this is a large-scale forest tenure type that covers numerous VDCs, there is a complex multi-tiered governance arrangement that has to attend to a range of users (distant and close users) as well as multiple goals including sustainable forest management, timber harvesting and sales, supply of basic household forest products, poverty alleviation, and biodiversity conservation. Certainly, CoF has a shorter history than CF and is a more complicated tenure arrangement. Therefore, while CoF has a specific niche role within the landscape, its ability to deliver the goals of the ER Program will require the identification of additional support areas to reduce the risk of performance weaknesses. Additionally, following the review of CoF lessons, it will may be necessary to establish CoF within the 1993 Forest Act so that it has a more secure footing in law.

Given that CF has proven to be a reliable institutional platform for achieving forest improvement and livelihood goals, the risks involved in devolving to this tenure modality are lower. That would point to the preference to devolve to CF where forests are near settlements. That said, CoF plays a specific niche role in forested landscapes that are far from settlements. In the case of both devolution to CF and CoF, priority should be given to the plains Terai first and then the Churia given the intensity of drivers behind deforestation and degradation in the former. All in all, supporting evidence-based decision-making in this next round of devolution will be critical to designing an approach that will not engender conflict and produce composite benefits.

ii. District-Level and Landscape-Level Forest Planning

Once the FSS is finalized, the development of landscape-based forest management plans that take into consideration the physiography, as well as socio-economic and political context, will permit a more tailored devolution in this next phase. Such a plan for the ERPAA can be produced through the creation of a participatory forest planning platform, one that will take the DFCC work to the next scalar level. The planning platform would bring together government ministries, departments, planning bodies (such as DFCCs), donors, key forest tenure stakeholders, and CSOs/NGOs from each district within the ERPAA. This will permit the ER Program to roll out a coordinated, rather than organic, forest tenure devolution process. In particular, it can be tasked with the development of criteria for the devolution of GMFs to CF, CoFs or private plantations. It can also be interlinked with the development of land use planning systems being set up by the Ministry of Land Reform and Management to implement the 2012 National Land Use Policy.

Specifically, this planning platform will need to take up two tasks to support this proposed devolution process. Firstly, it will need to undertake two key mapping exercises: 1) to map out the current location of forest tenure types against both settlement patterns and forest cover within the landscape and 2) to map out key stakeholders, projects, and areas of operation within the landscape. Secondly, based on this information, a series of collectively agreed criteria can be developed that considers such factors as type of forest, forest condition, economic value of forests, proximity to communities, proximity to infrastructure, level and range of forest dependency, and community poverty levels.

Such a planning platform can also help define the role of the Churia Conservation Program's area of scope within the ER Program and any special considerations thereof. Building the interest of local politicians and parties will be crucial to the success of any jurisdictional REDD+ initiative seeking to bring about transformational development. Rather than making the planning platform unwieldy and difficult to manage, providing specific avenues for political interests to understand the significance of this landscape-based approach through facilitated groups will be important.

Although the district-level planning process has been neglected since the early 2000s, the completion of the Constitution signals the possibility of DDC and VDC elections. To date, despite the principle of decentralization of governance put forward in the 1999 LSGA, the lack of a fully functioning district-level government due to national political upheavals has resulted in the absence of any forest planning mechanism. Building up the achievements of DFCCs within each of the ERPAA districts by providing financial resources, improving the dissemination of information, supporting effective representation, and building upward-downward linkages will be important avenues through which this promising but fledgling institution under the DDC can become a primary supportive node for planning within districts and across the ERPAA.

iii. Contested Forest Rights in Churia Conservation Program

Although the ER Program needs to prioritize interventions in the plains Terai rather than the Churia, the fact that the Churia Conservation Program has become a major conflictual flashpoint in forest sector planning indicates the need for an early resolution to the concerns of CFUGs, CSOs and NGOs on this issue. The major task ahead, therefore, is to amend the regulatory structure for the Churia Conservation Program so that forest conservation is promoted while the livelihood needs of the mostly marginalized and poor communities are addressed. The lack of reliable access to forest products for local communities is likely to create additional deforestation pressures through illegal activity. Furthermore careful consideration will need to be taken in terms of parity in benefits for CFUGs inside and outside the Churia in the ERPAA.

While deforestation levels in the Churia are relatively much lower than in the Terai, reducing this further will require ameliorating the prevalent problem of landlessness. This is a major cause of increased reliance on livestock production and hence dependency on grazing within forests. Future studies of how CFUGs operate within communities who are landless will help determine whether the creation of more CFUGs may improve forest management. Additional support for better development options (presently very limited) in this more remote and hilly context will enable the ER Program to address the root causes of forest degradation in the Churia.

iv. Silvicultural Management and Forest Operational Planning

Given the divergent goals of various devolved forest tenure institutions and the FSS's focus on intensive forms of forest management, technical support for participatory forms of silvicultural management and forest operational plans, will provide multiplier effects by reconciling the need for forest conservation, production of timber for markets, and provision of forest products especially for the poorer and marginalized members of tenure institutions. Supporting innovations that enable the preparation of a cost-effective, simple, and participatory protocol operational plans for the range of tenure types would be an important contribution for effective implementation of the ER Program. If the ER Program funds are invested in better forest operational planning, the positive impact on income generation for community members in all forest tenure types would be a significant incentive.

Rather than distribute any cash payments to households (especially given the absence of any existing mechanisms for this purpose), investing such funds into collective welfare projects such as forest enterprise development or renewable energy that improve sustainable forms of forest product supply and support both elite as well as poorer members, is likely to significantly reduce forest degradation. Such collective welfare projects can also include the needs of distant users where relevant.

B. STRENGTHENING GOVERNMENT ADMINISTRATION AND CAPACITY

The effectiveness and success of any given forest tenure institution, particularly devolved ones, depends not only on local-level governance by community members but also on capable government administration and management. While the expansion of CFUGs and other devolved forest tenure types speaks to the impressive capacity of the MoFSC and DFOs in supporting this tenure mosaic under a condition of limited resources. That said, additional resources to provide updated technical and management training can form the cornerstone for more intensive forms of forest management identified in the FSS.

i. Local Self-Governance Act and Local District Government

In light of the possible substantial overlap or conflict of authority over forest management between the MoFSC and the DDCs/VDCs as a result of the stipulations in the 1993 Forest Act and the 1999 LSGA, a comprehensive review of this body of legislation is needed to clarify specific rights and responsibilities going forward. The development of discretionary and uneven approaches in forest sector management could lead to conflicts that will pose major obstacles to ER Program implementation. Additionally, how the forest sector will be integrated within a future umbrella Land Law will likely have considerable ramifications for the ER Program.

ii. *Strengthening DFOs*

It has been clear for some time that the constant turnover of DFOFs is a substantial hindrance to building effective long-term plans for forest management at the district level. Rather than relying on constantly revolving leadership to prevent corruption and the entrenchment of interests, it may be preferable to build better modes of upward and downward accountability so that DFOFs can support broader political and social mandates. Furthermore, building a set of incentives for DFOs to improve the management of forest tenure types within their district-level landscapes will help ensure that resources are directed not only at patrolling, monitoring, and licensing but additionally build their role as a catalytic agent that facilitates effective tenure devolution. In order to become effective administrators of the numerous forest tenure types, the DFO staff will value the provision of technical training (such as on participatory silvicultural techniques) and better sensitization to collaborative approaches to forest management. A more robust budget will make this altogether more feasible.

iii. Encroachment

Addressing the problem of encroachment on forestlands is politically very contentious issue. Given that differentiating *sukumbasis* from *hukumbasis* is an arduous process, it will be difficult to rely solely on the actions of the commission established to remedy squatter problems. An important dimension in deterring encroachment is to further devolve forest tenure from GMFs to CFs or CoFs since they are actively engaged in monitoring and guarding of their forests. Additionally, the creation of a land use planning process, presently in the works under the Ministry of Land Reform and Management, will also ensure clarity of land use allocations so that arbitrary takeover of lands for informal settlement of government lands becomes more difficult. Lastly, DFOs can then target their limited resources at priority areas for forest law enforcement and monitoring to prevent new settlements.

C. COMPLEMENTARY INTERVENTIONS

Complementary interventions aim to ensure that the major interventions to achieve ER goals across the ERPAA are supported or enhanced by additional second-tier interventions that additionally improve ER through further improvements in forest conditions through reducing deforestation and degradation pressures as well as better forest management. These interventions are targeted at the smaller forest tenure institutions that hold promise but, as yet, their scalar contribution to program goals remain relatively limited.

i. Buffer Zone Community Forests

Despite a limited level of autonomy over management of BZCFs, they are still able to improve forests. There is therefore considerable potential to support better forest management as well as co-benefits through strengthening the tenure conditions. This would involve elaborating the regulations to provide more specific

details of governance (duration of tenure modality, and incorporation of gender and social inclusion concerns), operational planning, use and sale of forest products, and use of funds. Although there is a three-tiered governance system for BZs, the lack of clear regulatory guidelines, by default, results in these forests inadvertently remaining under the discretionary control of the national park warden. In particular, although BZCFs are clearly diverse, they are dependent on the overall revenue levels of PAs. Where parks have low revenues, BZCFs can benefit from developing alternative sources of income generation to support forest management and livelihoods. Such additional guidelines can provide BZCFs with greater autonomy and strengthen social inclusiveness and equity, as well as a sense of ownership in the forests. In turn, the sense of ownership will bring greater benefits both to the forests and community members.

ii. Protected Forests

Protected forests are a hybrid type of forest tenure institution that essentially works with CFUGs to strengthen their contributions to biodiversity conservation. Much of this work has been initiated by NGOs. Although the outcomes of PF management in wildlife corridors indicates improvements in forest condition, deriving lessons (on governance, management, and income-generation) from this experience can support ER Program design at large in identifying how specific interventions can better balance the multiple interests of forest condition and community well-being. In particular, attention to different strategies utilized in Churia and Terai forests will help differentiate the relatively different needs of these sub-landscape types. This, in turn, may throw light on whether the provisions of the 1993 Forest Act and its bylaws need any revision in order to ensure a more secure enabling framework for this tenure type.

iii. Public Lands Forests

PLFs are an important emerging component of the overall push to reduce deforestation and degradation in the ERPAA. By supporting the poor and marginalized residents of the southern belt of certain ERPAA districts, the burden on the main government-managed and other forests is reduced. Although considerable promise has been demonstrated by PLFs so far, there is a critical need to establish a clear legal and regulatory framework that provides PILMs with tenure security. This should clarify the relative roles of DDCs, VDCs, and DoF so that PLF approval, management, and permitting dimensions can be efficiently streamlined. The ER Program can benefit from taking this up as one important area of policy-related engagement and additionally consider the value of scaling up PRF across those districts with limited forests in the southern belt.

iv. Private Forests

While PRFs are only expanding in areas close to urban markets such as Kathmandu, it is clear that removal of barriers in the form of excessive taxes and regulations on transport and sales of timber will help jumpstart what is already an emerging development within the ERPAA. Furthermore, given the limited availability of seedlings for any type of afforestation activities, the DoF should develop more accessible nurseries with species that PRF owners favor.

D. CROSS-CUTTING ISSUES

Cross-cutting issues are those programmatic concerns that can support the effectiveness, efficiency, and equity dimensions of the Program Design by recognizing the need to pro-actively build support systems that both reduce risks in the face of large-scale economic and environmental changes as well as catalyze social transformations in the interests of minimizing conflict and reducing poverty as well as marginalization.

i. Globalization and Climate Change

The ER Program will benefit from being attuned to the major transformations taking place in the ERPAA in terms of economic development, post-conflict politics, infrastructure, agricultural practices, labor availability, migration, forest product needs, as well as climate change. Given that large-scale out-migration will increase the feminization of agriculture and forest sectors, there will be fundamental gender equity repercussions for governance and forest management. Developing resilience and adaptability in the face of the double exposure

to globalization as well as climate change will permit flexibility in options for supporting richly forested landscapes.

ii. Gender and Social Inclusion

Across all forest tenure modalities, the improvement of gender equity and social inclusion remains a central concern. While there is an excellent Gender and Social Inclusion Strategy and a progressive set of guidelines for CF in the MoFSC, the difficulty lies in their limited implementation to date. Beyond CF, a stronger set of gender and social inclusion guidelines are valuable e.g., for BZCFs. In particular, special consideration for how marginalized and landless *janajati* and *dalit* communities, as the most forest dependent, can become active decision-making members of forest tenure institutions needs to be underscored in programmatic design.

Moving Forward

This set of recommendations emphasizes the importance of building a strong and transparent participatory planning process across the ERPAA landscape as well as at the district level. This requires the identification of consensually agreed criteria (condition of forest, proximity to settlement, proximity to road infrastructure, poverty levels) that will be utilized for determining allocations of GMFs to a range of devolved forest tenure modalities, most importantly CF and CoF. In this way, a landscape-level evaluation of the niche role of each forest tenure type is explicitly developed so that a fuller understanding of the likely aggregate or composite effect of current and future levels of devolution on ER can be obtained. The development of a landscape-level strategy will considerably benefit from strengthening the technical and management (including monitoring) capacity of the central and district-level government staff, as well as addressing any legal obstacles to smooth implementation. Additionally, recommendations on complementary interventions have been provided on necessary changes within the smaller forest tenure type to improve governance as well as use, management, and equitable benefit-sharing rules so that there is an overall reduction in drivers behind deforestation and degradation with a corollary move towards sustainable forest management practices.

Jurisdictional REDD+ programs are large-scale endeavors that will require considerable up-front work on mapping out likely scenarios of forest tenure devolution within a landscape that is in a considerable state of development flux. Addressing the two key cross-cutting issues of globalization and climate change, as well as gender and social inclusion provide the building blocks for a pro-active consideration of how the ER Program can launch transformational development pathways to a low-carbon future.

ABILITY OF THE ER PROGRAM ENTITY TO TRANSFER ER TITLE TO THE CARBON FUND: CRITERION 36

Given the specific REDD+ approach being taken in the TAL, it is clear that specific communities in different types of devolved forest tenure institutions throughout the ERPAA will play, in aggregate, an active role in achieving the proposed ERs. Whether in CFs, CoFs, BZCFs, or other major forest tenure types, the ER Program will need to include a set of supportive mechanisms and results-based financing tools that act as an overall system of incentives to forest managers and communities in varied forest tenure institutions leveraging their efforts for achieving ER at a systemic level. Although the forestland is ultimately "owned" by the government, it is those that hold usufruct rights who will deliver the performance goals set out in the ER Program when provided with a package of appropriate enabling legal and regulatory frameworks, targeted capacity building and technical support, and direct financial incentives.

One of the central issues in developing a viable ER Program in this ERPAA is how to reconcile the technical reality of carbon reference scenarios (that will only likely be measurable at the landscape or district scale) against the recognition that ERs will be generated by the sustained efforts of different types of community-based forest tenure institutions operating at distinctively different scales across the landscape. Implementing the ER Program in large numbers of small-scale tenure institutions will incur higher transaction costs (contractual, as well as monitoring, reporting and verification ones) than a few, large-scale forest tenure institutions. The Carbon Fund recognizes that it will not always be possible to distribute funds within a

landscape or jurisdiction that are direct proportional to specific contributions to ER given the mosaic of forest tenure institutions at play in jurisdictional REDD+. Countries will need to determine relevant approaches through their benefit-sharing protocols as well as "internal" carbon accounting methodologies, taking into consideration the projected ability of different tenure institutions to deliver specific performance or action targets.

In light of this, the critical issue of benefit distribution across and within the multiple types of forest tenure types in the ERPAA need not be approached directly in terms of carbon rights or ownership criteria. Instead, the key concern should be for identifying a package of benefits for identified stakeholders in each forest tenure institution that will move the forest management system in the direction of improvements in forest cover and condition (and therefore ER) while generating a range of direct financial benefits as well as co-benefits for any participating tenure institution's members.

Therefore, criterion 36 can be approached through a contractual mode in which all beneficiaries appoint a fiduciary entity that is responsible for managing and accounting for the Carbon Fund payment contingent on a set of responsibility criteria. One potential scenario is to establish a national-level REDD+ fund that becomes the entity receiving the funds from sale of the carbon credit to the Carbon Fund. This would permit the creation of clear authority to transfer ER credits while allowing a variety of actors to benefit from ER activities at the local level (based on performance, proxies of performance such as effort, or other combination of criteria).

Although it is recognized that nearly all the forestland in the ERPAA is under the jurisdiction of the MoFSC (except for PLF lands under the DDC's jurisdiction, and very small areas under the private sector), the management of this fund would be structured so as to acknowledge the significant role of the central and local government as well diverse tenure stakeholders in the ERPAA landscape in achieving ER goals. This REDD+ fund could be part of the REDD+ Implementation Center (within the MoFSC) or another government division or it could have a substantive level of legal and operational independence from the national government. If the latter, such a fund would need to be created with an independent legal personality (e.g., private non-profit organization, trust, or a devolved or semi-governmental entity) (Conway, Pritchard, Streck, & Broadhead, 2014; Streck & Parker, 2012).

The specifics of its legal form would have to be carefully tailored to the national legal context. The fund's governing board would be made up of high-level representation from the public sector (relevant ministries and agencies), key forest tenure types, key civil society forest organizations, forest experts, and the private sector. Among other duties, the board would oversee the operational and distributive procedures governing fund disbursement to all relevant forest tenure entities within the ERPAA. Establishing an autonomous status for such a body would bypass the risk that results-based finance modalities are seen to be under the centralized control of the government. On the other hand, working through a participatory institution of this kind will engender a more complex decision-making process than one housed and directly managed by a government body. Whichever path is adopted, the specific details of benefit sharing formulas and mechanisms would need their own dedicated study.

In the current legislation, there are no stipulations regarding tenure or property ownership rights over organic biomass carbon within national forests under the government's jurisdiction. Moreover, organic biomass carbon is not defined as a forest product. Therefore, any relationship to the granting of usufruct rights over timber or NTFPs (defined as forest products in the 1993 Forest Act) does not come into play. As such, the right to timber extraction does not equate to a tenure or property ownership right over biomass carbon in the forest. Other legislation such as the Mines and Minerals Act of 1985 have no relevance to this discussion because minerals are defined as inorganic substances.

While it is hypothetically possible to create a clear tenure or property ownership right to carbon through legislation, this would be time-consuming, complicated, and politically charged. If carbon tenure rights were created among multiple actors based on forest management regimes, how would these rights be precisely defined? How would they be tracked? In light of this, it is useful to move away from the biomass carbon ownership question.

One solution that moves away from a tenure-based approach to establishing clear title to the carbon credit is to frame the results-based finance structure in terms of payment for ecosystem services (see also Belbase, Paudyal, Sijapati, & Luintel, 2015). One of the amendments proposed to the 1993 Forest Act revision concerns the establishment of a Payment for Ecosystem Services mechanism. In this case, a centralized fund will disburse funds based on actions to improve ecosystem services through a contractual model. Another solution that bypasses the issue of carbon tenure's relationship to existing forest tenure rights involves the use of the current environmental protection legislative framework with minor regulatory amendments from the Cabinet level of the government. This scenario is as follows:

Greenhouse gas emissions (carbon dioxide and equivalents) fit the current definition of "pollutant" under the Environmental Protection Act, Article 2(b), and the government already has the established right to regulate and control pollutants. This principle can easily be utilized for the management of national forests. Biomass carbon sinks within the national forests are the means through which greenhouse gas ERs are created. Verifiable reductions in greenhouse gas emissions from the national forest generate transferable ER-Credits. In order to achieve this, it is necessary to create clear authority in the MoFSC: a) to regulate greenhouse gas emissions from national forests; b) to secure title overall all ER-Credits generated from improved national forest management; and c) to transfer ER-Credits for financial consideration.

In practice, this would require a single amendment to the GoN's Division of Work Regulations that would:

a) Grant the MoFSC the authority to regulate greenhouse gas emissions from national forests;

b) Grant the MoFSC the authority to create a central-level entity within the ministry that can secure title to all ER-Credits generated from improved forest management methodologies; and

c) Create a central-level entity in the MoFSC that has title over said ER-Credits and that can enter into an Emission Reduction Program Agreement (ERPA) and transfer title to another legal entity (Carbon Fund) in exchange for financial consideration.

Once clear authority is secured from a single cabinet-level regulatory amendment, the MoFSC could develop an ER-Credit Management Mechanism through its internal regulatory authority. ER-Credits would be generated and held at the central level (possibly in a national fund), negating the need for complicated and time-consuming ER-Credit title transfers from numerous locations to a central entity. Multiple local actors (including private sector and communities) could still benefit based on principles of payment for services/performance (or other criteria) and equity developed within the national REDD+ funding body.

There would still be a need to develop financial management and benefit-sharing mechanisms (which is not easy), but the complicated carbon ownership debate would be taken out of the picture. The benefit-sharing mechanism could allocate financial rewards ("carbon benefits") based on a range of possible criteria including relative contribution to the generation of ER-Credits in a jurisdictional area. There is also the possibility of price premium payments for environmental services (as with biodiversity).

The existing forest management regime benefit-sharing mechanisms (for CFs, CFMs, BZCF, etc.) are not well suited to ER-Credit Management Mechanism benefit sharing. They are too complicated, not sufficiently transparent, and designed for extraction of resources (not extraction of carbon). In light of this, a new benefit-sharing mechanism would need to be specifically tailored to the ER concept. In order to achieve this effectively, it will be necessary to ensure maximum participation of all concerned stakeholders throughout the process, and ensure that proper incentive mechanisms are utilized to improve forest condition. It is vital that maximum benefits flow to the local level, and it must be made clear that existing use rights will not be infringed upon. In essence, the principle of maximum recognition of rights over the resources (see the *Voluntary Guidelines on Governance of Tenure*) will govern the process.

Among the outstanding issues that would need to be acknowledged and addressed are as follows:

- The constitutional reform process could have an impact on financial management regimes;

- The provisions in the current Climate Change Policy requiring 80 percent of funds generated to go to grassroots or community level are unclear and, moreover, do not enable a flexible approach;
- Continued research is needed on what mechanisms work best to reduce greenhouse gas emissions and generate ER-Credits; the key is evidence-based policy-making.

1.0 INTRODUCTION

1.1 OBJECTIVES OF THE LAND AND NATURAL RESOURCE TENURE ASSESSMENT

The Forest Carbon Partnership Facility (FCPF) is a partnership of governments, businesses, civil society, and indigenous peoples that assists countries in piloting a large-scale system of performance-based incentives for Reducing Emissions from Deforestation and Forest Degradation (REDD+) at the national level. The FPCF is one of the global initiatives for REDD+. The FCPF has two incentive mechanisms: a Readiness Mechanism (for preparatory planning) and a Carbon Finance Mechanism (also called the Carbon Fund, for piloting incentive payments). Once countries have engaged in substantial readiness activities for national emission reductions (ER) programs, they are eligible to submit an Emission Reductions Program Idea Note (ER-PIN) for the Carbon Fund that aims to pilot incentive payments for REDD+.

Nepal's ER-PIN was among the first to be accepted by the FCPF's Carbon Fund in April 2014. The Carbon Fund's Methodological Framework (MF) provides guidance to countries on both the development of proposals and the implementation of REDD+ programs so that fund requirements can be met and regular reviews facilitated (FCPF, 2013). Criteria 28 and 36 of the MF focus on land and natural resource tenure concerns, and the ability of a national entity to sell carbon credits to the Carbon Fund respectively. This assessment of the present status of Nepal's land and natural resource tenure within the Emission Reductions Program Accounting Area (ERPAA), that forms one part of the Terai Arc Landscape[1] (TAL), has been prepared in order to support Nepal's REDD+ Implementation Centre (RIC, previously called the REDD+ Cell) in developing its ER Program design. Based on this assessment, this report provides a set of recommendations for these two criteria in order to support effective implementation and performance.

Criterion 28 focuses on secure land and natural resource tenure because it constitutes an important enabling condition (precondition or factors that promote positive transformations) for successful REDD+ design and implementation. Land and natural resource tenure arrangements play an important role in determining ecological and social outcomes. Tenure over land and natural resources refers to the social relations, institutions, and rules that govern people's access to and use of those landed resources (Larson et al., 2013; USAID, 2013). Land and natural resource tenure, therefore, determines who is allowed to use which resources, in what way, for how long, and under what conditions, as well as who is entitled to transfer rights to others and how (Larson, 2013). Positive enabling tenure conditions can have multiple impacts in REDD+ initiatives by: reducing drivers behind deforestation and degradation, improving forest condition and cover, guiding effective development of safeguard measures, informing equitable benefit sharing plans, and determining responsibility for reversals. Criterion 28 potentially affects Criterion 36 on transfer of Title to ERs to the Carbon Fund because it may provide the preconditions for establishing clear ownership to the credits in order to ensure smooth transfer to the Carbon Fund with minimal encumbrance.

[1] The TAL is made up of 11 Nepalese and Indian protected ecosystems of the Terai (a plains and hills belt between Nepal and India). Between these two countries, the TAL covers about 5 million hectares and stretches over 500 miles between the Yamuna River in the west and the Bagmati River in the east. It includes lowland plains as well as the Siwalik or Churia Hills (part of inner Terai). In 2001, the TAL was initiated in Nepal as a jointly implemented program between the Department of Forests and Department of National Parks and Wildlife Conservation (both of the Ministry of Forests and Soil Conservation), and the World Wildlife Fund (WWF) Nepal in collaboration with local NGOs and communities. The Nepal TAL program, which covers 2.3 million ha, aims to "conserve the biodiversity, forests, soil and watershed of the Terai and Churia hills in order to ensure the ecological, economic and socio-cultural integrity of the region." It follows physiographic rather than administrative boundaries, covers approximately 15% of the country's total land area, and has a population of about 6.7 million people.

The ER-PIN proposes a jurisdictional REDD+ program that works across a large sub-national landscape. Jurisdictional REDD+ programs aim to surmount the difficulties posed by project-based approaches by developing interventions across land-use types and with a range of stakeholders (Fishbein & Lee, 2015). Such a jurisdictional approach involves its own unique challenges because the incentives that need to be mobilized require much more than just results-based finance in the form of payments for opportunity costs; rather, it is advantageous to envision a transformational development model in which a portfolio of policies and incentives support the overall move toward a low emissions development pathway within a particular landscape (Fishbein & Lee, 2015). The role of tenure conditions and how they can support such a transformational development model is an important part of the incentives package. Since the operation of any given type of forest tenure arrangement is significantly affected by prevailing development conditions, this assessment provides an overview of the existing social, economic, and political conditions that will need to be considered in transitioning towards a low emission development pathway.

Given that Nepal is a global leader in the devolution of forest tenure arrangements to a range of different community-based forest tenure institutions, the TAL offers an opportunity to understand how an ER Program can be effectively implemented in a landscape with a complex mosaic of forest tenure institutions. Ten diverse forest tenure types form a mosaic pattern across the ERPAA, which significantly differs from that found in the Middle Hills or High Mountains (Nepal's two other primary eco-belts). Assessing the effectiveness of these devolved tenure institutions for protecting forests can help determine which of these tenure institutions, individually and in aggregate, are likely to be primary contributors to achieving ER goals. Furthermore, such an assessment can guide the design for further devolution of government-managed forests (GMFs) to community-based forest tenure institutions proposed in the ER-PIN (one of a set of five proposed key interventions; see Section 1.2).

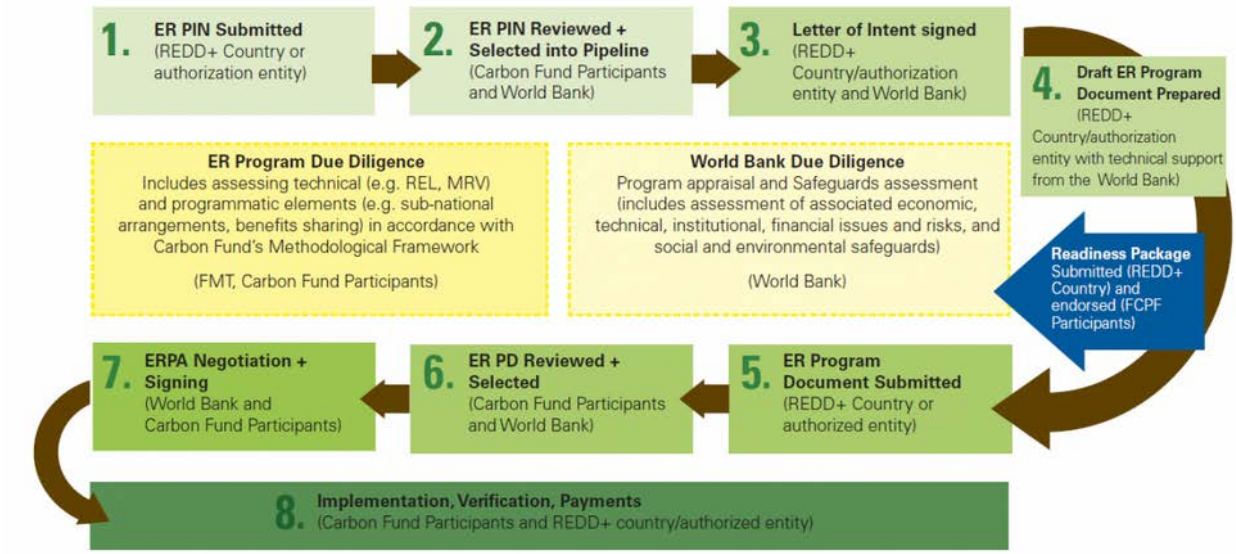
The report first sets out the rationale for the assessment as established by the Carbon Fund and Nepal's ER-PIN, and outlines the assessment framework and methodology. This is followed by the land and natural resource tenure assessment's key findings. Finally, a set of recommendations for ER Program design is presented.

1.2 NEPAL'S EMISSION REDUCTIONS PROGRAM IDEA NOTE

Nepal's RIC, established within the Ministry of Forests and Soil Conservation (MoFSC), is the key institution responsible for coordinating the REDD+ readiness process at all scales and implementing the ER Program. To help prepare the ER-PIN, the MoFSC REDD+ Working Group established a committee in 2013 that included a REDD+ Cell member, World Bank consultant, World Wildlife Fund (WWF) Nepal representative, and civil society organization (CSO)/indigenous people's organization representative.[2] The ER-PIN was submitted to the FCPF in early 2014 and was approved soon after in April (MoFSC, 2014). This tenure assessment will support the development of an ER Program Document (ERPD) that, if approved, will lead to the signing of an ER Program Agreement (ERPA; Figure 1).

[2] The REDD Working Group's 12 members were nominated by the MoFSC and represent the government, indigenous people's groups, community forest user groups, the private sector, and development partners.

FIGURE 1: FCPF BUSINESS PROCESS: FROM ER-PIN TO ER PROGRAM AGREEMENT

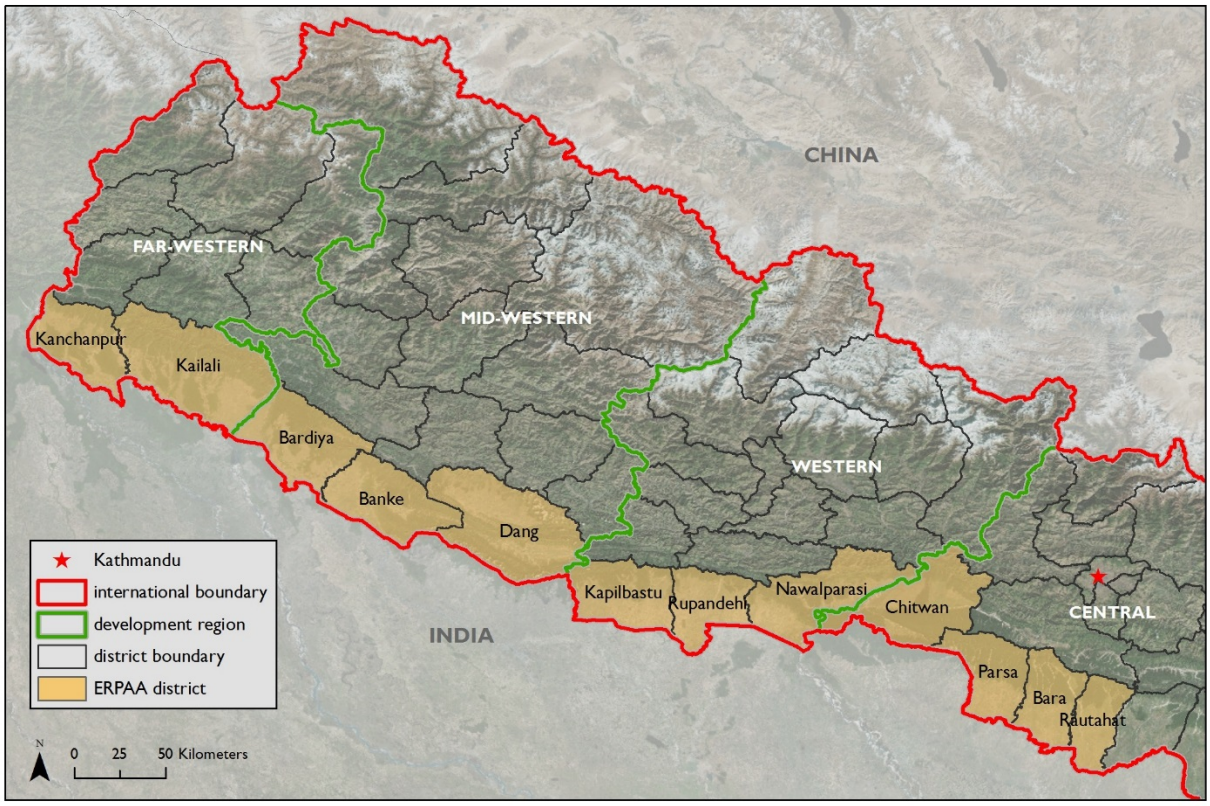


Source: www.forestcarbonpartnership.org.

The ER-PIN is aligned with the outline framework for the national REDD+ Strategy, which states that REDD+ should be consistent with Nepal's overall development strategy (Acharya et al., 2015). It therefore has the dual objectives of achieving sustainable forest management and alleviating poverty. The REDD+ Strategy outline framework sets out key principles for REDD+ programs that include: a) an effective participatory and consultative process to be adopted; b) social, environmental, and economic safeguards; c) equity in benefit-sharing based on forest use rights and carbon ownership rights; and d) a focus on non-carbon benefits.

The proposed ERPAA is made up of the 12 districts within the Terai, ranging across four of Nepal's development regions: Far-Western, Mid-Western, Western, and Central (Figure 2). This lowland belt borders India along the length of the country. The ERPAA covers 1.18 million hectares (ha, roughly half of the entire TAL). According to the current Department of Forests (DoF) data, about 51.5 percent of this is under forest cover (DoF, 2012/2013). The altitude varies from 100 to 2,200 meters (m) and is influenced by tropical and subtropical climates. 21 percent of these forests are found inside protected areas (PAs) and 79 percent are located outside. There are presently three national parks and two wildlife reserves within the ERPAA that cover 511,700 ha. Major plans are afoot to conserve the Siwalik or Churia hills (of inner Terai) for watershed protection because they are fragile and geologically active. Importantly, the majority of the ERPAA forests are found within the Churia rather than the plains with the four main forest species being *sal* (*Shorea robusta*), Terai mixed hardwood, *khair-sissoo* (*Acacia catechu* and *Dalbergia sissoo*), and *chir* pine (*Pinus roxburghii*).

FIGURE 2: MAP OF PROPOSED ERPAA IN THE TERAI ARC LANDSCAPE



The ERPAA landscape is a mosaic of ten different large and small forest tenure regimes: PA, buffer zone community forest (BZCF), GMF, protected forest (PF), community forest (CF), collaborative forest (CoF), leasehold forest (LHF), public lands forest (PLF), private forest (PRF), and religious forest (RF). Among the community-based forest regimes, CF is the most significant, covering about 20.5 percent of the total forest area in the ERPAA. CoF is the next largest community-based tenure modality, covering a considerably smaller area of about 3.8 percent of forest area. These diverse forest tenure types form a particular type of mosaic pattern across this landscape, which significantly differs from the Middle Hills or High Mountains. While the TAL's boundaries are based on ecological criteria, the ERPAA's boundaries follow administratively established districts. This is important to note because the two recent Forest Resource Assessments (FRAs) conducted on the Terai and Churia in 2014 both overlap with the TAL but utilize physiographic criteria for their respective analyses rather than administrative boundaries.

There were two major reasons for establishing the ERPAA in the Terai. First, reliable baseline carbon reference levels for the TAL already existed. Second, there is a recognized need to identify more effective forest management approaches for this richly forested Terai landscape, which continues to experience significant deforestation and degradation including from unsustainable and illegal harvest of forest products, overgrazing, forest fires, and conversion of forests to other land uses. Given that community-based forest management has had a very positive experience in Nepal, the ER-PIN has proposed that the ER program be built by "combining community-based forest governance with increased knowledge and technical resources to improve forest management" (MoFSC, 2014, p. 11). The ER program "seeks to expand models of local control, empowerment, and accountability, and combine this with improved knowledge sharing. Nepal's global recognition for community involvement presents a framework from which to catalyze management changes broadly to improve the supply-demand deficit for forest products" (MoFSC, 2014, p. 14).

A significant part of the ER Program strategy is to gradually transition management of all GMFs (about 300,000 ha) in the ERPAA to either CFs or CoFs, as well as create a new type of tenure regime on GMF

called private plantations[3]. By selecting a landscape where significant challenges continue to exist, in contrast to working within the Middle Hills where implementation would have been straightforward, the ER-PIN demonstrates Nepal's "commitment to the value of learning" (MoFSC, 2014, p. 58). It is hoped that the lessons gained from the ER Program will offer insights to others in the global community.

The ER-PIN proposes five primary types of interventions involving all Terai forest management regimes:

1. Increasing supply of forest products, conserving forests, and enhancing carbon stocks through sustainable management of forests, improving forest law enforcement and governance, and maintaining conservation in protected areas;
2. Reducing demand of fuelwood with expansion of alternative energy, e.g., biogas plants and cooking stoves;
3. Planning integrated land use to reduce forest conversion while advancing needed infrastructure;
4. Increasing supply by engaging the private sector in sustainable production and value chain of forest products to bring new forest production to degraded lands; and
5. Enhancing alternative livelihood opportunities to address underlying drivers.

The proposed ER Program will be developed by a range of departments within the MoFSC (DoF, Forest Research and Survey, National Parks and Wildlife Conservation [DNPWC], and Soil Conservation and Watershed Management) in partnership with other relevant ministries (Finance; Science, Technology, and Environment; Energy; Agriculture; and Land Reform), donor agencies, and organizations.[4] The very substantial investment needed to implement the identified strategies will be covered by the regular government budget as well as from ongoing donor-supported forestry programs such as the Multi Stakeholder Forestry Program (MSFP), TAL, and the USAID-funded Hariyo Ban Programme (HBP).

Soon after the acceptance of the ER-PIN, both the UN-REDD Study of Drivers of Deforestation and Degradation (UN-REDD, 2014) and the Strategic Environmental and Social Assessment ([SESA] ICEM Asia, IIED, & SchEMS, 2014) were completed. In addition, a study of forest carbon ownership in Nepal was finalized in August 2015 (Belbase, Paudyal, Sijapati, & Luintel, 2015). The SESA proposes land tenure, carbon rights, and benefit-sharing as the first of 14 strategic options that should be pursued in the development of the national REDD+ Strategy (Figure 3). The UN-REDD drivers study identifies weak tenure (and the role of local governments) as one of the underlying causes of deforestation. The study notes that not only does the central government continue to hold sole management responsibility over large forested areas, the specific balance of responsibility between the government and communities in community-managed forest regimes needs to be adjusted to strengthen the set of benefits that can accrue to the immediate forest managers. In addition, insufficient decentralization of power to the local governments was highlighted, which limits the governance capacity for carrying out forest sector planning at the district level.

FIGURE 3: SESA STRATEGIC OPTION NUMBER 1 ON LAND TENURE, CARBON RIGHTS, AND BENEFIT-SHARING

SO1	**Land tenure, carbon rights and benefit-sharing-enabling fairness and effectiveness in land tenure, carbon rights and benefit-sharing**

[3] Although this is set out in the ER-PIN, it is unclear what the legal basis would be for allocating GMFs to private plantations.

[4] This includes the Multi-Stakeholder Forestry Programme; Asia Network for Sustainable Agriculture and Bioresources (ANSAB); Forest Action, International Centre for Integrated Mountain Development (ICIMOD); International Union for Conservation of Nature (IUCN); Center for People and Forests (RECOFTC); national universities; Nepal Federation of Indigenous Nationalities (NEFIN); Federation of Community Forestry Users, Nepal (FECOFUN); Association of Collaborative Forest Users Nepal (ACOFUN); National Forum For Advocacy Nepal (NAFAN); Dalit Alliance for Natural Resources; Dalit NGO Federation; Himalayan Grassroots Women's National Resource Management (HIMAWANTI); National Indigenous Women's Federation; WWF Nepal; USAID; the TAL Program; and the Hariyo Ban Program (HBP).

Clear and long-term carbon tenure and benefit-sharing mechanisms will provide incentives for sustainable management and clarity on beneficiaries of performance-based payments.	
Indicative activities derived from R-PP, other key reference documents and SESA consultations:	
SO1a	Define, clarify and accommodate carbon rights in relation to land and forests within existing policies or legislation
SO1b	Increase and ensure access to forests by women, Indigenous Peoples, vulnerable groups, forest dependent people, and other marginalized people, including reform at national and local levels to address (fragmentation) and inequity
SO1c	Establish clear and legally defined benefit-sharing mechanisms that can deliver to grassroots levels
SO1d	Establish and strengthen (gender-sensitive) grievance-addressing mechanisms
SO1e	Enhance local (forest related) voices to influence decision making at all levels

Source: ICEM Asia, IIED, & SchEMS, 2014.

1.3 CARBON FUND METHODOLOGICAL FRAMEWORK: CRITERIA 28 & 36

The MF provides a set of 37 criteria and related indicators that address five major dimensions of ER programs: a) ambition level, b) carbon accounting, c) safeguards, d) sustainable program design and implementation, and e) ER program transactions (FCPF, 2013). These criteria are utilized to determine who is accepted into the Carbon Fund portfolio, with determine the content of ER programs.

This tenure assessment primarily addresses Criterion 28 and provides guidance on a strategic option for Criteria 36. Under the MF's section on Sustainable Program Design and Implementation, Criterion 28 is targeted at land and resource tenure concerns. It notes that information on land tenure and resource rights will enable sound ER program design by clarifying rights holders, support the design of ER program measures, help draft equitable benefit-sharing plans, and demonstrate that the ER program entity has the ability to transfer Title to ERs. In addition, the MF notes that this tenure assessment may help clarify land and resource tenure in the ERPAA.

Within Criterion 28, Indicator 28.1 sets out that the assessment should examine the current status (legal and de facto) of different categories of rights holders in the ERPAA, the presence of overlapping or ambiguous claims that may lead to conflicts or disputes, and any potential impacts of the ER program on extant land and resource tenure arrangements (Figure 4).

FIGURE 4: CARBON FUND METHODOLOGICAL FRAMEWORK INDICATOR 28.1

Indicator 28.1: The ER Program reviews the assessment of land and resource tenure regimes carried out during the readiness phase at the national level (i.e., SESA) and, if necessary, supplements this assessment by undertaking an additional assessment of any issues related to land and resource tenure regimes in the Accounting Area that are critical to the successful implementation of the ER Program, including:

i. The range of land and resource tenure rights (including legal and customary rights of use, access, management, ownership, exclusion, etc.) and categories of rights holders present in the Accounting Area (including Indigenous Peoples and other relevant communities);

ii. The legal status of such rights, and any significant ambiguities or gaps in the applicable legal framework, including as pertains to the rights under customary law;

iii. Areas within the Accounting Area that are subject to significant conflicts or disputes have been or are proposed to be addressed; and

iv. Any potential impacts of the ER Program on existing land and resource tenure in the Accounting Area.

Source: FCPF, 2013.

In addition, this assessment examines MF Criterion 36 (Indicators 36.1 and 36.2) that falls under the section on ER Program Transactions (Figure 5). The ability of the ER Program Entity to transfer Title to ERs to the Carbon Fund is evaluated by identifying existing legal and regulatory arrangements (including sub-arrangements) as well as areas of contested or unclear rights.

FIGURE 5: CARBON FUND METHODOLOGICAL FRAMEWORK INDICATORS 36.1 AND 36.2

Criterion 36: The ER Program Entity demonstrates its authority to enter into an ERPA and its ability to transfer Title to ERs to the Carbon Fund.

Indicator 36.1: The ER Program Entity demonstrates its authority to enter into an ERPA with the Carbon Fund prior to the start of ERPA negotiations, either through:

i. Reference to an existing legal and regulatory framework stipulating such authority; and/or

ii. In the form of a letter from the relevant overarching governmental authority (e.g., the presidency, chancellery, etc.) or from the relevant governmental body authorized to confirm such authority.

Indicator 36.2: The ER Program Entity demonstrates its ability to transfer to the Carbon Fund Title to ERs while respecting the land and resource tenure rights of the potential rights-holders, including indigenous peoples (i.e., those holding legal and customary rights, as identified by the assessment conducted under Criterion 28), in the Accounting Area. The ability to transfer Title to ERs may be demonstrated through various means, including reference to existing legal and regulatory frameworks, sub-arrangements with potential land and resource tenure rights holders (including those holding legal and customary rights, as identified by the assessments conducted under Criterion 28), and benefit-sharing arrangements under the Benefit Sharing Plan.

Source: FCPF, 2013.

1.4 FOREST TENURE, CARBON TENURE, AND REDD+

Criterion 28 of the MF responds to the broad recognition that secure local land and forest rights provide an important enabling condition for effectively reducing carbon emissions while enhancing livelihoods and sustainably provisioning commodities (further details of the role of forest and carbon tenure in landscape-level or jurisdictional REDD+ can be found in Appendix 1). Secure tenure improves key effectiveness, efficiency, and equity dimensions of REDD+ (Table 1). Because tenure regimes in REDD+ landscapes or project areas are often unclear (Day & Naughton-Treves, 2012; Larson, Brockhaus, & Sunderland, 2012; Larson et al., 2013), there has been opposition to REDD+ from those fearing further marginalization. In the face of tenure ambiguity and insecurity, deforestation and degradation are expected to continue.

TABLE 1: TENURE'S ROLE IN PROMOTING EFFECTIVENESS, EFFICIENCY, AND EQUITY IN REDD+

Effectiveness	• The essence of REDD+ is to reward those who maintain or enhance the carbon sequestration of forests and compensate them for lost opportunities; this could include direct payment schemes to landholders, which would require a clear rights holder who has rights to exclude others. • The holders of rights to forest carbon must be held accountable in the event that they fail to fulfil their obligation—the "conditional" part of conditional incentives.
Efficiency	• Clear tenure rights reduce transaction costs, such as time and funds required for conflict resolution. • Secure tenure rights increase the policy options available, and thereby enable governments and project proponents to choose more cost-effective implementation strategies.

Equity	• When tenure is unclear or not formalized, forest people may be excluded from forests and/or from participation in REDD+ benefits; in particular, if REDD+ increases the value of standing forests, a resource rush may result that places the rights of current residents at risk. • REDD+ will inevitably prohibit certain uses of forest resources; this must be done with due process and compensation, and without increased hardship for poor forest peoples.

Source: Adapted from Larson, Brockhaus, & Sunderland, 2012, p. 157.

For successful REDD+ implementation, the design will need to clarify the relationship, if any, between the existing forest tenure arrangement and the new overlay of carbon tenure (Felicani-Robles, 2012; Peskett & Brodnig, 2011; Savaresi & Morgera, 2009; Takacs, 2009; Vhugen, Aguilar, Peskett, & Miner, 2012). The type of interlinkages that might exist between existing land and natural resource tenure and carbon tenure is a complicated one (Day & Naughton-Treves, 2012). Carbon is now a new "resource" that is subject to apportionment among the various stakeholders. Because carbon is an intangible asset given the way it is sequestered within trees and soil, there are attempts to create an identifiable, self-contained resource (a new class of asset) independent of its distributed physical biomass over which new rights and responsibilities can be established, mainly so that payments can be made within a results-based carbon finance approach.

In doing so, payments must be distributed among those who carried out the activities that led to avoided deforestation and degradation as well as additional carbon sequestration. As yet, there are no internationally agreed definitions of carbon tenure, rights, or ownership (Chapman et al., 2015; Vhugen, Aguilar, Peskett & Miner, 2012). Ownership of the forests, or substantive use rights to forests, could be used as the primary criteria for determining those most likely to have rights to carbon sequestered by forests (Felicani-Robles, 2012). The situation can become complex where the forestland is formally owned by the government, but the use and management of that forestland is carried out by local usufruct rights holders (as in Nepal). Where the effort of local communities have generated emission reductions, it is clear that they helped to create the carbon asset over a certain duration. Careful balancing is therefore needed when allocating carbon tenure rights across the spectrum of different types of rights holders within a given forested landscape.

One way of approaching this is to make a categorical distinction between rights to the diverse benefits that flow to those who sequestered the carbon (within the land, trees, soil, etc.) and the rights to the carbon credit itself (or the carbon ER Title) that will be calculated based on the landscape-level reference scenario. This approach has been proposed in the study of forest carbon ownership in Nepal, currently in review; in addition, it recommends that forest carbon should be considered part of the ecosystem services bundle (Belbase, Paudyal, Sijapati, & Luintel, 2015). In essence, the communities managing the forests would hold carbon ownership rights while the MoFSC would hold the carbon credit rights.

Typically, when payment is made for ERs at the project level, and where there is a spatially explicit or geo-referenced baseline, a clearer attribution between performance of specific rights holders and outcome is likely feasible. In contrast with such project-based REDD+, a landscape-level jurisdictional initiative with a range of forest tenure institutions (such as in this proposed ER Program), the Program will not be able to attribute ER to the performance of each individual forest tenure institution (Hite, 2015). The Carbon Fund recognizes that it will not always be possible to distribute funds within a landscape or jurisdiction that are direct proportional to contribution to ER. Countries will need to determine their approaches through their benefit-sharing protocols as well as "internal" carbon accounting methodologies[5], taking into consideration the projected ability of different tenure institutions to deliver specific performance or action targets.

[5] Presently, a range of different approaches are being developed to assess the effectiveness of varied types of land and forest tenure regimes in avoiding deforestation and improving forest cover. The ERPD will have to consider the extent to which such analyses are suitable for the ERPAA context. One approach has been to carry out a matching analysis that compares areas under a community-based tenure regime with similar landscape areas not under such management arrangements (see for e.g. Vergara-Asenjo & Potvin (2014)).

At best, reference levels for the Nepal ER Program could be measured at the district level. Therefore, the linkage between rights to the ER title, the ER achieved by participant communities, and the resultant eligibility for REDD+ benefits is not easy to decipher. Yet, it is clear that benefits will have to operate as incentives among existing rights holders in forest tenure institutions so the ER Program can achieve projected ERs over the given time frame with minimal risk. Moreover, the determination of benefits will have to consider that increasing carbon sequestration is likely to create significant costs for poorer and vulnerable groups by constraining activities for household provisioning of resources or income generation (Peskett & Brodnig, 2011).

As new findings on the lessons of jurisdictional REDD+ approaches emerge, it is clear that solely utilizing a results-based finance approach (involving a payment-for-opportunity cost) to achieve the necessary reductions in carbon emissions is not adequate to the task. Instead, a transformational development approach is needed to bring about a landscape-level change involving a range of coordinated forest planning and management interventions that synergistically adjudicate between multiple uses of the forest to reduce overall emissions. Within this approach, results-based finance will be part of the mix of finance and incentive tools to bring into play a new development model at the landscape level (Fishbein & Lee, 2015).

While there has been criticism that the purchase of ERs by the Carbon Fund, as established within the MF, does not adequately take into consideration the existing community-based forest rights (RRI & Ateneo School of Government, 2014), a tenure assessment as required by MF Criteria 28 and 36, in fact, provides an opportunity to bring clarity to these central tenure concerns. There is a need to design the ER Program so that the relationship between tenure rights, costs, and benefits (cash or a range of co-benefits) is equitably determined within and across each forest tenure type. Equally important for ER program design, is the institutional analysis of how each forest tenure type can potentially contribute to the aggregate ER goals, as well as how each forest tenure regime will change as a dynamic development transformations unfold within the landscape. The landscape's transition toward sustainable development requires an examination of the range of scenarios likely to emerge given prevailing economic, socio-cultural, political, and ecological trends so that a viable and equitable form of landscape-level forest management can be put into action.

An assessment of tenure systems and their governance within a forested landscape is not only needed for clarifying carbon tenure. It also helps with design of the following programming elements:

a) Identifying key REDD+ stakeholders

b) Establishing responsibilities for carbon sequestration

c) Enhancing forest management effectiveness

d) Developing tenure-specific incentives through equitable benefit-sharing mechanisms

e) Ensuring functioning dispute resolution systems

f) Identifying liability for reversals

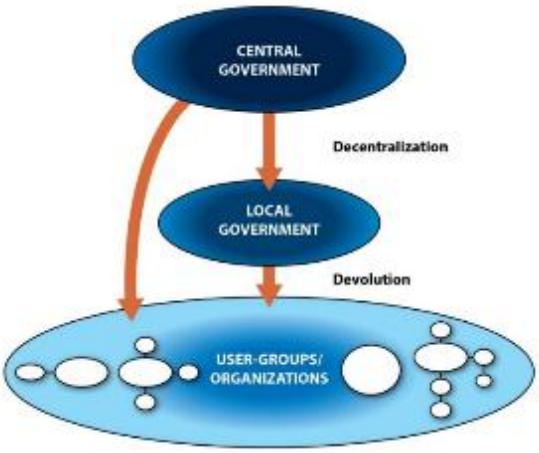
In light of this, it is necessary to understand how the complexity of land, forest, and other natural resource tenure arrangements will affect the successful development and implementation of REDD+ (Bluffstone & Robinson, 2014; Dokken, Caplow, Angelsen, & Sunderlin, 2014; Larson, Brockhaus, & Sunderland, 2012; RRI & Tebtebba, 2014; Rothe & Munro-Faure, 2013; Sunderlin et al., 2014). Attending to the multiple dimensions of tenure will minimize potential risks associated with any investment into REDD+ programs, reduce conflict, and build an equitable distribution of benefits (Duchelle et al., 2013). Assessing tenure arrangements within specific landscapes or jurisdictions will help develop a nuanced understanding of the benefits and risks over the life of the project (Bolin, Lawrence, & Leggett, 2013; Sommerville, 2011b).

1.5 RESEARCH FRAMEWORK

Natural resource tenure determines who is allowed to use which resources, in what way, for how long, and under what conditions, as well as who is entitled to transfer rights to others and how (Larson, 2013). This

requires attention to the multiple institutional scales (local communities, local and central governments, donors, federations, nongovernmental organizations [NGOs], and international actors) through which the governance of tenure occurs (Doherty & Schroeder, 2011). This understanding can be developed through an analysis of how laws, policies, and regulatory frameworks established by the central government intersect with rules created at the local landscape level (by district government offices, community-based governance bodies, or firms) to create a particular allocation of tenure rights and responsibilities within a specific forest (Figure 6). In practice, there is usually a continuum of land and forest tenure types at work in any given forested landscape. How tenure arrangements function depends on their broader socioeconomic context leading to specific types of forest and socio-economic outcomes.

FIGURE 6: RELATIONSHIP BETWEEN GOVERNMENTS (CENTRAL OR LOCAL) AND LOCAL USER GROUPS



It has been pointed out that the implicit result of the "success of scholarship on common property management is that nearly all research about community governance of natural resources, forest tenure, and rights included has focused on the local community sphere" (Andersson, 2012, p. 8). Inadvertently, therefore, tenure analysis has attended to local-level practices without sufficiently focusing on how they are embedded in higher-level governance and regulatory frameworks.

This assessment therefore examines three key dimensions of a tenure arrangement: the tenure institution, the tenure system, and tenure security. These three dimensions are defined in the following way:

1. The *tenure institution* exists at all relevant scales of governance and is defined by the decision-making process through which property rights to land and natural resources are allocated, used, and managed within society (USAID, 2013). It is useful to start by examining whether the state establishes tenure rights in law (and provides support for the implementation and adjudication of the law), how the state designates government-managed and other forest tenure types, the forest management goals, how well the state administers tenure rights, and whether the state capacitates rights holders in practice and resolves disputes (WRI, 2013). We can then examine how informal or formal decisions are made within local-level tenure institutions about what type of governance process should be instituted (including who can be members, who will be executive decision-makers), as well as policy objectives (what the multiple forest management objectives will be, and how the objectives will be achieved). These tenure institutions are important because they will need to respond to new developments such as REDD+ or climate change adaptation (Andersson, 2012).

2. The *tenure systems* sets out the bundles of property rights and responsibilities that define who can hold and use resources, for what length of time, and under what conditions (USAID, 2013). Based on the approach set out by Schlager and Ostrom (1992), the bundles include access, use, management, exclusion, and alienation rights (see Table 2). No matter the overall type of forest tenure arrangement,

the details of the bundles will vary. An analysis of how specific bundles are allocated among various rights holders (state [central and local], local management community or group, household/individuals, and firms) provides greater insight into how the benefits and burdens are distributed.

TABLE 2: PROPERTY RIGHTS AND RESPONSIBILITY BUNDLES

ACCESS	Right to enter a designated area and use its resources on location.
USE OR WITHDRAWAL	Use or withdrawal rights include the right to extract, collect, or harvest a resource, often in specified quantities and at particular times/locations by households/individuals. Does not necessarily imply that the resource will be replenished. In a forest, this can include firewood, fuelwood, leaves, timber, non-timber forest products (NTFPs), and grazing rights.
MANAGEMENT	The most complex bundle of rights. Involves development of a set of rules that: a) determine how resources should be used and replenished as well as how group income will be shared and utilized (including any investments in improvements); b) decide how compliance with these rules should be monitored and enforced; c) decide how compensation for any losses are determined; and d) decide how any disputes are to be adjudicated.
EXCLUSION	By deciding who can use the resource, outsiders who could degrade resources can be controlled. This is necessary to protect the resource base, gain benefits from resources and payment for ecosystem services programs, and ensure availability for local users. Could be exclusionary if it impinges on the unrecognized rights of some customary or poorer users.
ALIENATION	The right to lease, transfer, bequeath, or sell the land or a tenure right; can also include the right to use it as collateral. Typically, individuals or firms with land title are possessors of formal alienation rights. Communities on state land or communities with title typically do not have alienation rights.

3. *Tenure security* is the perception by users that their land and resource rights will be both recognized by others and protected from imposition, dispute, or approbation (USAID, 2013). Security of tenure can cover any specific right or it can be a generalized sense of assurance covering a set of rights. It should not be confused with a limited set of rights that are clear. It conveys the sense that investments of time, labor, and capital over a certain duration will produce benefits to the rights holder. Additionally, tenure security provides leverage for negotiating access to more authority and entitlements. While clarity of tenure rights is important, it is their actual implementation that determines the security level. There can be multiple sources of security such as law, titling, strong administration, social recognition, and ownership of independent assets that, in total, contribute to a perception of strong security. It is this overall social, legal, and cultural legitimacy of the rights that is pivotal. Titling in of itself may not enhance security if it cannot be defended in practice. While duration of tenure rights is important, it is the strength of that right that is crucial. Tenure security is important because it enables economic growth, social development, poverty alleviation, and effective natural resource management.

1.6 RESEARCH METHODOLOGY

Based on the MF's Criterion 28, this tenure assessment examines the current status of nine of the ten forest tenure regimes in the ERPAA, existing conflicts or unclear claims, and likely impacts of the proposed ER Program on existing tenure arrangements.[6]

Methodologically, the assessment involved:

a. A literature review of key recent research publications and grey literature covering forest tenure and management in Nepal;

[6] The smallest of the ten forest tenure regimes found in the ERPAA, RFs, is not addressed.

b. An examination of national laws and forest policy documents and statistics reports;

c. Interviews with key stakeholders and expert informants in Kathmandu (government agencies, donor agencies, international organizations, forestry and indigenous people's federations, relevant CSOs and NGOs, and researchers) on forest management; and

d. Fieldwork in two districts within the Middle Hills (Dolakha and Dadeldhura) and eight of the 12 districts within the ERPAA (Bara, Parsa, Chitwan, Kapilbastu, Dang, Bardiya, Kailali, and Kanchanpur). The ERPAA districts were selected primarily on the basis of dominance of CF and/or CoF, dominance of PAs and BZs, and existence of key conflicts drawing national attention (such as Churia conservation or illegal settlements). The fieldwork involved interviews with District Forest Officers (DFOFs and key staff) and focus group interviews with members of forest user or management groups, as well as relevant CSOs, expert informants, and targeted households.

The fieldwork was carried out over six weeks from late August to early October 2014. Appendix 2 provides a list of all persons and groups interviewed.

2.0 KEY FINDINGS OF LAND AND NATURAL RESOURCE ASSESSMENT

The Terai plains (also called Madhesh) stand in stark contrast to the image of Nepal as a mountainous country. The Terai is a long and narrow strip of mostly plains land (about 20 miles wide and 500 miles long) that runs across the length of Nepal's border with India. The Terai is the smallest of Nepal's three eco-belts, covering 23 percent of the total land area; the High Mountains cover 35 percent and the Middle Hills 42 percent (Mishra, Uprety, & Panday, 2000). 20 of the country's total 75 districts fall within the Terai.

The ERPAA includes 12 districts (from Rautahat in the east to Kanchanpur in the west, see Figure 2): of these, four districts (Rautahat, Bara, Parsa, and Chitwan) are in the Central Development Region; three districts (Nawalparasi, Rupandehi, and Kapilbastu) in the Western Development Region; three districts (Banke, Dang, and Bardiya) in the Mid-Western Development Region; and two districts (Kailali and Kanchanpur) in the Far-Western Development Region.

2.1 EXTENSIVE AND CONTINUING NATIONAL FOREST TENURE DEVOLUTION

Developing a REDD+ program within a landscape in which ten different forest tenure regimes operate requires an understanding of why different types of devolution have been developed, and how well they have performed to date both in terms of forest conservation as well as livelihoods benefits. This section therefore assesses the status of the national process of forest tenure devolution by examining the organizational, legal, and policy frameworks that underpin the range of tenure types and evaluating the rationale, key agents of change, and success of devolution (as well as the merits of the proposed direction of further devolution of GMFs in the ERPAA). In doing so, it will be possible to identify the likely key tenure institutions within the ERPAA that will be the primary contributors to achieving ERs. An understanding of this overall devolution approach adopted by the MoFSC will help to contextualize the detailed analysis of tenure governance institutions and related bundles of property rights within each tenure type found in the ERPAA as addressed in Section 2.8.

Within the global forest landscape, Nepal is a leader in the devolution of forest management to local communities through innovative forms of participatory forest governance. The World Bank's Program on Forests (PROFOR) recently concluded in its Nepal assessment that "the forest sector is nearly unique in the wide range of social interests it contributes to" (Magrath, Shrestha, Subedi, Dulal, & Baumback, 2013, p. 17). This has involved not simply one devolved forest tenure modality but a range of community-based forest tenure approaches. Devolved forest tenure institutions today cover about 40 percent of the forested land in Nepal, with the highest coverage in the Middle Hills. While all national forestlands remain under the ownership of the GoN, every devolved forest tenure arrangement is based on a usufruct[7] set of property rights. Of the ten forest tenure institutions in the ERPAA, eight are on national forestlands ranging from centralized to fully devolved systems. Additionally, there are PFs and PLFs (on institutional lands under the District Development Committee [DDC]). Each of the forest tenure types is underpinned by a set of legal,

[7] Usufruct refers to the right (temporary or long-term) to enjoy the use and benefits of another's property without substantially reducing its value.

policy, and regulatory frameworks that govern their objectives, establishment, duration, governance, and government oversight. This has created a complex national forest tenure governance framework that regulates these diverse tenure institutions.

Although all ten forest tenure types are found in the ERPAA, there has been no tailored strategic guidance for overall forest management in the Terai belt until the 2000 National Forest Policy. Moreover, the devolution of specific types of forest tenure in the Terai has not been as smooth a process as it has been in the Middle Hills. Within any given landscape, there is no coordination by MoFSC in terms of integration across tenure types to achieve specific objectives. Therefore, this remains an important arena for technical and policy analysis as well as knowledge generation and learning. Recently, there has been discussion within the MoFSC of developing a landscape-based forest management strategy that will require closer attention to the socio-economic, physiographic, and ecological dimensions of specific landscapes within Nepal. Given the current absence of a landscape-based approach, the ER Program will need to strengthen the forest planning and management process at multiple scales in order to promote improved programmatic integration across the ERPAA. In doing so, achieving ERs will require adopting a multiple-use approach (increasingly promoted by the MoFSC) that seeks to balance provisioning for household forest product needs, meeting growing timber demand in domestic markets, and strengthening biodiversity conservation.

There is high forest dependency among Terai communities, especially its large landless population

Of the forest types, CF has the longest history and PLF is the most nascent. While CF has been accorded priority within the MoFSC's work program since its inception, there has been no coordination in the development and implementation of these different devolved forest tenure types, nor any specific consideration of the mix of forest tenure types appropriate to local physiographic or ecological conditions. That said, this devolution process has already achieved considerable improvements in forest cover, support for social welfare, and increased household livelihood benefits (Acharya, Adhikari, & Khanal, 2008; Kanel, 2012; Luintel & Chhetri, 2008; Singh, 2006). The draft Forest Sector Strategy (FSS) covering 2015–2025, that underwent public consultation, has proposed further tenure devolution that will significantly expand the area of national forestlands under CF. In addition, the strategy advocates more intensive forms of forest management, especially for the Terai and inner Terai, in order to improve the timber demand-supply dynamics.

Given significant improvements in forest condition to date, the ER Program design will need to consider how the future income streams and benefits from further work to reduce deforestation and sustainably manage forests will be perceived by tenure rights holders who have already substantially invested in the regeneration and improvement of their forests. This will involve understanding the relative niche contribution of each forest tenure type to overall ER, as well as how an integrated set of interventions can promote sustainable forest management in aggregate across the range of diverse forest tenure institutions currently in existence. An approach that solely focuses on the primary tenure types alone will result in leakage and externalities, leading to overall inefficiencies and a fragmented result. This assessment therefore attends to both issues of performance of individual tenure types as well as the landscape-level dynamics of ten institutions working in a mosaic formation.

The achievements of forest tenure devolution at this scale are particularly notable because Nepal is a poor, largely mountainous, and agrarian country that possesses considerable diversity in the form of multiple ethnic,

religious, and linguistic groups. Nepal has a Human Development Index of 0.54 in 2013 (globally ranked at 145 within the "low human development" index category) and a Gross National Income per capita of $2194 (UNDP, 2014). The forest sector retains an important role in meeting national development goals because roughly 84 percent of households rely on wood products for domestic needs and agricultural/livestock production (ICEM Asia, IIED, & SchEMS, 2014). In particular, with 25 percent of its population below the poverty line, forests are a critical resource for meeting basic survival requirements. Any REDD+ intervention will therefore have to be designed in ways that acknowledge the strong forest dependencies of users, especially the poor and marginalized. Reliable access to forests depends on household membership within particular forest tenure institutions.

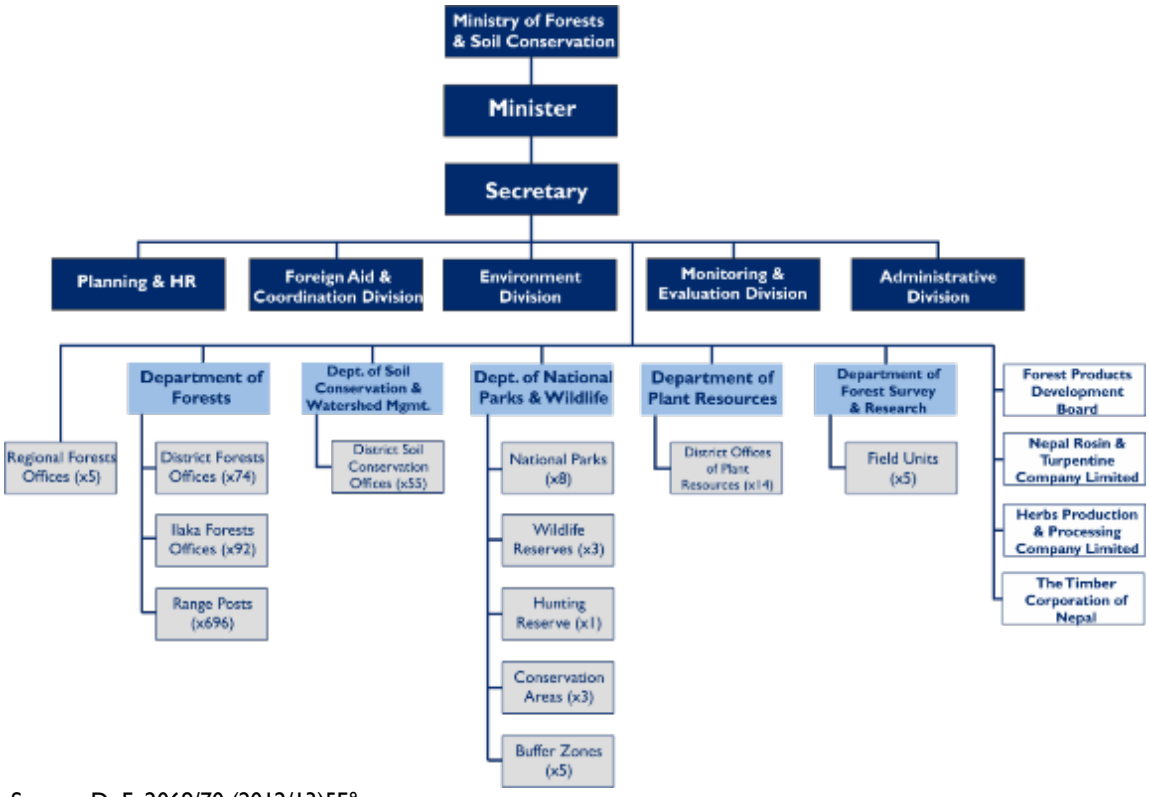
Transporting firewood from a community forest in Dang District

Nearly all forest tenure systems in Nepal are rooted in two main pieces of national legislation: the 1993 Forest Act and the 1973 National Parks and Wildlife Conservation Act (NPWC Act, last amended in 1993). This timing is explained by the fact that the democracy movement that grew from the 1990s had a significant influence on the government adopting both a devolved and decentralized approach to governance, as well as a focus on social inclusion and poverty alleviation. Some tenure institutions such as CF, LHF, and BZCFs have been established through law, while CoFs, which were introduced through the 2000 National Forest Policy, and PLFs (which are a project-led initiative) did not originate in legislation.

These two laws originate in two different departments of the MoFSC (Figure 7)—the DoF and DNPWC—that do not currently coordinate their activities. Each department has different administrative structures at the district level (Figure 8). Since the RIC is located within the MoFSC, it is in a position to coordinate ER Program implementation across its departments, other ministries, donor agencies, CSOs, and communities. Despite the devolution promoted through these laws, the district-level government has only had a very limited role in their operation and is only involved in enabling the establishment of PLFs as community-based forestry groups on the DDC's institutional lands.[8] Despite the decentralized governance approach established in the 1999 Local Self-Governance Act (LSGA), DDCs and Village Development Committees (VDCs) have a very limited role in forest management, let alone coordination across particular eco-belts or landscapes.

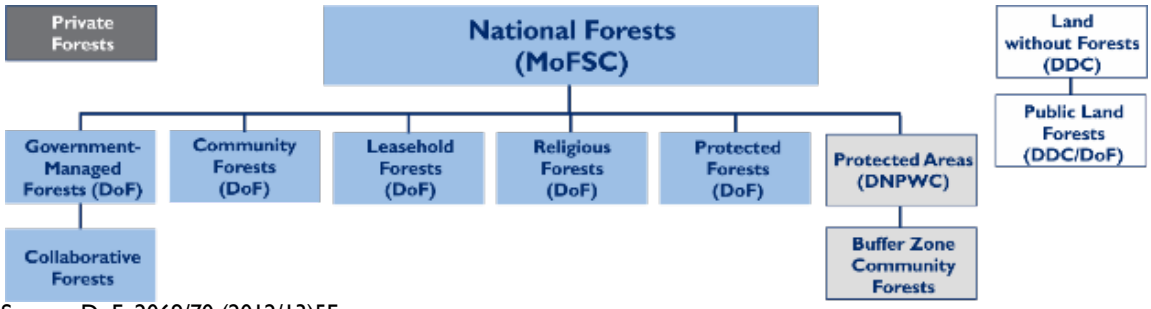
[8] Under the 1999 LSGA, Nepal has been divided into 5 development regions, 14 administrative zones, and 75 districts. Within DDCs are VDCs (each made up of 9 wards) and urban municipalities. The aim has been to boost local participation (especially of the marginalized) in the local planning process (Dhungel et al., 2011). In the absence of elections for DDCs and VDCs since 2002, VDCs are run by a committee headed by VDC secretaries and two government employees. There is no government-constituted committee at the DDC level; instead, the Local Development Officer operates and manages the DDC. Through an executive decision, the government established a consensus-based "all-party mechanism" in accordance with the Interim Constitution to advise government employees at DDC and VDC levels. The bulk of DDC funds come from sector ministries. District-level planning has therefore been operating in a skeletal form for more than 10 years.

FIGURE 7: MOFSC ORGANIZATIONAL CHART



Source: DoF, 2069/70 (2012/13)5F[9]

FIGURE 8: INSTITUTIONAL STRUCTURE OF FOREST TENURE TYPES



Source: DoF, 2069/70 (2012/13)5F

Each forest tenure type fulfils a specific niche function within the forested landscape and, as such, has its own distinctive governance approach as well as forest management and benefit distribution goals. While there has been no organized plan, in terms of scope or timing, for introducing each different forest tenure modality into overall forest sector management, the relative niche contributions of each tenure type are clear. There are no criteria set out by the MoFSC, in agreement with major stakeholders, as to which type of forest land should be allocated to each particular type of forest tenure institution. It is an evolving process that continues to be elaborated and contested, with new tenure types being introduced according to emergent needs. BZs,

[9] Throughout this document, there are references to the Nepali calendar year. The Nepali calendar is about 57 years ahead of the English calendar; a year written as 2069/70 BS refers to a year that overlaps with 2012/2013. BS stands for Bikram Sambat and indicates the use of the Nepali calendar protocol.

CFs, CoFs, and PLFs were all introduced in response to newly recognized social, economic, or environmental requirements. When the 1989 Master Plan for the Forest Sector (MPFS) was created to set out a FSS for 25 years, CF was given priority support in the DoF's work program (followed by LHF), which partially explains its preponderance within the landscape.

Forestlands in Nepal are divided by law into two main categories: national forestlands under the jurisdiction of the government and private forestlands (owned by individuals or firms). According to the 2007 Interim Constitution of Nepal, 1993 Forest Act, and the 1973 NPWC Act, the state owns all forestlands outside of private forests. For the purposes of determining carbon tenure, it could be postulated that the government is the ultimate holder of title to carbon sequestered on national forestlands. However, given the current and proposed forest tenure devolution from 2015 to 2025 being discussed in the draft FSS, the level of ERs achieved will primarily depend on the ground-level efforts of member households in the various community-based forest tenure institutions together with the support of District Forest Office (DFO) staff and active CSOs in the ERPAA. Therefore, core decisions will need to be made regarding benefits commensurate with the level and duration of effort required to obtain ER goals. This could be carried out within the RIC or through multi-stakeholder consultations.

The success of forest tenure devolution has involved two key dimensions: the establishment of new and effective governance institutions (rather than relying on any existing village governance institutions), and the promotion of an inclusive, participatory approach that calls for the government forest staff to adopt a facilitative rather than top-down role. The MoFSC has been consistently committed, despite some recent attempts to recentralize power (discussed further below), to forest tenure devolution starting from the late 1970s. An unsuccessful attempt to nationalize forest management in the late 1950s led to large-scale random deforestation (MoFSC, 2012; Ojha, 2014). This prompted the first attempt at forest tenure devolution, through the village governance institution known as the *panchayat*. This was also unsuccessful due to the prevalence of an overly top-down approach despite a proposed commitment to a participatory orientation. Therefore, the new 1989 MPFS introduced a completely new institutional form called the community forest user group (CFUG) that would be able to directly manage forest patches in nearby national forestland (that had typically been traditionally managed by villages). In parallel, it transformed the role of the government's forestry staff from command-and-control to a facilitative and catalytic one. Since then, Nepal has undergone a number of key devolution phases adapting to unfolding conditions (Table 3).

TABLE 3: KEY PHASES OF FOREST MANAGEMENT

Forest Management Phase	Forest Management Orientation
Pre-Nationalization	Until 1957 – Rana dynastic rule managed forests for timber production and recreational hunting; communities managed local forests through customary practice.
Nationalization	From 1957 – Private Forests Nationalization Act; continued until late 1980s.
Devolution I: Panchayat	1978 – Panchayat Forest and Panchayat Protected Forests devolved control to local village-level institution called panchayats.
Devolution II: Community Forests	1989 – Master Plan for Forestry Sector introduced the Community Forest User Group concept; continues to this day.
Devolution III: Collaborative Forests	2000 – Revised National Forestry Policy introduced the collaborative forest concept primarily for the Terai; continues to this day.

Table 4 sets out the definitions of each forest tenure type, while Table 5 identifies the key characteristics of each forest tenure modality explaining the niche role of each forest tenure type and the corresponding governance framework.

TABLE 4: CLASSIFICATION OF DIFFERENT CATEGORIES OF FOREST TENURE

National Class	Definition
Private Forest	A forest planted, nurtured, or conserved in any private land owned by an individual pursuant to prevailing law.
National Forest	All forests excluding private forest within Nepal, whether marked or unmarked with forest boundaries and shall include waste or uncultivated lands or unregistered lands surrounded by the forest or situated near the adjoining forest as well as paths, ponds, lakes, rivers or streams, and riverine lands within the forest.
Government-managed Forests	A national forest managed by the GoN.
Protected Forest	A national forest declared protected by the GoN in consideration of environmental, scientific, or cultural importance.
Community Forest	A national forest handed over to a CFUG for its development, conservation, and, utilization for the collective interest.
Collaborative Forest	A government-managed forest area handed over to a CoF group to be managed in partnership with the DFO.
Leasehold Forest	A national forest handed over to an institution established on the prevailing laws. Institutions can be industry-based for growing forest products, or community-based for the purposes of poverty alleviation and forest conservation and development.
Religious Forest	A national forest handed over to any religious body, group, or community for its development, conservation, and utilization.
Protected Area System	Geographically defined areas (e.g., national parks, wildlife reserves, hunting reserves, and conservation areas, and strict nature reserves) that are regulated and managed to achieve specific conservation objectives.
Buffer Zone Community Forest	Forests in buffer zones established around PAs managed by local community forestry groups (different from regular CFUGs).
Public Lands Forest	An emerging community-based forest tenure type on public institutional lands under the jurisdiction of the DDC.

Source: FAO, 2010.

TABLE 5: MAJOR FOREST TENURE REGIMES IN NEPAL

Management Regime	Land Ownership	User Rights	Management Authority	Law (L) or Policy (P) Basis	Current Land Use
Private Forests	Individuals and organizations	Individuals and organizations	Individuals and organizations	L	Forest plantations
National Forests					
Government-managed Forest	GoN	GoN	DoF	L	Managed for government revenue
Protected Forest	GoN	GoN	DoF	L	Managed for watershed and biodiversity conservation
Community Forest	GoN	UGs	Local communities/UGs	L	Managed for household needs and income generation
Collaborative Forest	GoN	UGs (partial use rights)	State agencies and UGs	P	Managed for forest products and revenue generation
Leasehold Forest	GoN	Leasehold groups	Leasehold groups	L	Managed for fodder and income generation among poor

Management Regime	Land Ownership	User Rights	Management Authority	Law (L) or Policy (P) Basis	Current Land Use
Religious Forest	GoN	UGs	Local communities/UGs	L	For use by religious institution
Protected Area System	GoN	GoN	DNPWC	L	Biodiversity conservation and eco-tourism
Buffer Zone Community Forest	GoN	UGs	Local communities/UGs	L	Biodiversity conservation, household-use forest products, and eco-tourism
District Development Committee					
Public Lands	GoN	UGs	Local communities/UGs	P	Forest plantations and agro-forestry in pilot process

Among the community-based forest tenure types involving user groups, CF represents the most widely established form today with some 18,133 CFUGs involving 2.24 million households covering about 30 percent of national forestlands (Kanel, 2012). Over 95 percent of all forests under community-based forest tenure types fall under CF, 2.4 percent under LHF, and 2.25 percent under CoF (DoF, 2069/70 [2012/13]). The specific distribution and patterns are discussed further in Section 2.2. Starting in the 1990s, the area under community control has continually grown (Table 6): from 10.38 percent of all forests in 1990 to 33 percent by 2005. Today this stands at about 40 percent. By comparison, there was an insignificant growth in the area covered by PRF over the same time frame, from 0 percent to 0.063 percent between 1990 and 2005.

TABLE 6: FOREST OWNERSHIP AND MANAGEMENT RIGHTS

Forest Ownership and Management Categories	1990 (1000 ha)	1990 (%)	2000 (1000 ha)	2000 (%)	2005 (1000 ha)	2005 (%)
Private Ownership	0	0	2	0.051	2.3	0.063
Public Ownership	4,817	100	3,898	99.95	3,634	99.94
Public Administration	4,317	89.62	3,133	80.33	2,412	66.33
Individuals	0	0	0	0	0	0
Private Corporations and Institutions	0	0	15	0.385	22	0.61
Communities	500	10.38	750	19.23	1,200	33
TOTAL	4,817	100	3,900	100	3,636.3	100

Source: FAO, 2010.

Within the three main eco-belts of the Terai, Middle Hills, and High Mountains (Figure 9), a large majority of CFUGs (72 percent) are found in the Middle Hills with only 12% covering the Terai where CF has faced greater obstacles in its expansion (Table 7). The number of households per CFUG in the Middle Hills (11) is significantly smaller than what is typically found in the Terai (233). This is primarily an effect of the topography and settlement pattern. Devolution has left roughly 60 percent of the national forestlands under the direct control of the government as GMFs or PFs (under the authority of the DoF) and PAs and BZs (under the authority of the DNPWC). CoFs, LHFs, and RFs (all under DoF) and PLFs (under DDCs) occupy much smaller areas of land.

FIGURE 9: NEPAL'S THREE ECOLOGICAL BELTS: TERAI, MIDDLE HILLS, AND HIGH MOUNTAINS

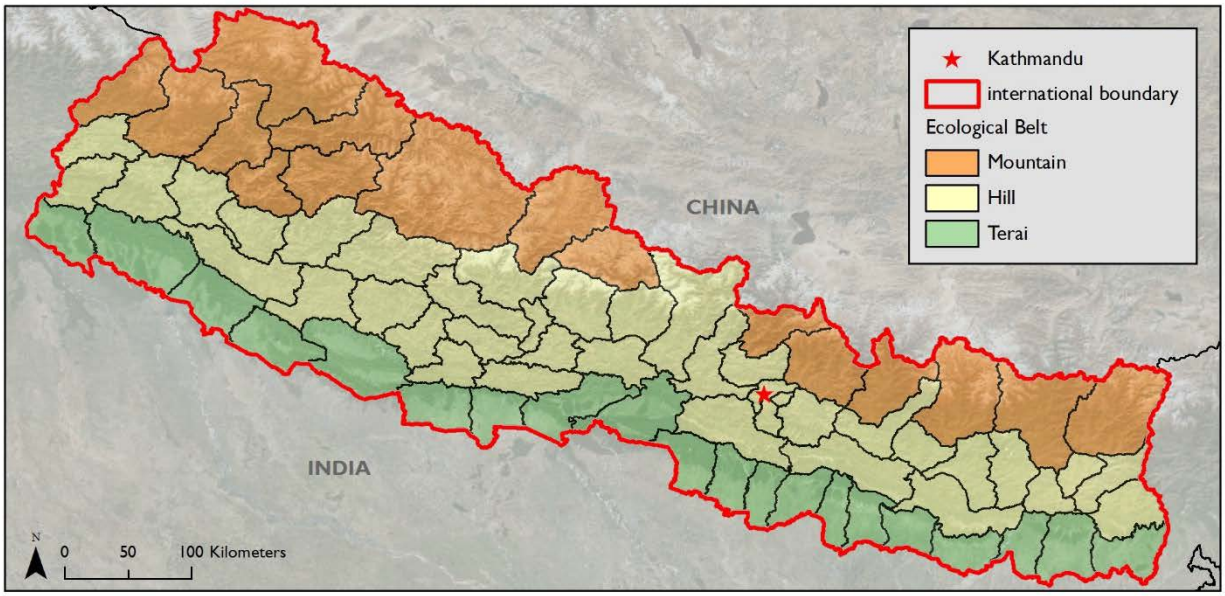


TABLE 7: TOTAL NUMBER OF COMMUNITY FOREST USER GROUPS BY ECO-BELT

Eco-Belt	# of CFUGs	% of total	Total area (ha)	% of total	Mean area/ CFUG (ha)	# of households	% of total	Mean household #/CFUG
High Mountain	2,875	15.86	270,370	15.90	94.04	294,532	13.16	102.46
Middle Hills	13,131	72.41	1,114,681	65.57	84.89	1,447,404	64.68	11.02
Terai/Inner Terai	2,127	11.73	314,997	18.53	148.09	495,259	22.13	232.84
TOTAL	18,133		1,700,048			2,237,933		

Source: DOF, 2069/70 (2012/2013).

This evolving process of devolution took place through the joint efforts of the MoFSC, local communities, active and diverse CSOs, and the sustained support of multiple international development and national donor agencies. Donor agencies have played a significant role, spending approximately US$141.40 million since 1996 on the forestry sector in Nepal (Ojha et al., 2009).[10] The effect of major pro-democracy political transformations in Nepal on forest tenure devolution, starting in the early 1990s, is widely acknowledged. The Federation of Community Forestry Users, Nepal (FECOFUN) was created in 1995 as a grassroots network engaged in policy advocacy and support for user groups. It now covers about 90 percent of all CFUGs. Starting with the establishment of a multi-party democratic system in 1990 and leading to the end of the monarchy in 2008, devolution has been propelled forward with an emphasis on poverty alleviation and social inclusion. This push for community-based natural resource tenure devolution was not only the impetus

[10] In 2012, the major donor agencies that had supported the MoFSC in its forestry programs over the last decade (e.g., the British, Swiss, and Finnish) joined to form a new forestry program. Instead of a centralized approach working directly with the government, the Multi-Stakeholder Forestry Program (MSFP) would collaborate to improve livelihoods and the resilience of poor and disadvantaged people in Nepal through the government and a range of CSOs. In order to enhance Nepal's forest sector contribution to economic growth, poverty reduction, and response to climate change, the MSFP works on multiple levels to strengthen government capacity, build NGO capabilities, and support a range of forestry management modalities (including CF, CoF, PLF, and PRF) in the context of climate change adaptation and mitigation needs. It has scaled up its reach from 18 to 61 districts.

for the 1993 Forest Act and 1995 Forest Rules, but also for the fourth amendment to the 1973 NPWC Act to introduce a new community-based management approach in the BZs of PAs. In the early 1990s, support from International Fund for Agriculture Development (IFAD) also enabled pro-poor leasehold forestry to be started in a few districts.

FECOFUN office in Bardiya District

While the first phase of CF focused on forest conservation, its second phase, beginning in the early 2000s responded to Nepal's National Ninth Five-Year Plan's focus on social inclusion and poverty alleviation. From its start, CF rapidly expanded and became a development success story by rehabilitating once-denuded forest slopes. CF has thereby become the institutional backbone of rural development and peace, especially in the absence of elections for the DDCs and VDCs since 2002 (Chapagain & Sanio, 2012). Despite these very significant achievements indicating its relatively high level of autonomy and tenure security, it is well recognized that the governance and management methods adopted within devolved forest tenure types such as CF still need considerable improvement.

For the ER Program, the fact that the forest tenure devolution has led to a decline in the rate of national forest cover loss forms a key indication of likely future trajectories for improving sustainable forest management. From 2005–2010, this rate was almost at zero percent (Table 8). At present, Nepal's forest cover is about 25.42 percent of the total land area. A detailed study of landscape-level transformations (involving eight VDCs of the Indrawati watershed in Sindhupalchok District within the Middle Hills) showed that forest condition improved in all forest tenure regimes (CF, GMF, and PRF), with community forests exhibiting the best increases in the areas of newly created forestland (33 percent) and enhancement of existing forests (20 percent) (Helvetas Swiss Intercooperation, 2012)[11].

TABLE 8: FOREST AREA AND ANNUAL CHANGE RATE

	Forest Area (1,000 ha)				Annual Change Rate (%)		
	1990	2000	2005	2010	1990–2000	2000–2005	2005–2010
Total	4,817	3,900	3,636	3,636	-2.09	-1.39	0
Primary Forest	391	548	526	526	3.43	-0.82	0

Source: FAO, 2010.

So far, however, forest management has given greater importance to forest conservation and meeting basic livelihood needs than to income generation or timber production (Ojha et al., 2009). Given the burgeoning domestic demands for timber as well as the considerable opportunity to generate income from forests, a shift is now taking place toward building shared prosperity from sustainable and productive forest management (Macgrath, Shrestha, Subedi, Dulal, & Baumback, 2013). In light of Nepal's expanding timber imports from Malaysia, Myanmar, and other Asian countries, there is clearly strong domestic demand. In order to make this transition, better understanding of forest ecology and locally suited silvicultural practices are needed, as well as stronger governance and law enforcement institutions. Recognizing the achievements of forest tenure devolution to date, the design of the ER program, therefore, needs to carefully attend to its positioning

[11] Although recent research indicates that there is no significant difference in carbon stock increases within CF and non-CF sites (see Bluffstone et al., 2014), this finding is primarily the result of how CFs have been legally defined. Good collective action existed in sampled CF and non-CF sites.

within this emerging set of forest management objectives as set out in the draft FSS covering the period 2015–2025 (MoFSC, 2015). Indeed, the ER program will likely help to achieve the FSS goals within the Terai.

The draft 73-page FSS was released in late 2014 for public consultation (MoFSC, 2015). It clearly seeks to address a new context that includes a multi-stakeholder forestry program, post-conflict political environment, outmigration, new constitution, as well as climate change and natural disasters. The strategy was developed by an expert team with support from donors and national stakeholders, and the process involved extensive consultation throughout Nepal. The draft report acknowledges the significant positive gains derived from forest tenure devolution to date:

- Progressive restoration of forests in the Middle Hills through participatory processes;
- Expansion of protected areas;
- Growth in populations of specific charismatic species;
- Increase in manufacture and export of forest products (plywood and medicinal and aromatic products); and
- New measures to address climate change.

At the same time, the strategy recognizes a number of challenges that the ER Program will need to confront in order to build integrated and multiple-use programming:

- Continued deforestation and watershed degradation in the Terai and Churia;
- Forest production not matching the potential;
- Only a weak contribution on the part of the forestry sector to employment and income generation;
- Limited private forestry;
- Illegal timber trade;
- Ad hoc decision-making governing forest management and product supply;
- Limited strategy to climate-proof forests; and
- Weak implementation of gender and social inclusion within forest sector governance.

Based on the key FSS milestones established for forest management by 2025 (Table 9), it is clear that further devolution, particularly of CF, is a major component of the FSS. This will be carried out by better forest management planning as well as intensive forest management methods.

TABLE 9: FSS MILESTONES

Where we are in 2015	Where we will be in 2025
FOREST MANAGEMENT	
Forest (forest and shrub-land) covers 39.6% of Nepal's land area.	Forest (forest and shrub-land) covers at least 40% of Nepal's land area.
Approximately 50% of Nepal's forest is covered by forest management plans.	All forest areas of Nepal covered by forest management plans (of various types) are up to date, being implemented, and publicly available.
Forest under community-based management comprises 39.7% of Nepal's forest area.	Forest under community-based management comprises at least 60% of Nepal's forest area.
Community forest covers 1.7 million ha (29% of Nepal's forest area).	Community forest covers 2.33 million ha (40% of Nepal's forest area).

Where we are in 2015	Where we will be in 2025
Collaborative forest covers 0.93% of Nepal's forest area.	Collaborative forest covers 4.0% of Nepal's forest area.
Leasehold forest covers 0.73% of Nepal's forest area.	Leasehold forest covers 1.5% of Nepal's forest area.
Private forest covers an area of 54,900 ha.	Private forest covers 200,000 ha.
Approximately 0.4% (200,000 ha) of Nepal's forest is intensively managed.	About 50% of Terai and inner Terai forests and at least 25% of Middle Hills and mountain forests are intensively managed.

Source: MoFSC, 2015.

Critical assessments of the FSS indicate a number of issues requiring attention. At an administrative level, given that the government budget for the forest sector is declining, it is unclear where the support for more intensive approaches will come from. Broadly speaking, although the FSS provides a broad and integrative vision, it conveys little information on how the current techno-bureaucratic paradigm (that offers only limited public participation in forest planning) will change (Ojha et al., 2015). What are the specific changes that will need to be instituted to improve forest management and planning through careful tailoring of approaches according to physiographic conditions? For GMFs, particularly, how will the prevalent problem of de facto open access be reformed? While the FSS calls for the recognition and inclusion of traditional and customary users, it did not set out any process for meeting this objective (NEFIN, 2014).

Firewood lots ready for transportation by community forest members in Dang District

Supplementing the perspectives of the FSS are two important recent assessments. A concerted effort has been undertaken to evaluate the current timber market with a view to reforming pricing structure, supply structures, and regulatory systems (Kanel et al., 2012; Magrath, Shrestha, Subedi, Dulal, & Baumback, 2013). This work is being driven in part by the mandate to improve economic opportunities at large within the forest sector, reduce unofficial kickbacks, and the need for better understanding of how timber market dynamics will affect REDD+ initiatives and carbon sequestration. PROFOR was commissioned to provide strategic guidance on approaches to improve resource mobilization, incentives, and governance in Nepal's forestry sector (Magrath, Shreshta, Subedi, Dulal, & Baumback, 2013). While recognizing that considerable gains have been achieved through CF expansion, the PROFOR report asserts that the government needs to bring significant improvement to both timber production and timber revenue generation. It calculates, based on conservative figures, that Nepal's forest sector could generate US$180 million annually and create employment for 4.8 million people from sustainable timber harvests, some 20 times what is being currently achieved. This stands in stark contrast with current official forest revenue that has decreased from US$9.5 million in 2004 to US$4.18 million in 2006 (Magrath, Shreshta, Subedi, Dulal, & Baumback, 2013). In PROFOR's view, parallel types of deficiencies can be found in other areas of poverty reduction, biodiversity conservation, hydrology, and tourism.

Another study by a Nepalese expert group provides a detailed analysis of current forest product flows in order to identify whether and how increased timber production can be reconciled with REDD+ goals (Kanel et al., 2012). It concluded that there will be timber shortages in the Terai but surplus in the Hills and mountains. The combined effect of: a) difficult terrain and high transportation costs of timber supply from the Hills to the Terai; b) sustained demand for Terai timber in the Middle Hills urban markets (Kathmandu and Pokhara); and c) a growing population in the Terai means continued deforestation pressures in the Terai. The

study consequently proposed a series of recommendations to ensure that Terai forests can be sustainably managed to meet growing demand, REDD+ objectives, and biodiversity conservation goals. On the basis of scenario projections, it indicated that improved timber supply is best met from CF and CoF rather than GMFs. Many in the forest sector have consistently argued that leveraging the economic potential of forests will contribute to reducing overall deforestation and degradation. However, active forest management for increasing productivity has long held a secondary place in Nepal's forest management debates. As a result of the overall discourse on forest conservation and biodiversity since the 1970s, the media has regularly highlighted acts of tree-cutting that could be maligned as part of the deforestation dynamic without understanding the potential role of timber markets in both the economy and sustainable forest management (Banjade, 2012).

The legal, policy, regulatory, and institutional structure governing forest tenure types and their property rights rules will need to be adjusted to reflect this new strategic orientation in which REDD+ programs will play an important role. Therefore, both further devolution and changes in the tenure governance systems at various scales will need to be achieved. The ER program will ideally need to contribute to finding this new balance between improved forest management (including ER), better livelihoods, watershed protection, and commercialization of forest supply chains.

Most of all, Nepal's forest sector requires an improvement in certain dimensions of forest governance. Recent assessments indicate that while tremendous strides have been taken in strengthening laws and policies, as well as moving toward participatory and devolved forms of decision-making, it is law enforcement and monitoring that need significant improvement (Paudel, Khanal, & Branney, 2011). Remedying this aspect of forest management would help avoid the present situation in which media-publicized investigations between 2009 and 2012 by the Commission for the Investigation of the Abuse of Authority (CIAA) into forest corruption and numerous instances of illegal timber smuggling have led to a reluctance on the part of DFOFs to approve timber harvesting permits throughout the Terai (be it in CFs, CoFs, or GMFs). Pending the outcome of the ensuing court cases, DFOs' ability to permit timber extraction remains curtailed, contributing not only to an unpredictable regulatory climate for deriving benefits across all forest tenure types but also to the timber demand-supply problem.

In recent years, one of the main developments within the forest advocacy movement (involving FECOFUN and others) has been a push for the new constitution to fully devolve property rights to CFs; CFUGs would thereby become the autonomous and full owners of their forests (Luintel & Chhetri, 2008). This constitution, in creating a new federal governance structure, will significantly affect all natural resource sectors. During the drafting of the FSS, this was a contentious issue because there has been considerable concern that full ownership rights may result in economically driven abuse of forests for quick income in a politically unstable climate. Given the persistent attempts by the MoFSC to re-centralize authority over CFs in recent years (through proposed amendments to the Forest Act and reduced budget allocations), there is a growing belief among CSOs and CFUGs that the perceived erosion of CF autonomy will be best addressed through stronger forms of tenure protection such as full ownership (Kanel, 2012; Sunam, Paudel, & Paudel, 2013).

KEY FINDINGS

- There is high forest dependency in Nepal, with about 84% of households relying on forest products to meet their basic household needs. This is of particular importance for those 25% of households below the poverty line for whom access to forests through devolved forest tenure institutions is crucial for survival.
- Forest tenure devolution has both improved forest condition as well as social benefits. Forest tenure devolution of national forestlands now covers about 40% of Nepal's forestlands; eight devolved forest tenure types form a complex mosaic across the national forestlands. CF is the largest community-based forest tenure type in terms of area covered. Over 95% of all forests under community-based forest tenure types falls under CF, 2.4% under LHF, and 2.25% under CoF. Although the first phase of devolution, which lasted until the late 1990s, was focused on improving forests and meeting household

needs, the second phase has targeted poverty alleviation and social inclusion. Based on achievements to date, the draft FSS proposes further devolution that will result in at least 60% of national forestlands under community-based management. This will be accompanied by a significant increase in intensive management of forests, particularly in the Terai and inner Terai, as well as improvement in operational plan coverage. The proposed interventions in the ER-PIN, therefore, are aligned with this national strategy.

- Although CF was given priority within the MPFS, there has been no coordinated approach within the MoFSC for overall forest tenure devolution, particularly one that is tailored to the physiographic conditions of ecological belts. Until the 2000 National Forest Policy, there was no specific strategic guidance for forest management in the Terai region. The DDCs have neither significant involvement in forest management nor ability to coordinate planning across the landscape.
- Forest tenure devolution has involved establishing new participatory governance institutions. In support, the government forest staff's role has moved from a command-and-control approach toward a facilitative and catalytic one. Devolution has significantly improved forest cover and condition, social welfare, and household livelihoods moving in the direction of better social equity. Even so, significant improvement in tenure governance, as well as the capacity of forest staff to work in a collaborative and participatory mode are needed.
- The FSS is setting up a new phase in which an integrated multiple-use forest management approach seeks to improve timber demand-supply dynamics while achieving reductions in greenhouse gas emissions and better biodiversity conservation. The specific implementation pathways for achieving this are being identified.
- While most of the forest tenure types under the MoFSC have been established under national legislation (1993 Forest Act and 1973 National Parks and Wildlife Conservation Act), they each reflect differing tenure conditions with CFUGs being granted rights into perpetuity, LHFs permitted 40-year renewable leases, and GMFs and PFs developed on land owned by the GoN. Only CoFs have been established on GMFs through a policy directive. The DoF and DNPWC administer implementation of the 1993 Forest Act and the 1973 National Parks and Wildlife Conservation Act respectively, but they do not coordinate their forest sector activities.
- Outside the domain of national forestlands, PLF is a nascent community-based forest tenure type being piloted on institutional land in the Terai under the authority of DDCs. These areas take up multiple forms such as community forests, agroforestry, and woodlots. PRFs occupy a very small area of about 0.08% of all forests.

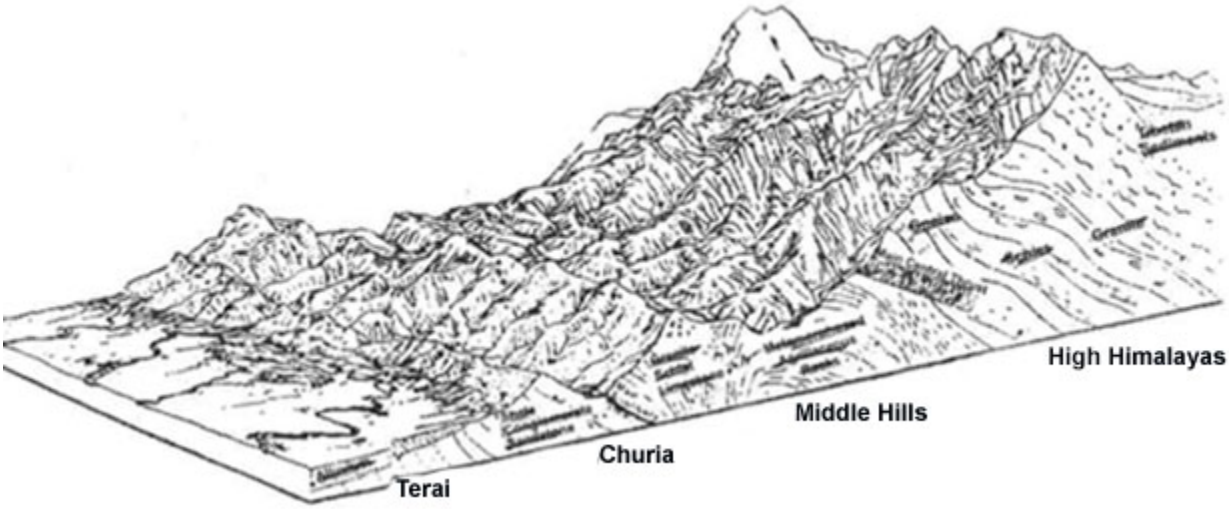
2.2 FOREST COVER AND MOSAIC PATTERN OF FOREST TENURE IN THE ERPAA

The Terai is a very different region from the Middle Hills in terms of forest management needs. Certainly, the presence of high-value forests, largely plains topography, and good road infrastructure distinguish it from the hills. Although deforestation rates were high until the early 1990s (Karna, 2008), there has been a considerable reduction in deforestation pressures over the past two decades. Since there is no forest planning across the Terai eco-belt, the process of forest tenure devolution has emerged somewhat organically, producing a mosaic pattern that reflects the geography and level of forest cover, histories of older and recent migration and settlement, DFO planning and management orientation, road infrastructure, and strength of CSO advocacy. In contrast with the Middle Hills, the multiple interests in Terai's valuable forests have produced a conflictual devolution process that has been slowly settling into an accommodated consensus. Precisely what the specific relationship is between the predominance of particular forest tenure types and patterns of deforestation by district have not been studied so far. While such studies have been carried out in particular watersheds in the Middle Hills, similar studies in the ERPAA will help clarify the extent to which particular tenure types will significantly contribute to ER.

An understanding of the niche role of specific forest tenure types across the landscape and its relationship to the geography as well as level of forest cover in each district will permit the ER Program to design supportive interventions that, at an aggregate landscape level, will reduce emissions. This will be particularly important for determining the relative proportions for the proposed devolution of national forestlands to CF, CoF, or private plantations as set out in the ER-PIN. After briefly outlining the physiographic form and types of forests found in the ERPAA, this section presents a macro-level analysis of the relationship between forest cover and distribution of forest tenure types. This is followed by an overview of the current patterns of deforestation and degradation in the ERPAA so that some preliminary insights into the relationship between forest tenure types and forest loss can be distilled. The development of an integrated landscape-based ER approach will require attention to not only the effects of each forest tenure type on forest cover, but also to the interlinkages between different forest tenure types, such as between CF and CoF or between PF and CF. In order to be effective, ER interventions will need to identify ways not only to reduce the competitive dynamics between different forest tenure types (such as CF and CoF) that can lead to ongoing conflict, but also to promote synergies between different forest tenure types in order to prevent leakage between them.

The physiographic form of the Terai has played an important role in determining settlement patterns and, therefore, the geography of current forest cover (Figure 10). The Terai is divided into three terrain types each consisting of unique geo-ecological features: a) the southern alluvial plains belt (closest to the Indian border) that forms part of the Gangetic Plains; b) the alluvial and colluvial deposits called the Bhabar, moving northwards along the southern foothills of the Siwalik range (more commonly known as the Churia or Chure in Nepal) that range from 100–1500 m in height; and c) the inner Terai (also called Bhitri-Madhesh) that is comprised of a series of valleys and low hills including the Churia range. The Middle Hills region begins at the Mahabharat range (FRAN, 2014b). The region of the Churia foothills is geologically young with frequent earthquakes and geological activity contributing to a fragile ecology. There is considerably greater forest cover in the Churia than in the southern belt where forests have long been cleared for settlement. A major plan is afoot to conserve the Churia hills for integrated Terai watershed protection. Of the 12 ERPAA districts, seven have substantial portions situated within the hills of inner Terai: Parsa, Chitwan, Nawalparasi, Dang, Banke, Bardiya, and Kailali.

FIGURE 10: PHYSIOGRAPHIC FORM OF NEPAL

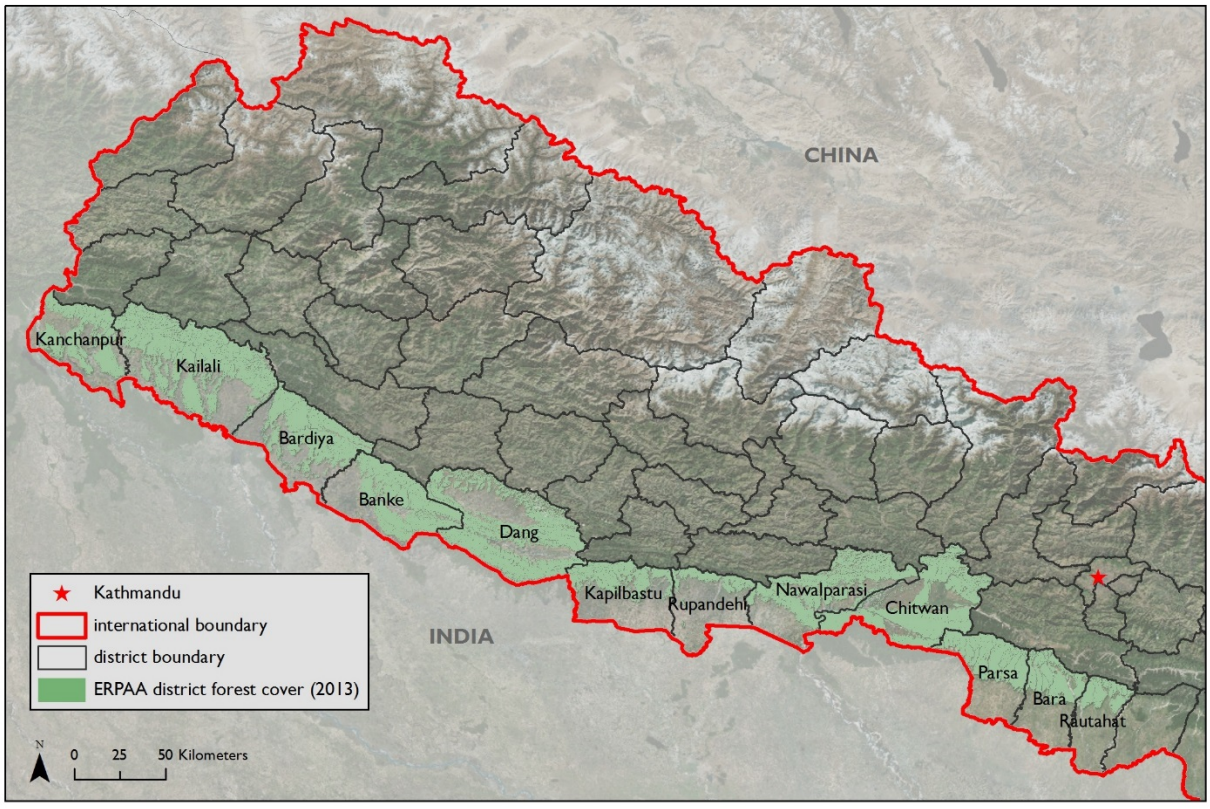


The forest species and range vary throughout the Terai depending on the underlying soil or substrate. There is *chir* pine in the inner Terai. Throughout the alluvial fans and continuing further downstream, there are hardwood forests of *sissoo* and *khair* along the river beds. Moving further south, stands of *sal* and other hardwoods grow where finer sediment prevails. After a brief interlude of bamboo and savannah grass, the land is characterized by mostly cultivated fields. The western Terai is considerably drier than the eastern area, with the vegetation changing accordingly. Clearly, the forest management objectives and benefits obtained by any forest tenure type will depend on the particular composition and ecology of their forests.

There are four main forest types across the ERPAA: *sal* (*Shorea robusta*), Terai mixed hardwood, *khair-sissoo* (*Acacia catechu* and *Dalbergia sissoo*), and *chir* pine (*Pinus roxburghii*). Recent data on the Terai forests (not including Churia) indicate the relative proportion of these forests: *sal* forest, 45.71 percent; Terai mixed hardwood forest, 46.86 percent; *khair-sissoo* forest makes up 2.86 percent of area; and Terai *sal* mixed hardwood forest, 4.57 percent (FRAN, 2014a). Of these forests, 14.86 percent are poorly stocked forest (crown cover 10–39.9%), 37.14 percent were moderately stocked forest (crown cover 40–69.9%), and 48.0 percent were well-stocked forest (more than or equal to 70% crown cover or canopy closure). These are economically highly valued trees; approximately 75 percent of Terai forest is estimated to be of commercial value, compared with only 34 percent in the Middle Hills (Dharmadasini, 2005).

In comparison with other forests in Nepal, those in the Terai are at greater risk of deforestation and degradation due to a burgeoning population from decades of in-migration and lucrative opportunities for timber production (Bhatta, Karna, Dev, & Springate-Baginski, 2007; Magrath, Shreshta, Subedi, Dulal, & Baumback, 2013). The current pattern of forest cover across the ERPAA is primarily the outcome of longer-term settlement patterns (Figure 11 and 12, Table 10). Forests are therefore now largely restricted to the northern boundaries of districts in Rautahat, Bara, Parsa, Rupandehi, and Kapilbastu. Here, forests are far from long-standing settlements (called "distant users" in Terai forest management) that are in the district's southern rim. In contrast, forests in districts further to the west or in the inner Terai (with lower population levels) spread throughout the district following topographic forms. Data by district from the GON's 2013 annual statistical report show that forest cover within the ERPAA's 12 districts is about 51.60 percent of the land's area. Forest cover is higher in the Far-Western and Mid-Western districts, particularly those districts that fall largely in the inner Terai. Rupandehi, Kapilbastu, Bara, and Rautahat are those with lower forest cover (by area or percentage of district area).

FIGURE 11: FOREST COVER ACROSS THE ERPAA



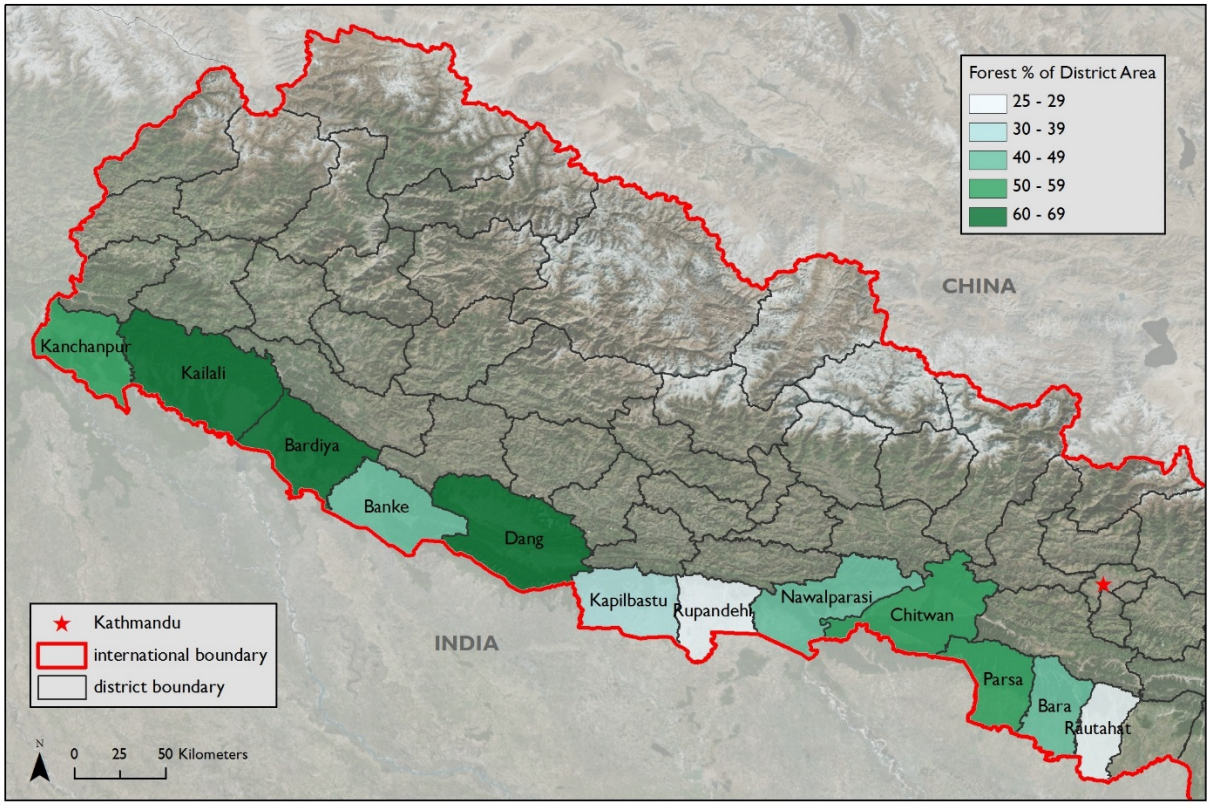
Source: WWF, 2013.

TABLE 10: FOREST AREA BY DISTRICT IN ERPAA (100 HA = 1KM²)

District	Forest Area (ha)	Rank Order (Forest Area [ha])	District Area (km²)	Forest Cover as % of District Area	Rank Order (% of District Area)
Rautahat	29,559	12	1126	26.25	11
Bara	47,182	10	1190	39.65	9
Parsa	78,343	8	1353	57.90	5
Chitwan	128,500	3	2218	57.94	4
Nawalparasi	104,942	6	2162	48.54	7
Rupandehi	33,874	11	1360	24.91	12
Kapilbastu	56,915	9	1738	32.75	10
Dang	201,900	2	2955	68.32	1
Banke	113,295	5	2337	48.48	8
Bardiya	121,682	4	2025	60.09	3
Kailali	205,939	1	3235	63.66	2
Kanchanpur	80,548	7	1610	50.03	6
TOTAL	1,202,679		23,309	51.60%	

Source: DoF, 2014; CBS, 2013.

FIGURE 12: PERCENTAGE OF DISTRICT AREA COVERED BY FORESTS



With endemic malaria, the Terai long had a low population level of indigenous or ethnic communities, particularly the Tharu (who are believed to have malaria resistance). In the nineteenth century, settlers from the south moved into the Terai's Eastern, Central, and then Western regions, clearing its rich forest cover for agriculture and supplying timber to the East India Company. In these districts, forests are now largely found within the northern edge. In contrast, districts in Mid-Western and Far-Western Terai such as Kanchanpur, Kailali, Bardiya, Banke, and Dang have retained a much higher forest cover. Moreover, in those districts that largely fall within the inner Terai or the Churia hills, forests were politically protected as defenses against colonial intrusion from the south. These districts with higher forest cover also have forests that are not restricted to the northern edge; rather, their distribution is affected by topography and road infrastructure patterns. Later, large-scale migration from the Middle Hills starting in the 1960s led to many new settlements near these remaining forested areas. Lastly, higher forest cover districts (in which the royalty had established hunting preserves) became the site of three national parks and two wildlife reserves starting from the early 1970s.

Terai landscape in buffer zone of Bardiya National Park

This geography of forest cover has influenced the distribution of forest tenure types within the ERPAA landscape. Our analysis indicates that outside the conservation areas, CoF is largely found in those districts that have low forest cover that is restricted to the northern edge. CF, in contrast, predominates in those districts with higher forest cover as well as where the forest cover is not restricted to northern edges. These are areas where long-term settlement pressures are considerably lower, and where greater in-migration of Middle Hills communities has occurred. There is very little research on CF or CoF in the Terai, let alone any detailed information on the social constitution of these devolved forest tenure types. Our analysis of the distribution of CF and CoF across the ERPAA is provided below under Section 2.8.

New assessments of forest cover in Terai and Churia provide a more accurate picture of the deforestation and degradation dynamics within the ERPAA districts. There are distinctly different forest cover change dynamics within the Terai and Churia areas of the ERPAA. Two separate FRAs for the Terai and Churia were published by the Department of Forest Research and Survey in mid- to late 2014 (FRAN, 2014a and 2014b). It is important to note that each of these reports covers slightly different portions of the ERPAA because they follow physiographic boundaries for the Terai and Churia rather than administrative boundaries. In general, the prevailing impression disseminated in the media has been that the Terai experiences serious deforestation. While historically this was true (up to the early 1990s), the picture emerging from these recent studies is a more tempered depiction of the geography and intensity of deforestation over the last two decades. In general, the Churia has a considerably larger proportion of its area under forest than the Terai. The recent FRA indicates that the Terai (across its 20 districts) has 411,580 ha of forest and 9,502 ha other wooded land (FRAN, 2014a), which in sum covers 20.88 percent of the area. Of this, 76.45 percent is located outside the protected areas, 16.97 percent is in the PAs, and 6.58 percent is in BZs (Table 11). Far-Western Terai clearly possesses the largest forest area (in or outside of protected areas). By comparison, the Churia has 72.37 percent of this physiographic zone covered by forests. Although there is considerably greater amount of forest in the Churia, it has a similar distribution in terms of those that fall outside PAs (76%) and those within (24% with 18% in core and 6% in BZ, FRAN, 2014b).

TABLE 11: FOREST RESOURCES IN THE TERAI IN 2013 (HA)

Development Regions	Outside PAs	Buffer Zone	Inside PAs	Total Area	%
Eastern Terai	56,012	2	206	56220	13.66
Central Terai	77,718	4,285	13,216	95,219	23.13
Western Terai	47,209	0	0	47,209	11.47
Mid-Western Terai	36,099	18,008	31,511	85,618	20.80
Far Western Terai	97,622	4,778	24,914	127,314	30.93
TOTAL	**314,660**	**27,074**	**69,847**	**411,580**	**100.0**
Percent	**76.45**	**6.58**	**16.97**	**100.0**	

Source: FRAN, 2014a.

Since the 1960s, deforestation in the Terai has been driven by a range of factors: government resettlement programs, infrastructure, unplanned settlement and related forest clearing for agriculture (encroachment particularly within GMFs), illicit logging for distribution domestically and across borders, grazing, forest fires, and sand mining issues. Migrants' need for agricultural land as well as the widespread presence of economically valuable trees has provided a strong incentive to deforest. Encroachment is currently more serious in high-forest areas targeted by new migrants (e.g., Kanchanpur, Kailali, and Dang), although Bara with lower forest levels also suffers from encroachment due to Maoist activity. Where forests have already been seriously degraded, migrants will typically clear the area for settlement. It has been said that degradation rather than deforestation is the more significant problem in Nepal today, including in the Terai (UN-REDD, 2014). Massive in-migration from the Middle Hills has placed considerable daily pressure on forests for meeting basic needs such as fuel and fodder.

According to the Terai FRA, the annual deforestation rate in the area over the last 19 years (1991–2010/11) was 0.40 percent (FRAN, 2014a). By comparison, annual forest loss in the Churia area over the same period was much less at 0.18% (about 38,051 ha) (FRAN, 2014b). The Terai and Churia losses are, however, not simply the outcome of gradual processes; episodes of rampant unauthorized felling have been reported in the media, for example, in the aftermath of the 2006 political movement. It has been estimated that over 100,000 cubic feet of timber was illegally harvested in 2009 alone in the Terai (Khadka, 2010). Per capita annual consumption of fuelwood is estimated to be 456 kilograms (kg) in the Terai—a little lower than the 480 kg in the hills/mountain (Kanel et al., 2012). Within the Terai, GMFs are regularly the most heavily disturbed forests while in the Churia (more remotely located), they were the least disturbed. Within the Terai, CFs were relatively undisturbed but in Churia, CFs and BZCFs had somewhat more disturbances (although only 10% were of high impact). Disturbances mainly took the form of livestock grazing, tree cutting, sapling and pole cutting, and forest fires. In both areas, PA core zones were the least disturbed given their distance from the forest edge (FRAN, 2014a & 2014b).

Interestingly, a small number of districts have experienced improvements in forest cover. In the Terai, Banke and Nawalparasi experienced forest cover gain while heavier forest losses were found in Kapilbastu, Bardiya, and Kailali (FRAN, 2014a; Table 12 and Figure 13). Within the Churia areas of ERPAA districts, forest gain between 1995 and 2010 took place in Chitwan (241 ha), Kapilbastu (35 ha), and Banke (891 ha). Forest loss occurred in Parsa (497 ha), Rautahat (1485 ha), Nawalparasi (75,877 ha), Rupandehi (1,048 ha), Bardiya (904 ha), Dang (5,351 ha), Kailali (2,966 ha), and Kanchanpur (381 ha) (FRAN, 2014b). The reasons for this pattern are not yet clear. Among these, Nawalparasi, Dang, Bardiya, Kailali, and Kanchanpur losses were likely from the government distributing forestland to freed bonded laborers (*kamaiyas*) and landless encroachers (see below). The positive gain in the case of Banke largely owes to the declaration of a new national park.

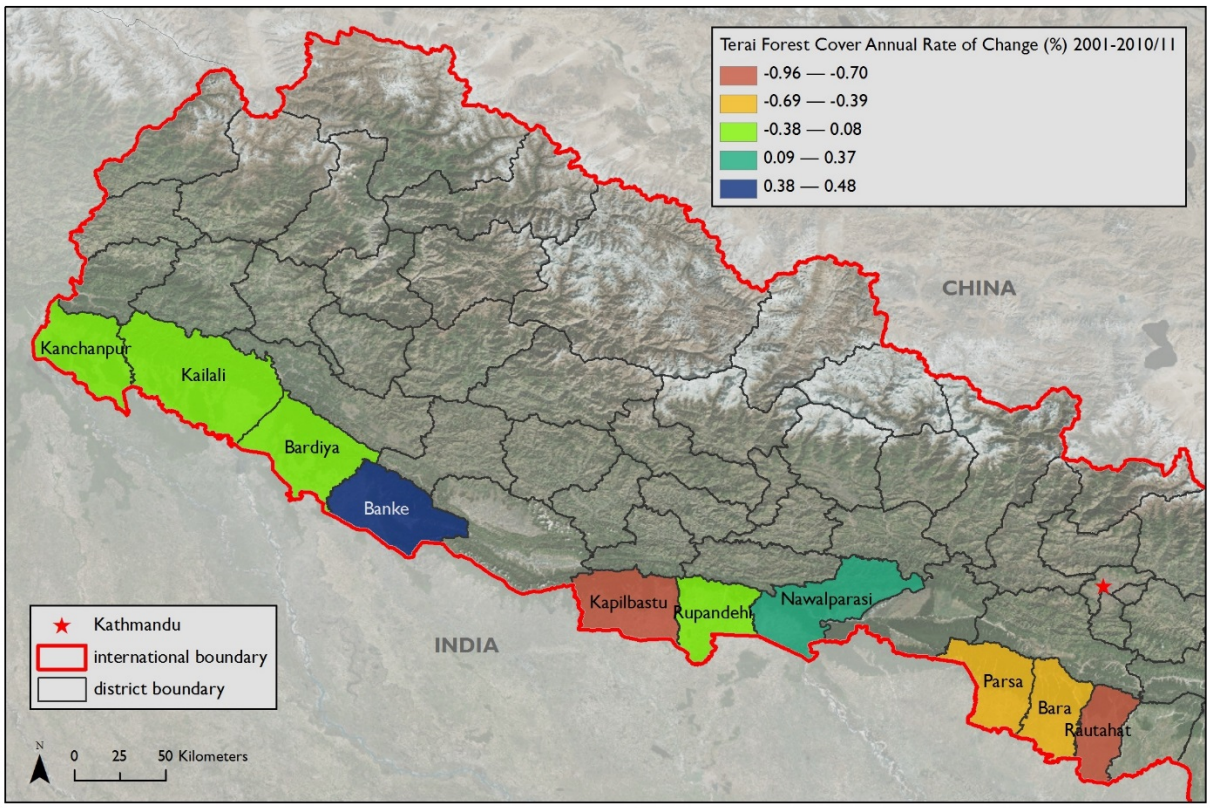
TABLE 12: FOREST COVER AND RATE OF CHANGE IN THE TERAI PORTION OF ERPAA, 1984–2010/11 ('000 HA)

Development Region	District	LRMP 1984	DoF 1991	DoF 2001	FRA 2010/11	Rate of Change	
						1991–2010/11	2001–2010/11
Far Western	Kanchanpur	71.9	58.1	57.5	56.2	-0.18	-0.25
	Kailali	96	79.2	73.2	71.2	-.056	-0.31

Mid-Western	Bardiya	53.6	50.6	47.7	46.6	-0.43	-0.24
	Banke	48.6	38.8	37.3	39	0.03	0.48
Western	Kapilbastu	34	43.3	40.8	37.5	-0.76	-0.95
	Rupandehi	12.3	7.8	6.7	6.5	-0.93	-0.31
	Nawalparasi	7.2	3.2	3.2	3.2	0.02	0.2
Central	Parsa	24.5	25.5	25.9	24.6	-0.19	-0.6
	Bara	32.9	32.6	32.2	30.8	0.29	-0.49
	Rautahat	22	20.2	20.3	18.6	-0.43	-0.96

Source: FRAN, 2014a.

FIGURE 13: ANNUAL RATE OF CHANGE IN TERAI FOREST COVER, 2001–2010/11



KEY FINDINGS

- Physiographically, the Terai is divided into three zones: plains, Bhabhar, and inner Terai (or Churia Hills). The Terai and Bhabhar region has 20.88% forest cover, while the Churia (which covers many Middle Hills districts as well) has 72.37% forest cover. Although the Terai experienced high levels of deforestation until the early 1990s, there has been a certain slowdown in forest loss over the last two decades when devolution of forest tenure has taken place. Based on recent FRAs, the annual rate of Terai forest loss over last two decades has been 0.40%. There is considerably greater forest cover in the inner Terai where the annual rate of forest loss was much lower (0.18%). A number of the ERPAA districts have substantial forested areas within the inner Terai: Parsa, Chitwan, Nawalparasi, Dang, Banke, Bardiya, and Kailali.
- There has been greater disturbance of GMFs in the Terai than in the Churia. In the Terai, CFs have had a relatively lower level of disturbance, whereas in the Churia, CFs and BZCFs have had a higher

though small level of disturbance than GMFs. PA core zones have the least disturbance, whether in Terai or Churia.

- There is a relationship between the geography and level of forest cover, and the distribution of forest tenure types within any given district. Districts in Central and Western regions, with long-term settlements in the southern rim, only have forests in the northern edge (creating distant users); these are also the low forest-cover districts where CoFs have typically been established. Those districts with lower long-term settlement pressures (in Far and Mid-Western regions), or those in inner Terai whose forests were protected for political defense, have higher forest cover that is more evenly distributed across the district following topographical form. Here, there is a prevalence of CFs. PAs and BZs in inner Terai or Far- and Mid-Western districts with high forest cover were often used as royal hunting reserves.
- Forest loss is generally found across most districts in the Terai and Churia. In the Terai, however Banke and Nawalparasi have experienced forest gain. Some of the loss was due to land given to freed bonded laborers.In Churia, this occurred in Chitwan, Kapilbastu, and Banke. The reason for this pattern is not clear except that both Chitwan and Banke have PAs and BZs.
- No studies have been carried out of the relationship between the prevalence of particular forest tenure types and deforestation/degradation patterns in the Terai or Churia.

2.3 DEVELOPMENT IN FLUX

Although deforestation and degradation have been reduced over time within the Terai and Churia, the ER Program will have to build in flexibility to accommodate a range of forest tenure types set within an accessible lowland and hilly landscape that is in a state of dynamic economic and political flux. Despite being the smallest of the three eco-belts, the Terai belt is of growing national importance for a range of reasons: it contains more than half of the nation's cultivated land (about 68%), it holds its most economically valuable forests, it accommodates more than half of the population, and it has five protected areas, some of international significance. Compared to the other eco-belts, the Terai is the juggernaut for Nepal's economic development. Its agricultural production system, demographic pressures, migration trends, labor supply, infrastructure, markets, and timber demands, as well as its political context are likely to significantly change in the years to come. While details of these socio-economic transformations are provided in Appendix 3, a summary of its key features is covered in this section. The governance systems and property rights within each forest tenure type will inevitably be affected by gendered labor availability, governance capabilities, proximity to markets, income, and forest product demand.

Once a large-scale malaria eradication program took hold in the Terai in the 1960s and 1970s, there was massive migration of households from the Middle Hills into the Terai's fertile lands. Together with major infrastructure development including the East-West Highway (from 1960s to mid-1980s), this jumpstarted the region's economic development, even though the Terai's overall Human Development Index and poverty rate level remain lower than in the Middle Hills (Figures 14 and 15). Districts such as Chitwan with close proximity to Kathmandu have economically done very well, drawing migrants from all over the country. Chitwan is therefore called the 76th District of Nepal. Rautahat, on the other hand, is the poorest district within the ERPAA. Despite its proximity to developed urban areas in Nepal and India, this is likely due to its low level of both agricultural and forestland areas, as well as exposure to flooding risk.

FIGURE 14: HUMAN DEVELOPMENT INDEX ACROSS ERPAA DISTRICTS

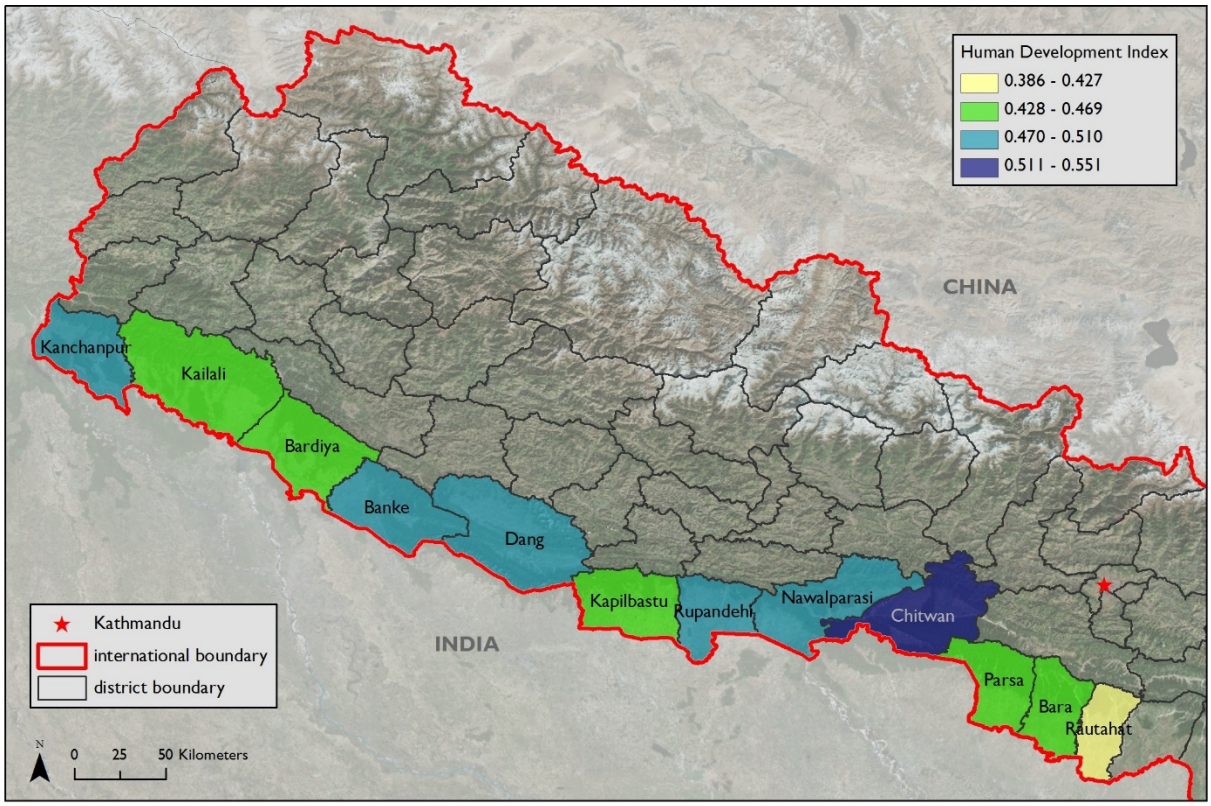
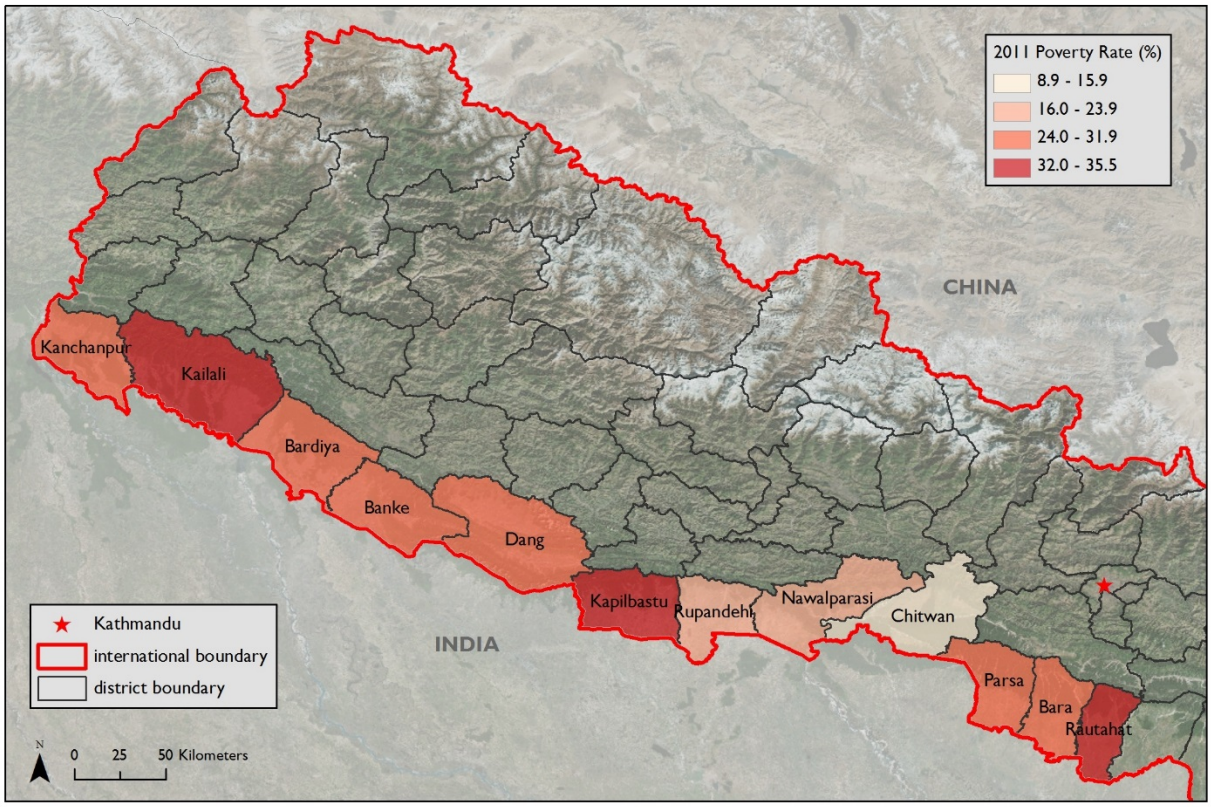


FIGURE 15: POVERTY RATE IN 2011 ACROSS ERPAA DISTRICTS



The Terai has to contend with long-existing problems of landlessness and an unequal wealth gap despite recent government attempts to distribute land (often forestland) to the landless (see Section 2.4 below for a detailed examination of the issue). Landlessness will play a significant role in the success of the ER Program; targeted interventions that support the forest needs of the poor and marginalized will result in improvements in overall forest condition and cover. In recent years, continuing in-migration from the north and considerable out-migration of working age males (and some females) to urban centers in Nepal, India, and beyond has generated significant instability in its agricultural and industrial production conditions. Labor shortages in the agricultural sector and the feminization of agricultural and forest management are not uncommon. Moreover, absentee landlordism is on the rise, leading to agricultural land being converted to PRFs for less intensive long-term timber production.

Because the Terai's population historically has largely been of Indian origin, it has been politically labelled the country's "vulnerable underbelly" (Gaige, 2009, p. 2) and therefore has been marginalized by Kathmandu's political elites. Although the Terai has long been an under-studied area (Lal, 2002), a series of momentous political changes toward multi-party democracy starting in 1990 has enabled long-term residents of the Terai (called Madheshis) to press for stronger political rights and opportunities. Although Madheshi is a label that encompasses many different religious, ethnic, and caste groups, this group is set apart by their cultural practices (particularly language) that differ from Middle Hill communities. In parallel, numerous indigenous (*janajati*) identity and *dalit* movements have emerged.[12] Organizations such as the Nepal Federation of Indigenous Nationalities (NEFIN) have played an important role in highlighting how *janajatis* have been excluded in many forest tenure institutions. In REDD+ programming, both as a member of the ER-PIN

[12] The *Dalit* population is a historically disadvantaged group within the Hindu caste hierarchy. In constructing the Human Development Index, Terai *dalits* are differentiated from those in the Middle Hills.

drafting committee, as well as in public advocacy, NEFIN has been active in identifying how *janajati* rights must be recognized and addressed.

KEY FINDINGS

- The Terai is in a state of considerable dynamic flux that will change how forest tenure institutions work in the short-term and mid-term future. Compared to other eco-belts, the Terai is the juggernaut of Nepal's economic development in terms of both agricultural and industrial production. It holds more than half of Nepal's agricultural land, population, and its most economically valuable forests.
- With the eradication of malaria in the 1960s and 1970s, there was a massive influx of migrants from the Middle Hills into the fertile Terai. Additionally, in recent years, there has been considerable out-migration of males (and some women) to South Asia or further afield. Consequently, its agricultural production system, total population, migration trends, labor supply, infrastructure, markets, timber demands, as well as its political context are likely to significantly change in the years to come. The current trends are leading to the feminization of agricultural and forest management, labor shortages, and greater need for forest products. Absentee landlordism is on the rise prompting the conversion of agricultural land to PRFs for less labor-intensive production.
- Despite economic growth, it has a lower Human Development Index, and higher Poverty Rate than the Middle Hills. This is likely related to higher levels of landlessness, which in turn, has a significant impact on forest encroachment and informal settlements.
- Madheshis, the long-term residents of the Terai, encompassing a range of religious, ethnic, and caste groups, have politically mobilized since the early 1990s to assert their rights against a Hills-centric political system. In addition, numerous *dalit*, and *janajati* movements have also emerged. They play a significant contesting role in Terai forest politics.

2.4 LANDLESSNESS, ENCROACHMENT, AND FOREST LOSS

Typical roadside informal settlements by the landless on government forestlands

The pattern of forest cover, existence of particular forest tenure types, and economic development dynamics (such as landlessness and economic opportunities) affect the conversion of forestland to agriculture and settlement areas. The formal government allocation of GMFs to freed *kamaiyas* (bonded laborers) together with the problem of encroachment and informal settlement by the landless are significant in particular ERPAA districts. In order to meet ER goals, the ER Program will need to take into consideration landlessness as a fundamental driver of deforestation. Removal of current informal settlements would be a politically difficult endeavor. A two-pronged approach that prevents encroachment through better law enforcement and GMF monitoring while rapidly devolving GMFs to new and effective devolved forest tenure systems (such as CFs with more effective forest monitoring) will help reduce the pull factors. In the long run, the problem of Terai landlessness requires sustained national attention that moves beyond the short attention span of political

party interests. The problem of landlessness[13] is rooted in the lack of any effective land use planning system within individual districts as well as across the Terai. While the lack of functioning DDCs and VDCs is part of the problem, land use planning in Nepal, more generally, is weak and is undergoing reform. This is addressed in the next section.

After Nepal changed from a monarchic system to a multi-party democratic political system in 1990, human rights concerns encouraged movements to free *kamaiyas* like "Mukta, or Free, *Kamaiyas.*" In the early 2000s, this led to the end of slavery for many *kamaiyas* (about 28,000 families, including the chore-specific *haruwas* and *charuwas)* through the Kamaiya Labour (Prohibition) Act of 2001. The government initially developed programs for resettling them within forest land. In the fiscal year 2009/2010 and 2010/2011, for example, a total of 22,541 freed *kamaiyas* were granted forestlands to settle and cultivate (UN-REDD, 2014). Very recently, however, the government has changed its approach and decided to purchase non-forest land at market prices for their resettlement.

Across the Terai lowlands, cultivation is the most serious form of forest conversion standing at 62% of all conversion (Table 13 and Figure 16). This is the result of higher levels of landlessness as well as greater social monopoly over land in the Terai than in the Middle Hills. According to recent studies, 22.5 percent of Terai families are landless (CBS, 2004). Landless groups include *dalits* (50% are Terai *dalits* and 40% Hill *dalits*), Terai *janajati* groups such as Tharu (22.5%), Hill *janajati* groups (20.9%), and Chhetri/Thakuri (20.6%; CSRC 2011). The economic opportunities offered by this region, relative to the Middle Hills, continue to draw new migrants who then often become part of the "landless" category. Altogether, there is a persistent pressure to convert edges of GMFs to agriculture by establishing informal settlements, often near roads and edges of rivers.

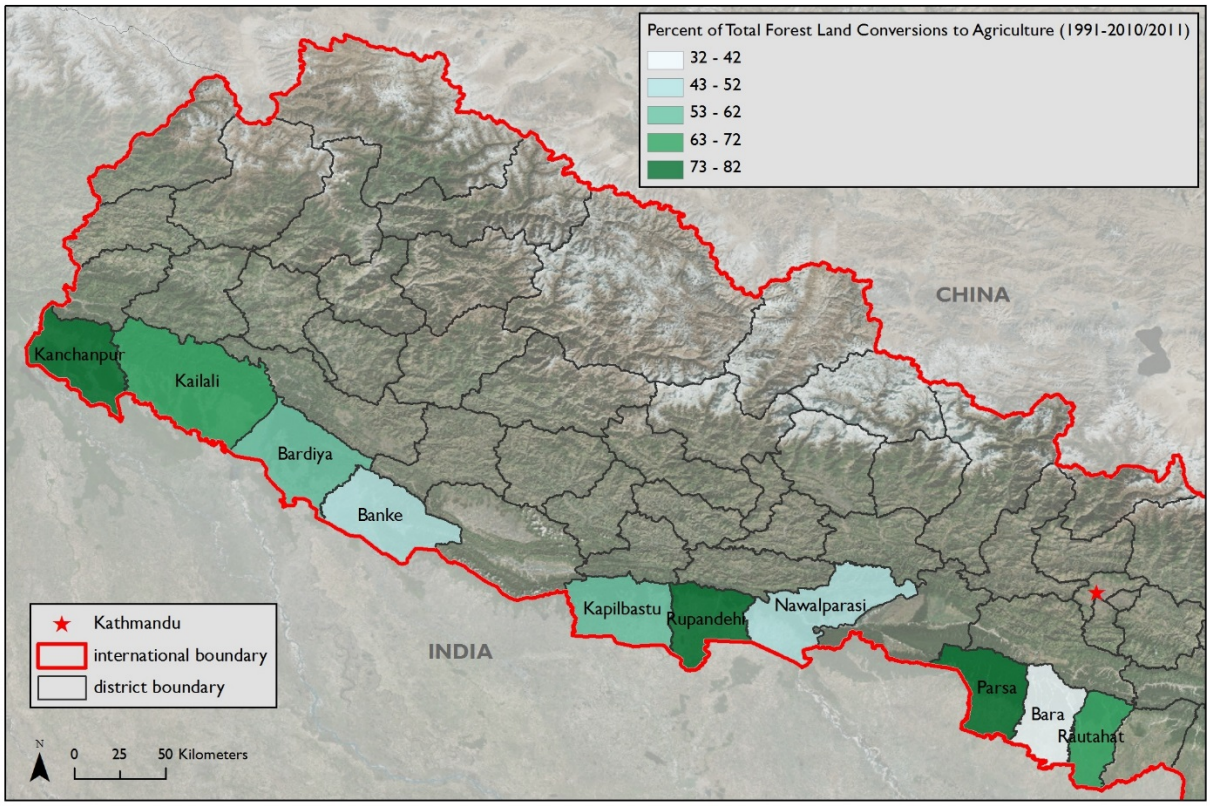
TABLE 13: FOREST LAND CONVERTED TO OTHER LAND COVER CATEGORIES BETWEEN 1991 AND 2010/11 IN THE TERAI PORTION OF THE ERPAA

Development Region	District	Agriculture %	Infrastructure %	Water Influenced Changes %	Grassland %	OWL* %	Others %
Far-Western	Kanchanpur	73.5	0.8	12.8	6.5	3.9	2.6
	Kailali	63.6	0.3	14.3	1.6	13.3	6.9
Mid-Western	Bardiya	59.5	0.1	13.7	4	21.8	0.9
	Banke	44.1	4.8	9.6	5.5	33.4	2.5
Western	Kapilbastu	58.1	0.1	8.9	4.8	20.2	8
	Rupandehi	82.1	0	2.9	4.8	7.5	2.6
	Nawalparasi	50	1.7	4.6	29.5	9.9	4.3
Central	Parsa	76.1	0	17.9	0.3	0	5.7
	Bara	31.7	0	46.5	0.7	21.1	0
	Rautahat	64	0	35.1	0.4	0.5	0

Source: FRAN, 2014a.

[13] Landlessness is defined by those possessing less than 0.1 ha of land.

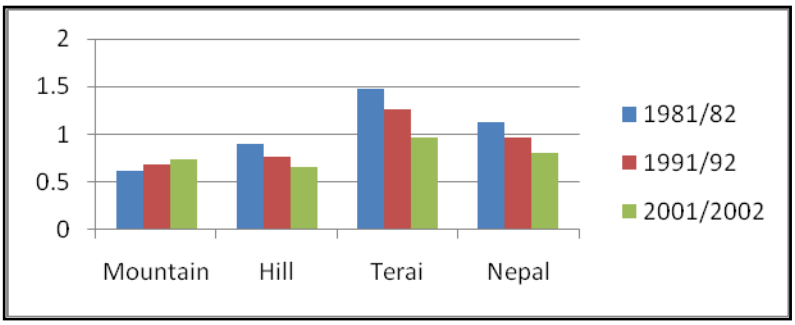
FIGURE 16: PERCENTAGE OF TOTAL FOREST CONVERSIONS TO AGRICULTURE, 1991–2010/2011



The reasons for landlessness are diverse given the numerous rounds of migration into the region. Historically, many *janajati* communities lost land in the process of being marginalized by new settlers from the south. The Tharus initially were afraid to own legal title to their lands because of the associated onerous tax obligations (Guneratne, 1996). Under the new immigrants, they became bonded laborers (*kamaiya* for general farm work, *haruwas* to plough the land, and *charuwas* as herders). As resettlement of Middle Hill migrants took place in the 1960s and 1970s, Tharus started to appreciate the importance of land ownership and began to move westward in search of land. Tharus moved from Dang to Kailali and Kanchanpur to convert forests into agricultural lands. During this same period, Middle Hill migrant communities not formally settled by the government established informal settlements on public or privately owned land. In other cases, some longstanding communities that had been living on the same piece of land for generations (public land or by agreement with a private landlord) had no papers to demonstrate tenancy or ownership rights. Other landless groups whose families had lived on a piece of land for generations were evicted or forcibly removed.

The problem of encroachment on national forestlands continues even though the government has attempted to address land inequities. The 1964 Land Act aimed to carry out land reform but it inadvertently led to large land owners selling their land to relatives and kin. As such, tenants were not the ultimate beneficiaries of such progressive land reform legislation. Furthermore, those without formal citizenship papers were ineligible to receive land (e.g., in Rupandehi and Kapilbastu). In the end, land reform simply resulted in the formalization of land ownership patterns. Land ownership patterns that did change were more due to population growth and inheritance than to reforms (Figure 17). Terai land holding per capita declined steeply when compared with the Middle Hills and High Mountains, from 1.4 ha in 1981 to 0.9 ha in 2001. In order to address continuing landlessness, 140,000 ha of forestlands have been distributed to landless people under 21 commissions over the last 40 years (UN-REDD, 2014).

FIGURE 17: AVERAGE LAND HOLDING PER HOUSEHOLD (HA) IN DIFFERENT ECO-BELTS



Source: CBS, 2006.

Encroachment and informal settlement problems are particularly serious in the Far- and Mid-Western high forest cover regions of Dang, Bardiya, Kailali, and Kanchanpur; Bara also experiences heavy encroachment (see Tables 14–16). According to the Office of Far-Western Regional Directorate on Forest and Soil Conservation, 21,484 ha have been encroached in Kanchanpur and 6,290 ha in Kailali. The government was able to retake only a fraction of this encroached land (Annual Report, 2069 [2012]). Encroachment takes place primarily on GMFs but also on CFs and BZCFs. Indeed, the rapid expansion of the CF movement in Dang has been very closely allied to the need to prevent new encroachers from entering forests close to settled communities. BZCFs are not immune from this problem: in the Rakchya Women BZCF of Banke National Park, 26 households encroached the forest along the Ratna Highway (from Kohalpur Square on the way to Surkhet) to establish settlements. Similarly, 28 households encroached the Janaasrit BZCF in a location called Bajureli Tole. These were subsequently cleared with the collaboration of administration, park, and police/army (Banke National Park Annual Report, 2069/70 [2012/2013]).

Temporary settlements by displaced populations along roadsides in Kanchanpur

Forest encroachment has been a recurrent problem in Dang District as well despite a strong CF movement there. DFO records show that recent individual and institutional encroachment of forestland covered 3,578 ha in 286 locations with 7,696 houses constructed. Migrants from Rolpa, Rukum, Salyan, Arghakhanchi, and Pyuthan are occupying public forestlands. In addition, land was distributed to freed *kamaiyas*. A large tract of public/forest land in Bara (1,194 ha) was informally settled during the politically unstable period of the Maoist insurgency (1996–2006). A common solution on the part of the local government is to form an "all-party political mechanism" to achieve political consensus to evict illegal settlers or prevent further encroachment. Often, though, the politically charged nature of the situation or lack of resources prevent the DFO and DDC from evicting encroachers.

There are two general categories of encroachers. *Sukumbasis* are landless agricultural laborers who need land for a home and agricultural production. *Hukumbasis* are encroachers organized by political parties or interests who occupy public land (state forestlands and others like community pastures, roadside land, or riverbank areas) in order to accumulate wealth. This second group of encroachers might already own small amounts of

land (Adhikari, 2008). One type of *hukumbasis* emerged from the Maoist struggle in the early 2000s when they seized and redistributed land creating a new group of homeless people. All too often a collusive set of political party interventions facilitate encroachment and informal settlement. Given that the price of land has been increasing in recent years, these are channels through which parties are able to increase revenues. When a new political party in power announces it will provide land to *sukumbasis*, the Ministry of Land Reform develops surveys to allocate land while humanitarian NGOs provide supportive action (UN-REDD, 2014). This, in turn, opens the door to *hukumbasi* action. Although the DFO is usually powerless to take action, the local government may make efforts to evict the high numbers of illegal encroachers. This has generated violence, protests, and rebellion (on occasion, leading to the death of encroachers) in Rupandehi, Kapilbastu, Nawalparasi, Kanchanpur, Bardiya, and Dang. One prominent revolt in Bardiya, known as the Kanara Andolan, involved Tharu who had settled there from Dang (Dhakal, 2013).

Although the government has recently established a Squatter Problem Resolution Commission, the problem of collecting data on who precisely are *sukumbasis* and *hukumbasis* remains very contentious (CSRC, 2009). Natural disasters put further encroachment pressure on forest resources. In August 2014, a massive flood in the ERPAA area (especially in Bardiya and Dang) led to the death of more than 35 people. Many flood-affected victims eventually settled into nearby forests. As such, disasters related to climate change will increase forest encroachment.

TABLE 14: FOREST LAND ENCROACHMENT IN KANCHANPUR DISTRICT

Ilaka Forest Office	Households Involved	Area Encroached (ha)	Recovered Area (ha)	Remaining Area (ha)	Remarks
Brahmadev	340	195		195	From 1996
Mahakali	1,300	1,395	10	1385	Mostly over last 25 years, a few in last 8–10 years
Totifuli	1,103	450		450	Over last 30–35 years, some occurred 15–20 years ago
Krishnapur	1,050	539	59	480	From 1967, some as recent as 2–3 years ago (75 ha)
Dekhatbhuli	4,613	1,163		4613	Old and new (1 year ago also)
Ramnagar	768	45		45	5 years ago
Nauranga	48	5		5	4 years ago
Bedkot	2,106	1,211		1211	From 1967, a few more recent ones from 3–4 years ago
Nawalpur	56	2		2	2 years ago
Pipariya	297	184		184	From 1971, some in 1998
Pipaladi	10,753	6,349	69	6280	A few occurred 35 years ago, and others 27 years ago

Source: Kanchanpur DFO Annual Report, 2012.

TABLE 15: FOREST LAND ENCROACHMENT IN DANG DISTRICT

Period of Encroachment	Locations	Area Encroached (ha)	Houses/Thatch Huts Made
Before 1991	176	2,843.04	4893
1991–2006	84	582.83	1447
2006–2008	6	26.0	406
Encroachment in the name of Mukta (freed) *Kamaiya* and squatters	16	102	950
Others (Nepali army, Maoist army and armed police)	4	24	
TOTAL	**286**	**3,577.87**	**7696**

Source: Dang DFO Annual Report, 2011.

TABLE 16: FOREST LAND ENCROACHMENT IN BARA DISTRICT

VDCs	Encroached Area (ha)	Category A (Severe)/Category B (Moderate)	Houses Constructed
BharatJung	50	B	60
	15	A	15
Nijgarh	10	B	17
Sapahi	15	B	5 +farm
Dumarbana	400	A	1800 +farm
Ratanpuri	100	A+B	175
Ratanpuri	132	A+B	354
Kakadi	202	B	72 + farm

Source: Bara DFO Annual Report, 2012.

KEY FINDINGS

- Conversion of forestlands to settlements and agriculture is a continuing problem particularly in Kanchanpur, Kailali, Bardiya, Dang, and Bara districts.
- Forestland has been distributed to the landless under various land reform commissions. More recently, freed bonded laborers (*kamaiyas*) were provided plots on GMFs under the 2001 Kamaiya (Labor) Prohibition Act. This practice has been halted as the GoN has decided to purchase regular agricultural land instead for freed *kamaiyas*.
- Most encroachment and informal settlement in forests, along rivers and roads, takes place as a result of landlessness. Landlessness is a serious problem in the Terai with 22.5% of families being landless owning less than 0.1 ha of land. There is a predominance of *dalits* and certain *janajatis* among the landless. Various rounds of land reform by the government have only served to formalize and redistribute land among the wealthier households. Both genuinely landless (*sukumbasis*) and politically supported (*hukumbasis*) settlers are involved in encroachment.
- Despite numerous commissions to address the landlessness problem, there has been only limited progress. A Squatter Problem Resolution Commission has recently been set up, but the difficulties in differentiating *sukumbasis* from *hukumbasis* has hampered significant progress.
- Disasters, related to climate change or otherwise, have also produced a new round of landless who settle on forestland perimeters.

2.5 LIMITED FOREST PLANNING AT THE DISTRICT AND LANDSCAPE LEVELS

ER Program design will be strengthened by identifying remedies for significant weaknesses in the forest planning process at both the district and landscape levels in the Terai. One possibility is to form a functional participatory planning platform working across the ERPAA. If implemented, it can offer useful lessons for the overall national development of forest planning protocols. Certainly, the decision to establish the ERPAA across 12 administrative districts rather than across the boundaries of the TAL or Terai physiographic landscapes will facilitate easier planning and implementation.

At present, although there is no effective land use planning process in Nepal, steps have already been taken to improve land use planning. The Ministry of Land Reform and Management, following the creation of the National Land Use Policy in 2012, has commenced the development of national land use implementation plans. Beyond its primary mission of land reform, part of the Ministry's mandate is to support the freed *kamaiyas* rehabilitation work and build upon affirmative action to encourage women to register land individually or jointly through partial or full exemption of registration fees. Land use planning will involve the

development of a Geographic Information Infrastructure that will facilitate more efficient planning and resource management. Moving forward, there is a recognized need for an integrated Land Law; presently there are 59 land-related acts and 23 regulations that contradict one other and offer little coherence. A review of how the forest sector will be integrated into this new law will offer an opportunity to examine interlinkages between the agricultural, housing and forestland sectors.

The DoF has taken initiatives to improve forest planning, specifically across the Terai with limited success to date. Starting in the 1970s, the DoF started to develop interest in establishing district-level forest operational plans. Such plans were only targeted at the Terai primarily because of its repository of valuable forests. In the 1990s, operational forest management plans were developed with donor support for 19 Terai districts in order to create production forests. Although they set out criteria for allocating national forestlands to production forests and CF, these were never implemented due to grassroots opposition because of the lack of livelihood consideration.

To date, the emergence of forest tenure institutions within the ERPAA landscape has been an organic process involving layers of tenure devolution starting from the 1970s. The interaction between different forms of forest tenure institutions (e.g., between CF and CoF) has led to significant contestation. Details about this process are provided in Section 2.8 below. PAs were first established in the 1970s on national forestlands. Then, in the late 1980s, CFs, and to a limited extent LHFs, started to expand across the Terai landscape. Even though CF is the largest forest tenure type within the ERPAA covering 20.5 percent of the forested area (Table 17), attempts to expand CFs in the Terai have faced obstacles in contrast to the Middle Hills where the existence of mostly degraded forestlands with lower forest value permitted a smoother process. Despite initial support for CF, DFOs soon became concerned about the risks involved in handing over large stands of valuable Terai forests to CFUGs. Furthermore, in the Terai's Central and Western region districts with remaining forest cover in the northern edges, CFUG formation by new migrants led to conflict with longstanding distant users in the southern perimeter who were no longer able to access their "historical rights" to forest benefits (Ojha, 2008; Satyal Pravat & Humphreys, 2012).

Within this conflictual context, the government attempted to develop CoFs on GMFs by introducing this new forest tenure type in the revised 2000 National Forest Policy. The aim was primarily to hand over large, contiguous blocks of de facto open-access GMFs to a management modality in which the community would partner with the government. Details of CoF is provided in Section 2.8 below. One of its goals was to address the rights of distant users in the Terai who live in the southern edge of districts now poorly forested. This jumpstarted a competitive struggle between CoFs and CFs. While the 1993 Forest Act had not set out any criteria as to which lands were suitable for CF, the new National Forest Policy stipulated that only the "barren and isolated forests of the Terai" (p.12) would be available for CF. This was immediately contested by FECOFUN.

Compared to the CF forest tenure modality, the government receives substantial revenues from CoF. Initially, it was decided that 75 percent of the revenue would enter the central treasury and the remainder would be channeled to the district government (DDC and VDCs) and local community. This was later changed to 50/50 after some advocacy by CoF communities. All in all, CoF aimed to improve forest management in GMFs, address distant user concerns, and generate significant revenue for the central and local governments. CoF was piloted in specific Central and Western districts in the mid-2000s. Given its support of distant users, CoF was backed up by Madheshi political parties who lobbied against any accession of stronger rights to the Middle Hills migrants (seen as outsiders) living in the northern edge of districts. As a relatively nascent form, only 16 CoFs cover 3.8 percent of total area in the ERPAA (Table 17). The remaining community-based forest tenure institutions (such as LHFs) occupy very small areas of land.

TABLE 17: COMPARISON BETWEEN CF AND CoF WITHIN ERPAA

	Community Forests (CFs)	Collaborative Forests (CoFs)
# of UGs	1,637	16
Total area (ha)	241,484	45,638
# of districts covered	12	7

Source DoF, 2069/70 (2012/2013).

Most recently, PLFs have begun to emerge within the southern belt of certain Terai districts on DDC lands. This provides access to lands for growing trees in closer proximity to settlements. As a result of labor shortages and absentee landlordism, PRFs are also growing. Despite the absence of a formal planning process, it is important to recognize that the devolution process has been steadily expanding covering increasingly larger areas of the ERPAA.

Just before CoF pilots began in the mid-2000s, a skeletal forest planning process had been created. A District Forest Coordination Committee (DFCC) was formed within DDCs through the 1999 LSGA that permitted the creation of committees for facilitating decentralization. This was a standalone committee to bring stakeholders together for forest sector decision-making; it was not connected to any broader DDC land use planning process. When CoFs were formed, the DFCCs were mobilized to help coordinate various rights holder and stakeholder interests across multiple VDCs (Bampton, 2003). Indeed, the idea of DFCCs was proposed by the same Netherlands-funded Biodiversity Sector Programme – Sivaliks and Terai (BISEP-ST) that supported CoF setup. DFCCs are permanent, multi-stakeholder forums that have been established within the DDC in 13 districts (Jamarkhattel, Dhungana, Baral, Rana, & Dhungana, 2009). They bring together varied forest user groups, government and nongovernment agencies, trade and industry, the media, and political parties (with a maximum of 27 representatives). A 2007 study indicated that representation on the committee was as follows: government's forest agencies (30%), local government (22%), civil society (20%), political parties (15%), and private sector (4%) (Rana, Khanal, Kotru, & Jamarkattel, 2009). Although DFCCs face many challenges, they currently provide the only district-level forest planning platform.

The DFCC plays an important role in forest management and benefit distribution, and consequently holds considerable promise. There has been a high rate of implementation of its decisions (Rana, Khanal, Kotru, & Jamarkattel, 2009). However, in the absence of DDC/VDC elections, inadequate directive and detailed guidelines, sufficient supportive resources, and lately the engagement of a large number of political parties within a climate of political flux makes it less than straightforward for DFCCs to deliver on their promise. The presence of so many different interests has led to an unwieldy process. There is also insufficient clarity in the 1999 LSGA as to the linkages between such committees as DFCCs and other local governance bodies. Additionally, it has been unclear how representative those persons appointed to the DFCC are of their constituency so that a two-way flow of communication and decisions regarding forest sector planning can be facilitated. Even so, recent research indicates that the DFCCs have helped to boost citizen participation and increased acceptability of its decisions at large. It has thereby been a vehicle through which democratization at the local level has been deepened (Rana, Khanal, Kotru, & Jamarkattel, 2009). Their potential role as a sharing and learning arena needs further consideration in order to facilitate wider innovation and transformation in the interests of sustainable forest management. This requires a local funding mechanism that can build the autonomic power of the DFCCs.

All in all, DFCCs provide an "anchoring space" for forest planning and are considered a promising new multi-stakeholder forum within the Terai. The outfall of the lack of strong planning mechanisms has been that forest tenure devolution in its organizational and technical dimensions has largely depended on the individualized approach of DFOFs, as well as CSO advocacy (particularly by FECOFUN) and political party interests.

In light of the fact that the FSS indicates the need to find a new balance between multiple uses and interests in forests, there is a strong need to mediate between the competitive forces for forest tenure rights in the Terai for effective implementation that minimizes conflict. This competition for access to forests and its

benefits is primarily structured by the different types of benefit-sharing criteria for each of the forest tenure institutions (Table 18). Planning coordination, therefore, needs to actively mediate between these interests in order to find a negotiated balance that is equitable and workable.

TABLE 18: BENEFIT-SHARING CRITERIA FOR EACH FOREST TENURE TYPE IN THE ERPAA

Forest Tenure Type	State (%)	Benefits	
		Community Share (%)	Individual Share (%)
Government-managed Forests	100		
Protected Forests	100		
Community Forests:			
• Regular		100	
• Selling *Sal* and *Khair*	15	85	
Collaborative Forests	50	50	
Leasehold Forests		100	
Protected Areas	70–50	30–50	
Buffer Zone Community Forests		100	
Private Forests			100
Religious Forests		100	
Public Forests		100	

The enduring resilience of a pro-conservation ideology within the MoFSC (launched by the Himalayan theory of environmental degradation put forward in the mid-1970s) has ratcheted up this competitive pressure because it relies on strict controls over timber harvesting and marketing in the Terai. Whether it is GMF, CF, CoF, or LHF, they each have to go through elaborate permitting procedures to harvest and sell their timber. Therefore, it is common for timber to be extracted and sold under very locally determined and non-transparent agreements between contractors, government forest employees, and certain forestry users. Particularly in light of recent court cases brought on by CIAA investigations into forest-related corruption and illegal timber extraction, DFOFs are exceedingly reluctant to approve timber harvest permit applications (even if approved by operational plans) for fear of approbation. This backlash has had significant negative consequences for both CFs and CoFs, whereby blocks on income flows stem further project development.

Since the new FSS intends to build a vibrant forest-sector industry at all scales to promote economic prosperity while improving forests and timber supply, a review of the timber permitting processes is being considered. With REDD+ objectives part of this mix of multiple uses, it is recognized that intensive forest management through appropriate silvicultural techniques will be needed. As such, within the last few years, "scientific forestry" ideas have risen to the forefront and are being piloted across a range of forest tenure types such as GMFs, CoFs, CFs, and even PLFs. Furthermore, much effort is now being placed on expanding two emerging Terai forest tenure types: PRFs and plantations (on private or government-managed lands), as well as PLFs. Scientific forestry is being developed largely by professional forestry experts indicating the continued reliance on a techno-bureaucratic management paradigm. Instead, it is suggested that there is a significant need to develop silvicultural protocols for particular forest types through participatory approaches. This can involve both the participatory planning platform and adaptation of the farmer field school approaches utilized in the Forest Management Learning Groups promoted by community forestry training centers such as the Center for People and Forests (RECOFTC) in Asia.

The complexity of the Terai's forest tenure mosaic involving both conflictual and synergistic tendencies has produced considerable and effective innovation beyond the formal governance frameworks that established them. Given the large number of donor-supported projects, the significant presence of FECOFUN, and the international and national wildlife conservation NGOs, this is a landscape of overlapping programs, areas of authority, and divergent effectiveness. All are actively engaged in identifying effective solutions for forest management in the overall interests of secure livelihoods, economic prosperity, and biodiversity conservation. The reach of certain donors, CSOs, and NGOs is such that they operate in a somewhat

parallel governance structure to that of the formal government. This is partly the outcome of limited government capacity and fiscal strength on the ground. This plethora of strong agents of change within the landscape additionally indicates the necessity for a multi-stakeholder participatory planning platform to ensure that collaboration and coordination is strengthened while conflict is reduced. It will be valuable for the ER Program to not only undertake an institutional mapping exercise of the current forest tenure modalities and various conservation and forestry programs, but also consider how to improve learning across the multiple conservation and forestry projects established by NGOs (international and domestic), CSOs, and donors.

Lastly, a well-designed participatory forest planning platform can also help address the present capacity limitations of the DFOs. With constantly changing DFOFs (following each shift in incumbent political party), lack of sufficient and trained forest personnel, and relatively low priority given to collaborative and adaptive approaches to forest management, the planning platform can become the vehicle through which not only long-term planning but also learning and innovation can be facilitated across the ERPAA landscape. Given that only one out of the 12 DFOs in the ERPAA (and indeed, in all of Nepal's 75 districts) is female (Parsa), it will be essential for this planning platform to establish criteria for participation that supports gender equity and social inclusion. Lastly, the planning platform can support better collaboration between the DoF and DNPWC. Presently, the local government has little involvement in protected areas management in the Terai.

KEY FINDINGS

- There is no land use planning (under the DDC) nor forest planning process within the DFO that governs the allocation of forest tenure types in the districts or across the Terai landscape. Despite attempts by the DoF to develop forest operational plans for Terai districts, these have never been implemented due to CSO opposition. The pattern of forest tenure devolution has developed organically in layers, largely in the hands of DFO leadership working in a climate of varied CSO and political party advocacy pressures. The complexity of the Terai's forest tenure mosaic involving both conflictual and synergistic tendencies has produced considerable and effective innovation beyond the formal governance frameworks that established them.
- At the national level, as a result of the 2012 National Land Use Policy, the Ministry of Land Reform and Management initiated the process of developing national land use plans. The ministry also affirms the need for an integrated Land Law. This will permit better land use planning as well as land reform that will both ease the encroachment pressures on forests as well as improve integrated forest planning.
- In the early 2000s, DFCCs were established under the DDC in 13 districts to provide a multi-stakeholder platform to guide decision-making in the forest sector. They have wide ranging representation including government officials, political parties from across the spectrum, CSOs, trade and industry, and the media. While DFCCs fulfil a crucial role by boosting citizen participation for decentralization, they need to be considerably strengthened.
- In the context of the need to better address timber demand-supply dynamics, the new turn toward "scientific forestry" is relying on professional forestry expertise for identifying appropriate silvicultural techniques to permit more intensive forms of forest management. This indicates the continuation of a techno-bureaucratic management paradigm; a participatory silvicultural approach is better suited for supporting a multiple use forest management orientation.

2.6 CHURIA CONSERVATION PROGRAM: CONTESTED FOREST TENURE RIGHTS

The Churia hills, or inner Terai part of the ERPAA, is facing serious contestation over forest tenure rights as a result of pro-conservation interests for watershed protection. The large-scale conservation program being planned across the entire Churia range will need to be carefully designed because it could lead to further forest loss due to deep opposition to possible forest use restrictions among local residents. Within the

ERPAA, significant numbers of CFUGs in the Churia will be directly affected by this conservation plan. The ER Program will need to specifically attend to the forest planning as well as tenure institutional frameworks affecting this large sub-category of the ERPAA. This will require developing interventions that ensure forest conservation goals are achieved by the program within existing CFUGs while also considering how the serious problem of landlessness among the Churia's largely poor and marginalized residents can be ameliorated to reduce high levels of forest dependencies. This is of central importance because the Churia cuts across many of the northern edges or entire areas of ERPAA districts.

Since the Fourth Five-Year Plan (1970–1975), the GoN has given consideration to protecting the Churia forests. The Churia hills (within which various Middle Hills districts are also found) cover 27 percent of Nepal's land area and about 15 percent of the population. Besides deforestation (as noted earlier, annual loss of Churia forests is about 0.18%), there is concern that uncontrolled extraction of sand, gravel, and boulders from the riverbeds leads to frequent flashfloods and inundation of downstream areas (FRAN, 2014b). The Churia region is diverse both physiographically and socio-economically, and the causes of degradation and over-exploitation are "trickier and [more] complex" than they appear (CSRC, 2005). Although it is significantly less densely populated than the Terai lowlands, population pressure is growing. From 1991 to 2001, for example, the population increased by 31.3 percent (MoFSC, 2008). Settlements are typically very scattered, often with one to three houses clustered in remote hill slopes with limited track or trail access. Most of this population is migrant, made up of marginal and poor communities (mainly *janajatis* such as Tamang, Chepang, Tharu, Danuwar, Magar, and Gurung, as well as some *dalits*). The more elite Brahmin, Chettri, and Newar communities exist in smaller numbers.

A 2005 study in two Central Terai districts revealed that 70 percent of their population came to Churia between 25 and 55 years ago, primarily due to natural disasters, landlessness, lack of employment, and livelihood opportunities (CSRC, 2005). The lack of household land ownership among the marginalized communities is an important component of the forest conservation problem (CSRC, 2005). Even now, difficulties accessing land (most is unregistered) result in settlements at the top of hills or at the tail end of the main settlements. Inhabitants tend to opt for livestock-raising strategies given the lack of land, but even that has been constrained by forest conservation efforts. Seventy-three percent of households are only able to produce food for six months of the year, and for a high proportion of *dalits,* this window is only three months long (CSRC, 2005). In order to reduce the already low deforestation pressure created by a significantly poor population here, there is a need both to address household land ownership and to determine whether more CFs or LHFs need to be established to regulate forest use. Presently, the pattern of CFs and LHFs and their use of forests across the Churia part of ERPAA is unclear. Such an evaluation will help determine how CF/LHF property rights should be re-structured to meet both the livelihood needs of the poor and watershed protection goals.

Chairperson of a community forest user group in the Churia hills of Dang District

The Churia Area Program Strategy established in 2008 by the government was elevated to the President's Churia Conservation Program in 2011. This program covered 27 districts and aimed to integrate ecological management through livelihood support and regulatory approaches. The weak results from tree planting and formation of eco-clubs in the first phase has produced a new round of intensified attention. In June 2014, the Churia was declared a special protection region with the formation of a President's Chure-Terai Madhesh Conservation Development Committee, which now covers 36 districts. Its task is to develop a Master Plan that includes resource and hazard mapping, new policies and regulations, effective management planning, and restrictions on infrastructure development. Various sub-initiatives have been launched including a Global

Environment Facility-supported project to empower local communities in conservation work within Makwanpur, Bara, Parsa, and Rautahat, being implemented with WWF Nepal.

The regulations to be implemented within forest tenure institutions in the Churia are still being negotiated. The Churia Conservation Program has consistently produced strong opposition from major forestry-related civil society groups such as FECOFUN, NEFIN, and COFSUN. Wary of the imposition of full or very strict restrictions on forest use, FECOFUN has maintained that the new initiatives were developed without consultation with local communities. In June 2014, FECOFUN and COFSUN walked out of a major community forestry conference they had jointly organized with MoFSC soon after the new President's Chure-Terai Madhesh Conservation Development Committee was announced. Lawmakers from Churia have called for local consultation in developing the program and indicated that the Parliamentary Committee on the Environment should have been involved in the establishment of the President's Committee.

In August 2014 a Chure Conservation Joint Struggle Committee, made up of 20 organizations including FECOFUN, NEFIN, and COFSUN, launched a campaign to protest an approach the group believed to be anti-participatory. Four new parliamentary committees were then formed in September 2014 to address the Chure conservation issue. Throughout December 2014, a petition campaign and a series of demonstrations were launched by the Joint Committee: 3,000 CFUGs demonstrated in Makwanpur and 4,000 demonstrated in Rupandehi. Key politicians from major political parties also supported these rallies. A two-day Chure Conservation People's Forum was held in Kathmandu on February 21, 2015 that aimed to identify solutions to the Chure conservation issue. This is presently considered the most serious push against people's rights to forests in Nepal. In response, the President's Conservation Development Committee officially confirmed that it intends to respect the community's rights to forest products; therefore, the issue remaining on the table now is the specific content of the regulatory structure.

The Churia Conservation Program has created uncertainty about harvesting for not only for CFs but also DFOs. In Dang, for example, the DFO requested the DoF to clarify whether a certain number of deformed *sal* trees within Nepal's first scientifically managed government block forest could be harvested. Normally, such clarification would not be needed; the response indicated that no trees were to be cut despite the fact that the management plan had already included this cutting rotation. The proposed conservation program is therefore facilitating the use of discretionary power until the Churia Conservation Master Plan is finalized.

KEY FINDINGS

- Conservation of the Churia hills has been pursued by the GoN since the 1970s. The formation of the President's Chure-Terai Madhesh Conservation Development Committee in early 2014 aimed to create a Master Plan for watershed conservation across 36 Churia districts. This will significantly affect most of the districts in the ERPAA through restrictive regulations on forest use. Its effect on overall forest condition in the Terai belt will need to be taken into consideration in ER Program design.
- The Churia is more sparsely populated than the Terai, and is largely made up of marginal and poor migrant communities, many of whom are landless. The annual rate of deforestation is considerably lower than in the Terai. Landless poor communities here opt for livestock production strategies that require access to forests for grazing.
- There is significant contestation over the government's conservation plans for the Churia. Soon after the new President's Chure-Terai Madhesh Conservation Development Committee was announced, a Chure Conservation Joint Struggle Committee was established as an alliance of 20 nongovernmental and other organizations to advocate for a participatory approach to Churia conservation planning, and a socially equitable set of policies and regulations. Until a regulatory structure is established, there has been a recent rise in DFO use of discretionary power in managing Churia forests.

2.7 OVERLAPPING OR CONFLICTING LAWS GOVERNING THE FOREST SECTOR

Another potential area of tenure conflict emerges from the existence of overlapping or conflictual laws governing the forest sector that can limit forest protection and, therefore, ER. Given that one of the five proposed interventions set out in the ER-PIN includes better planning regarding forest encroachment and infrastructure development in forested areas, a clear sense of potential legal and policy obstacles will be necessary before detailed design can commence. The primary area in which there is lack of clarity is the role and authority of the MoFSC over the forest sector as the country moves toward governance decentralization. The 1999 LSGA provides the legislative framework for the decentralization and democratization of governance, including institutional development of local bodies. Given that the LSGA authorizes the local government to carry out a range of public welfare activities including forest conservation, it is clear that there are ambiguities in the central and local governments' responsibilities over district-level forest planning, revenue generation from its forests, and budget allocations to the district forest sector. This conflict has been held in abeyance because there have been no elections for the DDC/VDC since 2002.

Section 189 of the LSGA states that a DDC's powers and functions cover 16 broad areas that include "Forest and Environment." In this domain, the DDC is required to promote and protect the environment by developing a plan for conservation of forests, vegetation, biological diversity, and soil, and ensure its implementation. Section 202 of the LSGA further states that DDCs must promote projects that protect the environment and that include maximum participation and employment of local people. Section 215 (2) enables the DDC to levy taxes on wool, resin, herbs, slate, sand, and animal products such as bone, horn, wing, and leather, except those items prohibited pursuant to the prevailing law. Lastly, Section 218 empowers the DDC to sell sand, boulders, stones, and driftwood lying within its boundaries.

For the next lower level of governance, Section 28 of the LSGA sets out that the VDC's powers and functions are divided into 11 key domains that also include "Forest and Environment." The responsibilities include:

- Launching afforestation programs in fallow lands, hill slopes, and public lands;
- Preparing and implementing programs for the conservation and development of forests, vegetation, biodiversity, and soil erosion; and
- Formulating and implementing a range of environmental conservation programs.

Particular sections of the law also specify the rights of the VDC over various forest products. Section 58 (d and e) of the LSGA stipulates that the VDC possesses the right to sell dried timber, fuel wood, twigs, branches, bushes, grass, and straw within the VDC's area for income generation. Section 68 (1c and 1d) asserts that the VDC's property includes forests granted by the prevailing laws and the GoN, and the natural heritage of the VDC. Furthermore, the LSGA's Section 96 (c, 5) allocates responsibility for forests, vegetation, and other natural resources within the municipality under one of ten broad areas labelled "Water Resources, Environment, and Sanitation."

Beyond these forest-related stipulations, the local government may also provide exclusive collection rights for quarrying or mining within forested areas such as CF or CoF. Such overlapping rights lead to ongoing confusion and conflict, as well as insecure investments. The clarification of these rights and responsibilities between the MoFSC and the local government will be an important step for secure ER Program implementation.

Additionally, there are a number of sector-specific policies and laws that cross-cut the forest sector including the following:

- Land Use Policy 2012 (Ministry of Land Reform)
- 1997 Environmental Protection Act (Ministry of Science, Technology, and Environment)

- 1985 Mine and Minerals Act
- 1992 Hydro-Power Act
- 2012 Investment Board Act
- 1992 Industrial Enterprise Act
- 1974 Public Roads Act
- 1967 Water Resources Act
- 1974 Public Roads Act
- 1992 Water Resources Act
- 2001 Electricity Development Policy
- 1992 Electricity Act
- 1974 Canal Management Rules
- 1982 Soil and Watershed Conservation Act

The ways in which these intersect with each other in complementary and conflicting ways needs identification. All too often, infrastructure projects affecting forest areas are characterized by inefficient systems of administration, long decision-making processes, and insufficient protocols for information sharing. In the case of major road construction, protocols for planning roads through forest areas, compensation, ensuring minimal environmental and social disturbance, as well as safeguard systems are poorly developed. In the case of the 1982 Soil and Watershed Conservation Act, measures provided to control landslides, floods and erosion, and to establish protected watershed areas, could overlap with forested areas. Most watershed protection projects and forest protection projects have been donor-driven and proceeded without formal planning approval.

Although the 1992 Water Resources Act and 1992 Electricity Act provide for appointed agencies to establish water resource or electricity projects on government lands (which could include forest lands), the 1993 Forest Act states that no project can be established on national forestlands unless it has national priority status and does not detrimentally affect the environment. Similarly, the 1985 Mines and Minerals Act states that all mineral deposits, whether on government or private lands, belong to the government (specifically, the Department of Mines and Geology of the Ministry of Industries). Since the 1993 Forest Act's definition of forest products includes minerals, there are overlapping but conflicting interpretations of who has authority and ownership over minerals and mines on forestlands. An example of this conflict is Godavari Marbles, a successful business established under the Mines and Minerals Act later shut down under the Forest Act. Lastly, while the 1974 Public Roads Act under the Department of Roads allows the government to acquire any land required for road construction and clear fell any existing trees, this contradicts the need to conserve national forestlands as stated under the MoFSC's mandate. Environmental impact assessments should be carried out in such cases, but these stipulations are rarely properly followed (ICEM Asia, IIED, & SchEMS, 2014).

KEY FINDINGS

- There is a significant overlap in the forest sector responsibilities of the DoF according to the 1993 Forest Act and the DDC/VDC based on the 1999 LSGA. Since no elections have been held for the DDC/VDC since 2002, this problem has been held in abeyance. As the spirit of decentralization enshrined in the LSGA starts to be implemented, rights and responsibilities will need to be clarified in order to avoid conflicting authorities over forest management.

- Numerous sector- or activity-specific laws conflict with the forest legislation administered by the MoFSC. In particular, those governing infrastructure construction, mining, road construction, or watershed conservation are unclear on the issue of MoFSC's role regarding planning permission. Compensation requirements for forest loss are weak, and mandatory environmental impact assessments are seldom carried out.

2.8 STATUS OF SPECIFIC FOREST TENURE TYPES IN THE ERPAA

This section examines the current status of the diverse forest tenure types within the ERPAA mosaic. Among the community-managed forest tenure types, CF and CoF stand out as the most important potential contributors to meeting ER goals. Added to this are the forest tenure modalities under the direct control of the government that have significantly protected forests such as PAs, BZCFs and PFs. GMFs, to date, have largely experienced continuing degradation of its forests. The lessons from forest tenure devolution discussed below can guide decisions as to how further devolution of GMFs in the Terai should be undertaken.

Among the ten prevailing forest tenure arrangements, RFs do not need to be considered in ER Program design, as they are extremely small and few in number. LHFs, PLFs, and PRFs also presently occupy small areas within the ERPAA and therefore their inclusion as primary beneficiaries from carbon accounting and emission reductions should be considered from the point of view of transaction costs. That said, these three forest tenure types should be integrated into the ER Program design in order to support improvements to their forest governance, silvicultural management, and livelihood opportunities to promote coherence across the landscape.

In this way, the ER Program can contribute to an integrated, synergistic, and inclusive approach, particularly one that promotes socially equitable forest management and benefits. In this way, a landscape in which landlessness is prevalent can take up a pathway that more efficiently responds to both household and emerging timber demand-supply dynamic, addresses conflict between Madheshi and Hill migrants, and achieves ER. The key findings governing all forest tenure types are presented at the end of Section 2.8.

2.8.1 Devolution of Government-Managed Forests

The ER-PIN proposes the large-scale devolution of all GMFs (300,000 ha in total with 220,000 in the Terai and 80,000 ha in the Middle Hills) under the ER Program. This would be devolved into a range of options: CFs, CoFs, and potentially a new tenure form—private plantations.[14] This intervention is considered necessary given that GMFs function in a largely de facto open access mode due to the institutional vacuum that has led to degraded forests. According to the ER-PIN, there is better carbon sequestration in CFs than in GMFs. In addition, the Terai and Churia FRAs indicate that GMFs in Churia are not under the same intensity of forest pressures as in the Terai. In general, the annual rate of forest loss in the Churia is less than half that in the Terai. It is important to note, however, that higher levels of carbon are sequestered among plains Terai forests than in inner Terai or Middle Hill forests due to ecological factors. This indicates that devolution should commence in the Terai GMFs. This phased approach will also allow the Churia conservation programs to be finalized.

About 53 percent of the national forests in the ERPAA are GMFs. GMFs are much more degraded than other forest tenure types; they experience heavy and consistent deforestation and degradation pressures when located near settlements and road infrastructure. Many communities, even those with access to other community-based forest tenure institutions, still rely on GMFs to meet their needs when local forest products are inadequate.

[14] Some of this land will likely be lost (about 12,000 to 15,000 ha) to the infrastructural development projects for a new airport, as well as railway and road systems.

The GMF category was created in the 1993 Forest Act and 1995 Forest Rules. GMFs are under the ownership of the GoN and are directly managed by the DoF. Although commercial extraction does take place on these forests, they are primarily managed for forest conservation. An annual or periodic management scheme, normally established by each DFO, passively manages GMFs, allowing the harvesting of only 4D (dead, dying, decaying, and deformed) trees because of a ban on green felling. While trees become 4D through a natural process, it is possible to induce such a state illegally, thus increasing the available pool for extraction. In the Terai, however, old *sal* trees with hollow cores have a lower economic value than those harvested at the prime age of between 70 and 80 years. This has produced a stagnant forest ecology said to be up to 30 times below its productive potential (Bampton, Ebregt, & Banjade, 2007). Therefore, there has been a move toward use of scientific forestry; a pilot in Dang District's GMF is currently experimenting with active silvicultural methods to enhance forest productivity.

Harvested log of an old *sal* tree with a hollowed-out core

In addition to examining the direct role of tenure in forest management, it is also necessary to understand how these forest tenure institutions are linked within various forest products value chains. A monopoly extractive right has been given to the Timber Corporation of Nepal (TCN), a semi-autonomous, para-statal organization. It was set up in 1960 to help with removal, transportation, and utilization of timber produced from forest cleared for agriculture, infrastructure, and resettlement programs, particularly in the Terai. Once the remaining GMFs are devolved, it is unclear what the TCN's role will be. The corporation obtains roundwood from the GMFs at royalty rates and sells the logs, sawn timber, and fuelwood in the market at a rate established by its board in conjunction with the MoFSC. These prices vary by district and are below the market price. The TCN is the single most influential organization in forest product markets in Nepal, even though it is slowly being reduced in size.

The absence of any specific regulation governing timber sales in the 1993 Forest Act has led to a thick timber sales regulatory structure determined by the vagaries of local institutions. A complex, implicit set of rules governs timber sales making timber marketing very opaque, and much activity takes place informally or is underreported. The District Forest Supply Committee governs the marketing of all timber from GMFs (through TCN), CFs, CoFs, LHFs, and BZCFs. The committee's primary task is to fulfil the needs of the district residents and industries. It then divides the remaining stock with the DFO and TCN, each selling 50 percent. When purchased by contractors in the market, the timber finally enter a free-market scenario. Pricing structure varies considerably across districts and markets; much profit is made by playing these factors against each other to produce significant kickbacks. Altogether, the four main economically valuable tree species generate substantial revenue for the government, although much of this revenue has not been funneled back into forest management over the last few decades. The MoFSC is keen to reform the timber marketing system to increase its efficiency and transparency.

Generally speaking, communities can only collect grasses, dead branches, and some fruits from GMFs contingent on agreement by the local forest staff. In some cases, rights to collect specific NTFPs can also be granted by permission. However, insufficient capacity to actively patrol these large areas results in a fair amount of illegal forest use as well as regular livestock grazing. Interest in obtaining areas of GMFs for development projects is relatively high because there are limited compensation stipulations within the 1993 Forest Act: an equivalent amount of land must be provided to the government and 25 trees must be planted for each tree cut. In practice, though, these rules are typically ignored.

Given the new multiple use orientation of the FSS, studies have been recently carried out to determine how to establish a new balance between conservation and market-oriented production. One study that compared 2011 baselines with a projected 2015 scenario concluded that both CFs and CoFs in the Terai will sustainably produce more wood products and timber for the market than will GMFs (Table 19 and Table 20; Kanel et al., 2012). This confirms the rationale for further devolution of GMFs proposed in the ER-PIN.

TABLE 19: PROJECTED EFFECTIVE SUPPLY (YIELD) OF WOOD IN 2011 AND 2015 (IN '000 METRIC TONS)

Land Use	Year 2011				Year 2015			
	Mountain	Hills	Terai	Total	Mountain	Hills	Terai	Total
Agriculture	206.25	1,757.55	535.59	2,499.39	206.25	1,757.55	536.38	2,500.18
Non-Cultivated Inclusions	505.37	438.90	32.18	976.44	505.37	438.90	32.37	976.64
FORESTS								
CF and CoF	373.50	2,679.75	1,593.60	4,646.85	373.5	3,161.25	2,035.2	5,569.95
Forests under PA	0	0	0	0	0	0	0	0
PLF	20.25	20.25	–	40.50	20.25	31.5	0	51.75
GMF	5.76	1,871.76	1,283.80	3,161.32	5.76	1,723.92	1,137.24	2,866.92
Grassland	0	28.66	0.78	29.43	0	28.66	0.78	29.43
Others	0	0	0	0	0	0	0	0
Total	1,111.13	6,796.86	3,445.94	11,353.93	1,111.13	7,141.77	3,741.97	11,994.87

Source: Kanel et al., 2012.

TABLE 20: PROJECTED EFFECTIVE SUPPLY (YIELD) OF TIMBER IN 2011 AND 2015 (IN '000 METERS^3)

Land Use	Year 2011				Year 2015			
	Mountain	Hills	Terai	Total	Mountain	Hills	Terai	Total
Agriculture	41.25	468.68	178.53	688.46	41.25	468.68	178.79	688.72
Non-Cultivated Inclusions	101.07	117.04	10.73	228.84	101.07	117.04	10.79	228.90
FORESTS								
CF and CoF	74.70	714.60	531.20	1,320.50	74.70	843.00	678.40	1,596.10
Forests under PA	–	–	–	–	–	–	–	–
Leasehold Forests	4.05	5.40	–	9.45	4.05	8.40	–	12.45
Government-managed Forests	1.15	499.14	427.93	928.22	1.15	459.71	379.08	839.94
Grassland	–	7.64	0.26	7.90	–	7.64	0.26	7.90
Others	–	–	–	–	–	–	–	–
Total	222.23	1,812.50	1,148.65	3,183.37	222.23	1,904.47	1,247.32	3,374.02

Source: Kanel et al., 2012.

2.8.2 Community Forests

As the primary community-based forest tenure modality in the Terai, the tenure conditions and achievements of this regime will play a pivotal role in contributing to the ER Program objectives[15]. As noted earlier, the expansion of CF in the Terai has not been as smooth as in the Middle Hills. It is perhaps for this reason that there are few studies of the reach and performance of CF in this landscape. This assessment presents findings on the geography of its current status within the ERPAA as well as its tenure conditions and challenges. This

[15] In general, REDD+ projects can build upon the institutional, social, economic, and environmental benefits created within CF even though it is clear that CF institutions will need to be adjusted in order to meet key REDD+ criteria (see Newton et al., 2015).

section assesses the current status of CFs by examining the forest tenure institution's emergence, legal basis, agents of change, achievements, and challenges in the ERPAA.

Within the ERPAA, CF is the community-based forest tenure institution that offers a relatively more stable and well-established platform for developing interventions to meet ER goals than other community-based forest tenure types. Over the last three decades, the development of CF across Nepal has led to reasonably effective institutional formation, governance, management, as well as benefit-sharing through shared learning and innovation. Over time, CF has been transformed from a protection-oriented form of forestry into a property rights regime that delivers multiple livelihood and non-forest benefits through improvements in forest conditions. All in all, according to the 2011 Community Forest Livelihoods Impact Study jointly conducted by the Livelihoods and Forestry Program (DFID), Nepal-Swiss Community Forestry Project (SDC), and the MoFSC, CF in Nepal has developed into a radical approach for local-level change (MoFSC, 2013).

Within the ERPAA, about 1,600 CFUGs (of diverse sizes as well as varying capabilities and goals) presently cover an area of 241,500 ha. There has been reasonably good growth of CFUG numbers over the last ten years being more prevalent in districts with higher forest cover. In addition to the challenges of expanding the area under CF in the Terai as a result of DoF orientation towards Terai CF as well as addressing the needs of distant users, the fact that CF takes place in a high-value forested landscapes creates its own unique set of pressures on CF governance and benefit-sharing. By and large, innovative solutions have been developed in some CFUGs to address conflictual situations, as well as issues of social inclusion. In terms of implementing the ER Program, therefore, improvements to the CFUG governance system will be important, including gender and social inclusion dimensions. One way to approach this is to support learning and sharing of experiences and best practices across the landscape. Additionally, operational plans could benefit from being transformed into more participatory and affordable approaches that are technically suited to this specific forest ecology, particularly in order to avoid negative repercussions for the poor and marginalized (who bear the primary brunt of stronger forest protection measures). In this way, improved forest conservation is addressed through a better planning and decision-making process that mediates between different interests within the community.

In order to reduce ER Program transaction costs (given the large number of CFUGs) and minimize inter-household conflict, the investment of cash benefits from results-based finance is best directed at the improvement of collective welfare (such as provision of renewable energy technologies) and enhanced forest management. This is preferable to the distribution of cash benefits to individual households, particularly given the absence of a current mechanism to achieve this.

Registration of a new community forest user group in Kapilbastu District

CF has fairly good tenure security because it was established through a legal framework. CF was introduced in the 1989 Master Plan for the Forestry Sector as a new forest tenure institution that would enable the government to devolve control over national forests to nearby communities in order to improve forest cover and management. The 1993 Forest Act, 1995 Forest Rules, and 2009 CF Guidelines collectively form the legal and regulatory framework through which local-level CFUG tenure governance occurs (Dahal & Chapagain, 2008; Kanel, 2004; Ojha et al., 2009). While CFUGs do not have the ultimate right to alienate their land through sales or mortgages, they have a reasonably strong and secure set of protections that provide substantive autonomy for their tenure institution. The legal conditions governing its mandate and

governance have been consistently defended in Supreme Court cases. There was a push to devolve full ownership through the new constitution, an issue that created some debate during the drafting of the new FSS.

The 1993 Forest Act identifies CFUGs as self-governing and autonomous entities (established by a constitution) that are created in perpetuity, unless they override any legal or regulatory stipulations. The Act specifies that forests are "handed over" by the DFO to a CFUG in order to "develop, conserve, use and manage the forest and sell and distribute the forest product independently by fixing their prices according to operational plan" (Article 25(1)). Membership for a given CFUG is open to male and female members of households from villages near the proposed forest area upon payment of a membership fee (that may be waived for the very poor). CFUGs can manage their own allocated forests based on a renewable five- or ten-year operational plan (that includes limits on the annual allowable cut) approved by the DFO. The approved operational plan guides their activities for collecting local firewood, fodder, and other needs as long as the forest is conserved. They must submit an annual activity and budget report to the DFO. Entitled to decide how to use their forest products, they can sell their timber as they choose (after DFO approval), and only pay 15 percent tax on two commercially valuable species (*sal* and *khair*).

Should the CFUG fail to follow the laws and CF Guidelines, the government retains the right to suspend the user group functions; once the issue is resolved, however, the CFUG should quickly resume use and management rights over the forest. Important CF-related aspects of the Forest Act, Rules, and CF Guidelines are presented in Table 21.

TABLE 21: KEY ELEMENTS OF CF TENURE INSTITUTIONS AND SYSTEMS

Tenure Institution and System	Key Characteristics
Governance	• All management decisions (land management and forest management) are made by the CFUGs. • CFUGs can hold their own bank account. • The elected executive committee has gender equitable membership, and key office bearer positions rotate each term by gender. • Records of executive committee meetings are maintained and publicly available. • There are mutually recognized user rights (stated in the 1993 Forest Act). • The state provides technical assistance and advice. • CFUGs have the right to network with other CFUGs.
Membership	• Six user types are identified (e.g., traditional users, forest-dependent users, and distant users). • Each member of the CFUG has equal rights over the resources. • Each household is recognized as a unit for membership (including both a male and female member per household).
Use Rights/ Forest Area	• All accessible forests can be handed over to users without any limitation on area, geography, and time. • CFUGs are not be affected by political boundaries.
Management	• Silvicultural techniques may be used as appropriate and approved; forest cash crops and medicinal NTFPs may be planted in forests as long as the main trees are not disrupted. • CFUGs can fix prices for forest products sold within CFUG and outside (by permit) • Benefits are distributed equitably. • 25% of CFUG income is spent on forest management, 35% on pro-poor interventions, and the remainder in a manner decided by CFUG members. • Fuelwood may be distributed freely or with fee within CFUGs. • Forest guarding takes place through paid guards or voluntary engagement. • The executive committee mediates conflicts.

Tenure Institution and System	Key Characteristics
Exclusion	• Outsiders are excluded from access (including earlier customary users who are not CFUG members).

From the beginning, CF was accorded priority status within the MoFSC's forest sector programming. Although CF expanded rapidly in the Middle Hills, its growth in the Terai faced persistent obstacles. The high value of the Terai's expansive *sal* forests created a different set of competitive pressures for the expansion of CFUGs. Nationally, 72 percent of total CFUGs exist in the Middle Hills while the Terai only has 11.73 percent. FECOFUN has consistently pushed for CF expansion in the Terai through policy advocacy, as well as local awareness, capacity building, and networking. At the beginning, Terai DFOFs supported the creation of new CFUGs, but as this process gained momentum, a sense of growing ambivalence became clear about whether valuable *sal* block forests should be handed over, rather than only degraded, peripheral forest patches. In light of this and despite a study by the German Development Institute indicating that the expansion of CF into the Terai was feasible and viable (Bampton, Ebregt, & Banjade, 2007), DFOFs would often delay new CFUG applications. Although many potential CFUGs had completed their constitutions and operational plans (at some expense), they waited a long time for approval. Such "potential" CFUGs started managing these forests based on their operational plans, but the lack of formal approval meant they were unable to join FECOFUN or sell timber.

Neither the 1989 Master Plan nor the 1993 Forest Act had set out any geographical limitations for the expansion of CFUGs. Even so, as noted earlier, the revised 2000 National Forest Policy (passed by the Cabinet after limited consultation) stated that only barren and remote lands within the Terai would be handed over to CFUGs. This cleared the way to transfer larger, contiguous blocks of valuable GMFs to a new forest tenure modality called CoF that involved a community-government partnership whereby a large revenue share (initially 75%, later reduced to 50%) would go to the central treasury with the remainder benefitting the DDC/VDC and local communities. The 2000 National Forest Policy also attempted to introduce a new stipulation that a 40 percent tax would be levied on total CFUG income. After considerable advocacy by FECOFUN (involving a successful Supreme Court challenge citing the conflict with Article 26(4) of the Constitution that advocated the principle of decentralization), this was reduced to a 15 percent tax on income from two valuable species: *sal* and *khair*.

In order to bolster support for CFUG expansion, FECOFUN joined together with 15 NGOs in the mid-1990s to set up the Terai Community Forest Action Team, which engaged in awareness raising, capacity building, and advocacy (Bhattarai, 2006). It is clear that economic interests have been driving the competitive struggle between CFs and CoFs. As such, the relationship between the DFO staff and CFUGs has been more strained and tense in the Terai than in the Middle Hills. In recent years, the MoFSC regularly attempted to introduce legal amendments and policy directives that would weaken the autonomy and benefits obtained by all CFUGs in order to re-centralize control (Sunam, Paudel, & Paudel, 2013). However, strong advocacy by FECOFUN and others have derailed such amendments. These moves have led to uncertainty about the nature of the legal, regulatory, and administrative environment in which CFs must operate, making direct investments in long-term forest management improvements difficult. This insecurity around CF, if continued, may lead to a risk-averse approach to engaging with the government-initiated REDD+ projects.

In addition to the competition between CF and CoF, the early years of CF growth, as explained earlier, involved clear conflict between CFUG members and distant users in the Terai's Central and Western region districts. Distant users were barred from using new CFUG forest areas where they had traditionally been accessing forest products. As such, there was some attempt to establish CFUGs specifically for these distant users (Bhatta, Karna, Dev, & Springate-Baginski, 2007). Additionally, CFUGs in some districts developed innovative solutions: they gave distant users a separate status within CFUGs through supportive rules that enabled fuelwood and timber access. In Nawalparasi, for example, five distant user VDCs established depots supplied with CFUG products available at nominal rates. Over the course of a year, this positive intervention

by the DFOF resulted in the supply of 12,000 kg of fuelwood (Luintel, Ojha, Rana, Subedi, & Dhungana, 2009).

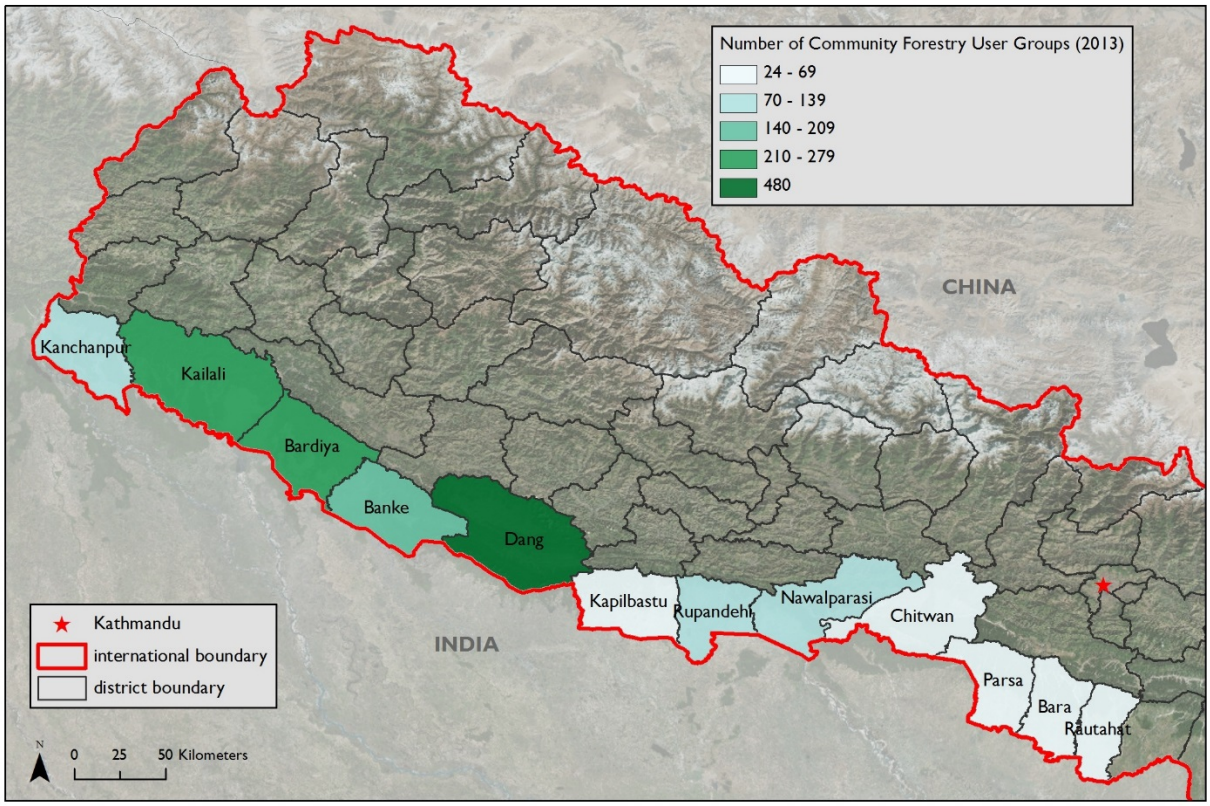
There has been little research on the current geographical range and characteristics of CFUGs across the Terai to support ER Program design. Our analysis of available forest statistics indicates that ERPAA districts with high forest cover have larger total numbers of CFUGs (Table 22 and Figure 18). Dang District, with the highest forest cover of 68 percent, stands out as an exemplary CF district with by far the highest number of total CFUGs. Kailali and Bardiya districts also fall into this category; high CFUG districts do not typically have distant user issues. They also have a higher number of women-only CFUGs. It is Far- and Mid-Western districts and districts with forests within the inner Terai (Churia) but outside PAs/BZs that tend to have higher numbers of CFUGs. The lowest numbers of CFUGs are found in Rautahat, Bara, Parsa, and Kapilbastu districts, all of whom have remaining forests in their northern edge. To generalize, these DFOs have opted for significant areas under CoFs. Parsa is an anomaly: it ranks fifth in forest cover by district area, but has a very low number of CFUGs because it has areas under conservation. Rupandehi is a hybrid type of district possessing both CoF and CFUGs. Its forests are in the inner Terai, has the lowest forest cover (25%), but it also has a fairly high percentage of forest area covered by CFUGs (32%). Because its forests are located in the north, however, Rupandehi also possesses a CoF site. The geography and level of forest cover only explain some of this overall pattern. It is clear that the personal forest management orientation of DFOFs regarding the mix of CFs and CoFs and the advocacy capabilities of FECOFUN's district offices both play a key role.

TABLE 22: STATUS AND COVERAGE OF COMMUNITY FORESTS BY DISTRICT IN 2013

District	# of CFUGs	Area Covered (ha)	Average Area/UG (ha)	Forest Area (ha)	CF % of Total District Forest Area (ha)	# of House-holds	Mean Household #/CFUG
Rautahat	37	5,139	138.89	29,559	17.39	8,502	229.78
Bara	38	8,170	215.00	47,182	17.32	10,776	283.58
Parsa	25	102	4.08	78,343	0.13	3,484	139.36
Chitwan	64	18,055	282.11	128,500	14.05	34,056	532.13
Nawalparasi	123	15,707	127.70	104,942	14.97	34,100	277.24
Rupandehi	85	10,712	126.02	33,874	31.62	45,361	533.66
Kapilbastu	24	1,455	60.63	56,915	2.56	5,394	224.75
Dang	480	98,732	205.69	201,900	48.90	92,745	193.22
Banke	155	27,760	179.10	113,295	24.50	31,965	206.23
Bardiya	278	18,812	67.67	121,682	15.46	45,899	165.10
Kailali	257	25,593	99.58	205,939	12.43	57,773	224.80
Kanchanpur	71	11,247	158.41	80,548	13.96	18,150	255.63
TOTAL	**1,637**	**241,484**					

Source: DoF, 2069/70 (2012/2013).

FIGURE 18: MAP OF TOTAL CFUGS IN EACH DISTRICT IN 2013



While there has been a prevailing sense that the creation of new CFUGs has been difficult, a comparison of the CFUG district-level data from 2004 and 2013 indicates that even in the last ten years (after the commencement of CoF), the total area under CFUGs has doubled and the number of CFUGs has grown considerably, from 953 to 1637 (Table 23, and Figure 19 and 20). Even Dang District, located in the inner Terai, which already had 373 CFUGs in 2004 added a further 107 by 2013. Parsa and Kapilbastu districts have seen little growth in their already-low CFUG area or numbers, but most other districts in ERPAA (whether with low or high forest cover) such as Rautahat, Bara, Nawalparasi, Banke, and Kanchanpur have experienced significant growth. Moreover, this data likely underrepresents total CFUGs actually operating because "potential CFUGs" remain on waitlists.

TABLE 23: COMPARATIVE STATUS AND COVERAGE OF COMMUNITY FORESTS BY DISTRICT IN 2004 AND 2013

District	Forest Cover as % of District Area	2004			2013		
		# of CFUGs	Area Covered (ha)	CF % of Total District Forest Area (ha)	# of CFUGs	Area Covered (ha)	CF % of Total District Forest Area (ha)
Rautahat	26.25	13	1,050	3.57	37	5,139	17.39
Bara	39.65	13	1,818	3.85	38	8,170	17.32
Parsa	57.90	25	102	0.14	25	102	0.13
Chitwan	57.94	24	9,293	7.23	64	18,055	14.05
Nawalparasi	48.54	34	2,638	2.64	123	15,707	14.97
Rupandehi	24.91	43	7,698	26.01	85	10,712	31.62

District	Forest Cover as % of District Area	2004			2013		
		# of CFUGs	Area Covered (ha)	CF % of Total District Forest Area (ha)	# of CFUGs	Area Covered (ha)	CF % of Total District Forest Area (ha)
Kapilbastu	32.75	24	1,455	2.11	24	1,455	2.56
Dang	68.32	373	66,250	40.92	480	98,732	48.90
Banke	48.48	77	8,367	5.62	155	27,760	24.50
Bardiya	60.09	163	7528	6.03	278	18,812	15.46
Kailali	63.66	128	10,590	5.30	257	25,593	12.43
Kanchanpur	50.03	36	4,686	5.31	71	11,247	13.96
TOTAL	**51.60**	**953**	**121,475**		**1,637**	**241,484**	

Source: Bhatta, Karna, Dev, & Springate-Baginski, 2007; DoF, 2069/70 (2012/2013).

FIGURE 19: PERCENTAGE OF DISTRICT FOREST AREA COVERED BY COMMUNITY FORESTS IN 2004

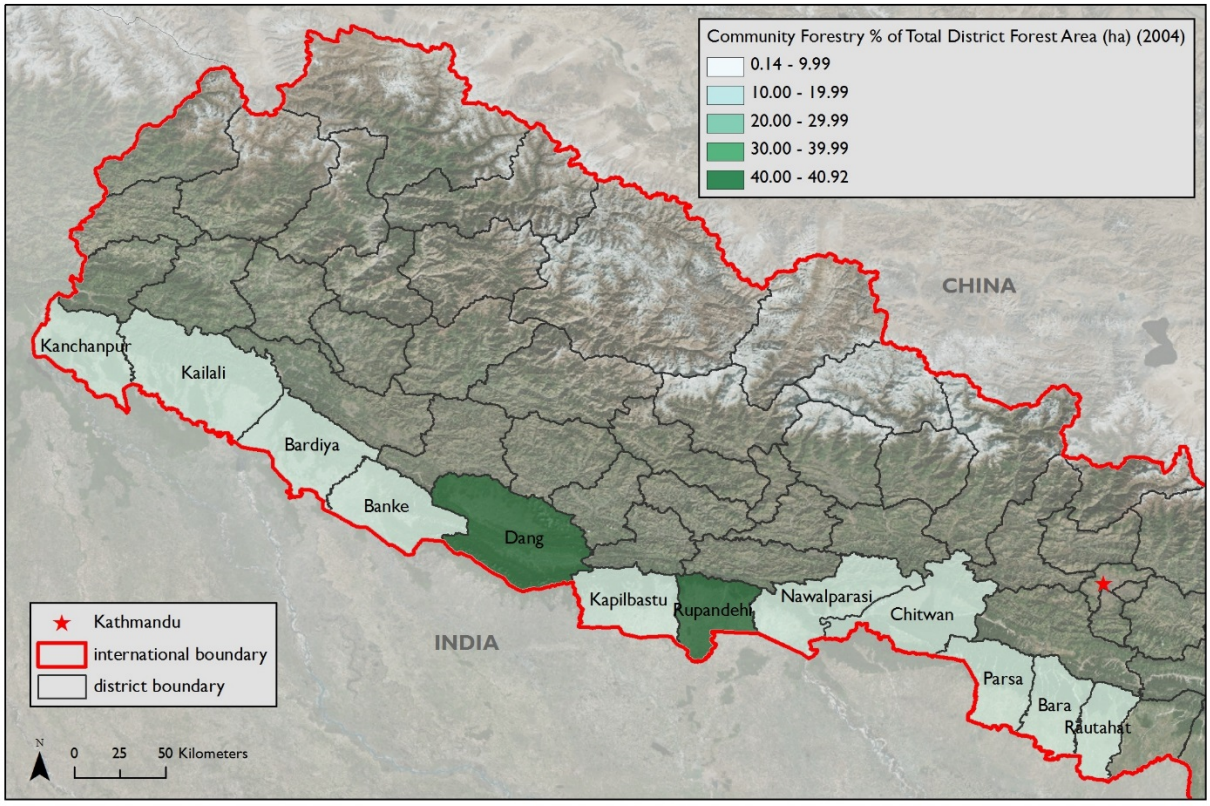
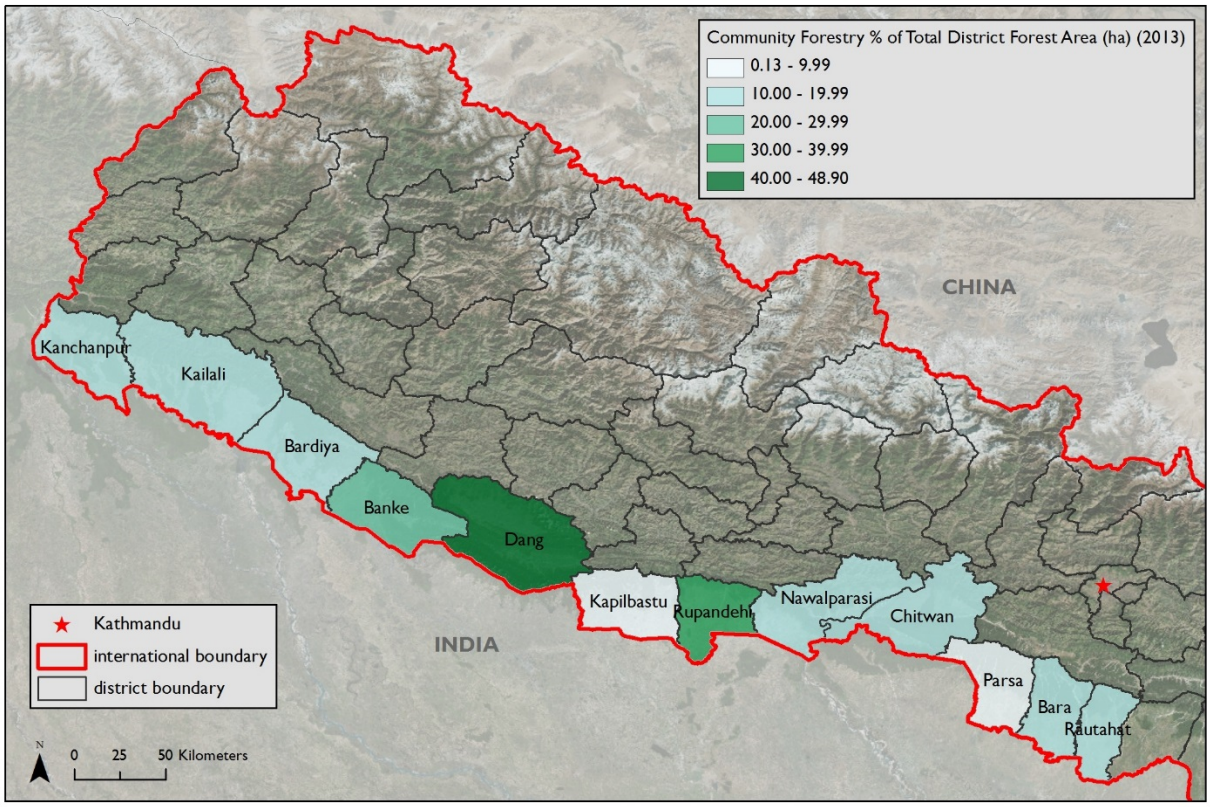


FIGURE 20: PERCENTAGE OF DISTRICT FOREST AREA COVERED BY COMMUNITY FORESTS IN 2013



Lastly, based on forest statistical data, it is clear that CFUGs, on average, are much larger in the Terai (148.09 ha) than in the Middle Hills (84.89 ha). Very significantly, the mean number of households per CFUG is starkly different: 11 for the Middle Hills and 233 for the Terai. There can even be up to 2,000 households in a Terai CFUG. This is likely related to lowland topography and relative accessibility of the Terai forests. Therefore, although the total number of CFUGs is considerably lower in the Terai than in the Middle Hills, relatively speaking, it covers a larger total area and population.

In the Terai, CFUGs present a relatively functional institutional platform supported by some DFOFs and CSO engagement. Although donors have been involved in Terai CFUG formation, they have not had a major role since large handover rates have occurred in districts with no donor projects (Bhatta, Karna, Dev, & Springate-Baginski, 2007).[16] Grassroots support mobilized by a democratic political turn has been the primary force behind CFUG growth. A national analysis of CFUG costs indicates that only 17 percent of CFUG cost, on average, is borne by donors, and 13 percent by governments; the majority remainder is covered by communities themselves, indicating a high level of independence (Ojha et al., 2009). About 90 percent of CFUGs are federated into the national CSO, FECOFUN. FECOFUN carries out advocacy activity to defend CF interests and provides support to CFUGs through capacity building, lesson sharing, and peer-to-peer learning opportunities. In addition to FECOFUN, other national organizations that support CF include Forest Action that carries out advocacy-oriented forestry research, the Himalayan Grassroots Women's Natural

[16] A number of key donor agencies (including the British, Danish, Dutch, Swiss, and American) and development organizations (such as CARE) have been heavily involved in supporting the establishment of CFUGs and providing capacity-building support in both the Middle Hills and Terai. In 2012, the new 10-year MSFP was supported by three donors (British, Swiss, and Finnish) to build the current phase of forestry-related support.

Resource Management Association (HIMAWANTI), and the Community-Based Forestry Supporters Network, Nepal (COFSUN).

CF as a forest tenure institution has considerable experience mediating between forest conservation and livelihoods goals. This provides a positive institutional environment in which to launch REDD+ initiatives. Although CF was initiated by the government in order to address a poorly performing and centralized approach to forest conservation, the design of CF eventually began to address social development needs. In its early years (1993 until early 2000s), the focus of CF was primarily on improving forest cover; in recent years (early 2000s to present), attention has moved toward poverty alleviation and social inclusion, reflecting the new national planning priorities set up under a multi-party democracy. Studies from the early period showed that elite institutional capture was a recurring problem (Pokharel & Nurse, 2004). Therefore, the 2001 CF Guidelines were amended in 2009 to address social inclusion, elite capture, and distant users. FECOFUN's gender equity rules requiring 50% female membership of CFUG executive committee (and gender-wise rotation of key office-bearer positions) were adopted in the CF Guidelines. The early 2000s also saw the development of a Gender and Social Inclusion Strategy in the MoFSC that was finalized in 2008.

Members of a women-only community forest user group in Kailali District

Additionally, the CF Guidelines stipulated that 35 percent of CFUG revenue would be devoted to pro-poor interventions (identified through well-being ranking), 25 percent for forest development and maintenance, and the remainder spent according to CFUG priorities. While there has clearly been a shift in CFUG governance to address social inclusion issues, the governance body still tends to be dominated by elite groups, although there is considerable variability. Even as internal equity issues are being addressed, the exclusion of those marginal *janajati* groups with customary forest practices from CFUG membership needs closer attention. It is hard to make generalizations about such exclusions because in areas such as Dang, pre-existing tenure rights to *churi* trees used by Chepangs have been honored. CF is now moving into an emerging third phase that focuses on improved sustainable forest management (including for REDD+) that aims to more effectively integrate social, economic, and ecological needs.

CF has produced a wide range of substantial environmental, social, and economic benefits (Luintel, Ojha, Rana, Subedi, & Dhungana, 2009; Magrath, Shreshta, Subedi, & Dhungana, 2013; Ojha et al., 2009). Terai CFUGs have been able to manage their forests better than GMFs because they experience less forest disturbance (FRAN, 2014a). That said, some Terai CFUGs located in *sal*-rich areas are involved in lucrative hardwood sales through opaque and collusive channels that only benefit a small elite group (Iversen et al., 2006). National assessments of CF indicate that its achievements include: forest restoration of barren land; protection from forest fires; income generation from selling timber; watershed conservation; widespread community and local development through road construction, community buildings, ponds, drinking water facilities, biogas or improved cookstoves, community clinics, temples, and ecotourism facilities; school scholarships for the poor; and private enterprises (such as handmade *Lokta* paper production, NTFPs, etc.) (MoFSC, 2013). Diversification of household production activities has also been supported. Many of these initiatives have improved the ability of CFUGs to adapt to climate change with greater resilience. In short,

CFUGs have not only improved forest condition and addressed social welfare together with household livelihood needs but have, especially during the Maoist conflict years, been the de facto local government and contributed to peace-building (Chapagain & Sanio, 2010).

A recent study commissioned by MoFSC indicated that CFUGs earned a total average annual income of Nepali rupees (NRs) 260,000 per CFUG (over three fiscal years), which annually totaled US$49.1 million for all 14,571 CFUGs combined (Kanel, 2012). The income of Terai CFUGs is higher than in the Middle Hills because of the high market value for its forest products, including NTFPs such as medicinal herbs. Terai CFUGs, therefore, are more oriented toward timber production and sales thus enabling support for a wider range of public welfare projects. Shankar Nagar CFUG in Rupandehi District, for example, earns more than 3 million NRs per year. Sundari CFUG in Nawalparasi, over a five-year period (2003–2006) earned NRs 6 million from forest products sold at a discounted rate within its own CFUG. This is larger than the total local VDC budget (Luintel, Ojha, Rana, Subedi, & Dhangana, 2009).


Collection of mushrooms in Janahit Mahakali community forest user group in Kanchanpur District

A study carried out by the DFID-funded LFP in 2008 concluded that in its seven Middle Hill districts, there had been a large increase in household incomes between 2003 and 2008 amongst CFUG members (LFP, 2009). A 61 percent growth in the real incomes of respondent households led to a narrowing of the wealth gap due to good progress made by the poorest and most excluded social groups. It estimated that CFUG income contributed about 25 percent of the total improvements in income-based poverty reduction. In order to further enhance income generation by CFUGs, the permitting procedures for CFUGs timber sales as well as rules on establishment of wood processing facilities near CFUGs need to be simplified and relaxed.

This substantial income, pooled into a general fund rather than distributed among users, has on some occasions been used by elite executive committee members in less-than-transparent ways to construct community or private projects of their choice. Therefore, elite capture takes on a specific form in some Terai CFUGs. The current problem is that DFOFs are reluctant to approve permits to sell timber according to operational plans because of recent CIAA investigations into illegal timber extraction and corrupt marketing. This is the case even though Terai DFOs benefit from these timber sales, because of the MoFSC tax on *sal* and *khair*. This has placed a major block on public welfare initiatives, as well as income-generation projects within CFUGs.

Individually, poorer households are often restricted to use of fodder, dry twigs, and leaf litter for no charge with little say in CFUG fund allocations toward public welfare projects (Bhatta, Karna, Dev, & Springate-Baginski, 2007). Although CFUG members indicate that the forest condition, as well as firewood and fodder availability, has improved, it has not been able to fulfil total livelihood needs; national forests, therefore, remained a supplementary source. There are ongoing attempts within CFUGs to directly address the needs of the poor and marginalized. Where incomes are being supplemented by migrant remittances, households do start to use liquefied petroleum gas (LPG) or biogas to reduce their dependencies on forests. Data from a 2004 study indicated that CFUGs in the Middle Hills spent 28 percent of their income on forest management, 36 percent on community development activities, but only 3 percent on pro-poor interventions (Kanel, 2004). This is probably true for the Terai as well, although research on this will aid better management.

In the Terai, however, some innovations are being developed to support poorer communities. In many CFUGs, sub-groups of poorer and marginalized members carry out informal leasehold forestry. They are allocated a specific forest plot for meeting their subsistence and livelihood (and typically livestock production) needs. The DFO provides support by supplying seedlings and other technical capacity. Beyond such efforts, there are positive examples of successful forest conservation by poor communities throughout the Terai. A CFUG in Kanchanpur being supported by the USAID-funded HBP has achieved considerable success protecting its forest, which includes the rare *Bijay sal* tree species. Made up of freed *kamaiyas*, the Janahit Mahakali CFUG has reforested the bare land on which they were resettled from 2004. Some 530 households have worked together to resurrect 200 ha and have worked to protect the *Bijay sal* which has considerable medicinal value. In addition, the CFUG declared their CF a no-grazing zone in early 2014 and purchased cement feeding troughs to help make the transition. Its executive committee has seen an increase in the number of women members recognizing that women will now be taking up greater responsibilities for forest management with increasing migration. There are many examples throughout the Terai of CFUGs providing opportunities for *dalits* and *janajatis* to take up an active role in forest management.

Black resin of medicinal value from the endangered *Bijay sal* tree in Janahit Mahakali Community Forest in Kanchanpur District

In terms of gender equity, generalizations are difficult because of significant differences in cultural gendered norms between Madheshi and Middle Hill communities. The former tend to place more mobility restrictions on women and, as such, are not as actively involved in extra-domestic income-generation opportunities. Among migrants from Middle Hills, such restrictions are not as common, with the result being a higher workload for women. That said, due to the gender transformative rules in both the FECOFUN constitution and CF Guidelines, gender norms have changed among both Madheshi and Middle Hills households. Men now are taking up more responsibilities to ease women's work burden, and women are able to take up opportunities further afield to build up their family's economic security. In general, women have been actively contesting the male-dominated governance structures of CFUGs given that they are the primary forest users (Giri & Darnhofer, 2010).

There are also a significant number of women-only CFUGs across the Terai, in particular, within the Mid-Western and Far-Western regions.[17] Dang District has the highest number with 64 women-only CFUGs. In these districts, women have played an important role in excluding encroachers from their forests (taking up protests outside DFOs), spearheading projects to cultivate NTFPs for income generation, and establishing savings and credit groups. One such example is Chitwan's Chelibeti CFUG that is the lone women-only CFUG in the district and considered to be its best-managed. Nevertheless, the overall struggle for women of various income backgrounds to gain greater access to mixed-gender executive committee membership and possess active decision-making power remains a prevalent obstacle to gender equity.

One of the core problems facing CFUGs is the more than 50 percent backlog in renewal of five- or ten-year operational plans that must be approved by the DFOs. Although they are meant to be developed in a

[17] There are many reasons behind the creation of women-only CFUGs. One commonly cited reason is the requirement for large CFUGs to perform an Initial Environmental Assessment (IEA) or an EIA based on the 2003 IEE/EIA Review Guidelines for Forestry Sector. Instead of paying for the high cost of an assessment, the CFUG is divided into two with one part handed over to women. Women, therefore, are often double members in adjacent mixed-gender as well as women-only groups.

participatory fashion by all CFUG members together with technical support from DFO staff, in practice they are prepared by DFO staff or service providers and summarily approved by a few executive committee members. Their expense and complexity have become obstacles to the CFUGs. Addressing multiple needs in a socially inclusive way requires a forest operational planning process that is accessible, simple, cost-effective, and participatory. Although the MSFP has aimed to ensure that all operational plans are up-to-date in the near future, it is unclear if there will be a significant change in the operational planning guidelines by developing alternatives that are less reliant on DFO technical expertise. As much as the forest staff are encouraged to work in a facilitative manner, a strong techno-bureaucratic paradigm is still in operation. Participatory silvicultural management that does not depend solely on professional forest knowledge is a poorly developed arena of forest management around the world. There have been attempts to pilot these alternative approaches in Nepal by RECOFTC and others.

Office-bearers of a women-only community forest user group in Kanchanpur District

For the ER Program, one of the possible arenas for intervention is therefore supporting revision of the operational planning process to enable communities (in both established and new CFUGs) to adopt a participatory silvicultural management approach. This is a central part of the property rights bundle that governs technical management of the forests as well as benefit-sharing. Within the REDD+ learning pilot carried out by the International Centre for Integrated Mountain Development (ICIMOD), FECOFUN, and ANSAB in three districts, it was clear that stricter rules on collection of forest products and grazing led to greater conflict (Sharma, 2013). As a result, rules were eased after the first year. The project provided select CFUGs with funds to revise their operational plans to reflect the REDD+ objectives.

In terms of ER interventions, FECOFUN has maintained that any REDD+ initiative needs to acknowledge the considerable role of CFUGs in having already improved their forest condition (be they in Middle Hills or Terai). This has been an important factor in reducing deforestation rates over the last 15–20 years. Therefore, one of the key questions for ER Program design is to determine which types of collective or household incentives will work to additionally prevent deforestation and degradation, as well as increase carbon sequestration. These need to appropriately compensate any foregone benefits (basic forest product supply, livelihoods, and income generation) or, preferably, help improve co-benefit flows.

Both existing and newly formed CFUGs (through the proposed devolution of GMFs) will need to be provided with an equivalent incentive structure. Any initiatives that support the poor and marginalized will, in parallel, have to offer elite members an interest in positive collective outcomes. In particular, intra-CFUG differences in benefit distribution will need to be carefully considered to prevent conflict.

2.8.3 Collaborative Forests

As explained earlier, CoF is a more recent introduction in the devolved forest tenure landscape. It will form a central component of the proposed ER Program intervention for devolving all GMFs to community-based forest governance systems. Following an examination of the factors behind the current distribution of CoFs across the ERPAA, an assessment is presented of CoF advantages and challenges for meeting ER goals.

The CoF Management Guidelines issued in 2003 define CoF as "management of government-owned forests in collaboration with His Majesty's Government and stakeholders in consonance with the approved forest management plan for the livelihood and achievement of multipurpose benefit including economic benefits and maintaining ecological balance of the forest." Through professional silviculture-based forest management approaches used on a large scale, the aim was to improve productivity while supplying timber and fuelwood to local communities and generating employment (Paudyal, 2007).

The revised 2000 Forest Policy introduced CoF both because of poor management of GMFs as well as growing conflict between distant users and new CFUGs forming within the northern edge of districts. To begin with, there was a perception within the DoF that CFs were not operating properly in the Terai for a variety of reasons: lack of forest staff training, hastily developed CFUGs, poorly designed operational plans, and collusive relationships between CFUGs and timber contractors. CF supporters, however, stood in opposition to the introduction of CoF because of a perception that it would undermine CF's expansion. FECOFUN filed a writ in 2001 challenging the policy in the Supreme Court (Bhattarai, 2006). Since CoF had not been identified within the 1993 Forest Act coupled with little consultation during the development of the new forest policy, a definitive conflict between CF and CoF was set into motion.

It is important to note, in this context, that this forest tenure type holds considerable potential for meeting a specific niche requirement within the Terai forest landscape because CoF management can support those forests not in close proximity to settlements (which can be managed as CFs) even as it is able to provide forest products to distant users, and generate government revenue. In its present form, however, the ability of CoF governance to reliably achieve ER goals over the long-term remains unclear because it has only recently completed its first pilot phase. Based on case studies, the indications are that limited governance and financial management capability, lack of implementation oversight to meet goals such as poverty alleviation and biodiversity conservation, unclear benefits for VDC residents, strong control by DFOs, and effectiveness of forest operational management approach have limited the ability of CoFs to meet its overall objective. An evaluation of the achievements and gaps in CoF governance and forest management would permit an assessment of how it can be effectively supported in order meet ER goals without exacerbating conflict.

CoF was proposed in 2000 under a revised National Forestry Policy and is specifically targeted at remedying the problems facing degraded GMFs as well as conflict between distant users and local users. In February 2000, a concept paper on CoF presented at a National Forester's Association workshop was rapidly utilized to revise the National Forestry Policy so that by May 2000, it was approved under a Cabinet decision. This further shifted the government's forest sector toward a decentered "sector governance" approach by bringing together major stakeholders including government, nongovernmental groups, communities, and the private sector (Bhatta, Gyawali, Shrestha, & Karna, 2012).

Typically, CoF becomes necessary when forestry management moves beyond small-scale community forests to larger, public resources where either an orientation toward protection or production has taken hold (Carter with Gronow, 2005). It tackles the issue of multiple-use forest resources by bringing the strengths of the government (national and local Forest Departments) as well as local communities (those who claim an interest in the forest from a specified region) to the management table. It also implies an equal level of influence by both sides in decision-making, management, and apportionment of entitlements. Often, forest management moves toward a collaborative approach when there is a problem or crisis that cannot be remedied with prevailing approaches. By bringing in the community, the CoF arrangement enables the government to manage the forests with a lower staffing level while also attending to the needs of local users who are well-positioned to engage in effective monitoring and compliance (Carter with Gronow, 2005).

In Nepal, large blocks of contiguous but often degraded GMF forests started to be allocated to CoFs in the mid-2000s, typically in low forest cover Terai districts. CoFs in the ERPAA are all located, except for the small CoF in Kailali, in the Central and Western region districts where low levels of forest cover only exist in the northern belt, far from southern settlements. Kapilbastu occupies nearly 40 percent of the total CoF area even though it was not among the pilot districts. This is primarily because of an enthusiastic DFOF who

pushed the CoF agenda (and especially scientific forestry approaches) forward within the DoF to positive effect. Today, CoF continues to possess good momentum despite an array of developmental issues.

In CoFs, communities (both close to and distant from the forests) work in partnership with the government to improve forest management, supply forest products to households, reduce poverty, improve biodiversity, sell timber in the market, and generate government revenue. Today there are 19 CoFs across 11 Terai districts, of which 16 are in 7 of the ERPAA districts (DoF, 2069/70[2012/2013]). CoF covers 3.8 percent of the ERPAA's forests. Although few in number, each CoF ranges between 1,000 and 4,000 ha and covers a large number of VDCs and households (Table 24 and Figure 21).

Given its large size, CoF has a complicated multi-tiered governance system. The Netherlands-funded BISEP-ST provided significant technical assistance to roll-out CoF within the Terai. CoF is the only forest tenure modality on national forestlands that promotes the spirit of the 1990 Constitution as well as the 1999 LSGA, both of which sought decentralization of government and governance. CoFs were able to bring in the local government as a key stakeholder and beneficiary receiving funds that support development activities (Bhatta, Gyawali, Shrestha, & Karna, 2012). Presently 50 percent of the CoF revenue enters the central treasury, and 50 percent goes to the DDC/VDC as well as local users. In addition, close and distant communities are both able to obtain free forest products for household use.

Given the large area and number of VDCs covered, however, the governance structure is unwieldy and distant from the primary forest users with representatives who are not necessarily knowledgeable about the larger forest landscape. CoF involves a bureaucratically managed mode that does not enable significant direct involvement of the majority of its beneficiaries. Despite the existence of only a few CoFs, there is tremendous diversity across them. A 2011 review of the viability of REDD+ in CoF, based on the examination of one CoF in a BISEP-ST area and one outside, concluded that REDD+ could be successfully carried out provided governance was improved (Forestry and Climate Change Cell, 2011). However, partly because of inadequate opportunities to carry out field interviews, there was little explicit discussion of the specific current limitations in CoF governance. It was noted that although there has been improvements in forest condition and cover, serious grazing pressures, encroachment issues (politically motivated ones), and heavy demand for forest products by distant users remained concerns.

As noted earlier, advocates of CoF have been, particularly in its earlier years, in a competitive relationship with CF supporters. Although there is a prevailing perception that the DoF prefers CoF over CF for large, productive forest blocks, there is ongoing debate about the most effective way to ensure success within CoF, as it is a modality still in its early developmental stage.

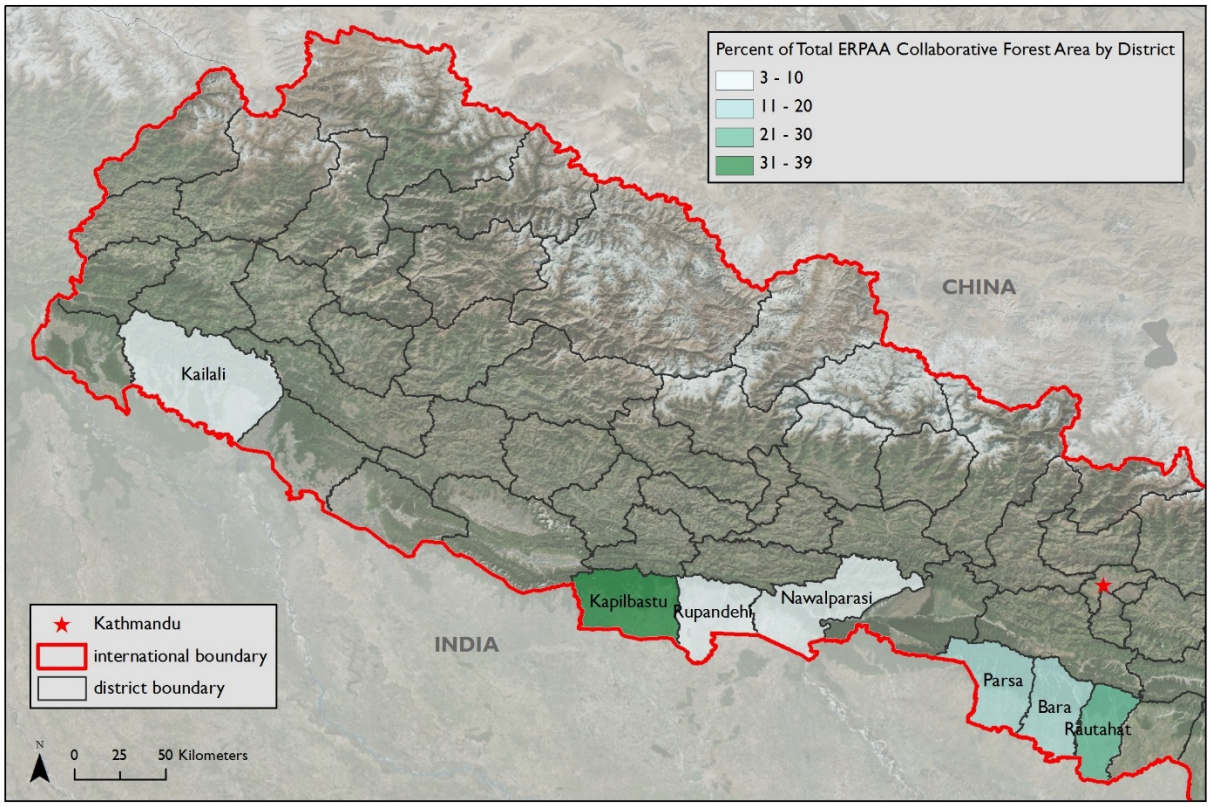
TABLE 24: CURRENT STATUS OF COLLABORATIVE FORESTS WITHIN ERPAA

District	Name of CoF	Area (ha)	District % of Total	Year Started	Households Involved	# of VDCs	# of Municipality
Bara	Sahajnath	2058.00		2004/05	110,300	30	0
	Halkhoria	1138.00		2008/09	178,506	25	1
	Tamagadi	2580.00		2011/12	111,483	23	0
	Sub-total	5776.00	13.24				
Parsa	Sabaiya	3139.00		2009/10	197,011	15	1
	Bindabasini	4289.00		2009/10	140,835	34	0
	Sub-total	7428.00	17.02				
Rautahat	Rangapur	3494.69		2011/12	207,748	24	1
	Jangalsaiya	4049.56		2009/10	224,432	40	0
	Ramlal Brindavan	3853.59		2011/12	154,252		
	Sub-total	11397.84	26.12				
Kapilbastu	Tilaurakot (1)	2722.32		2010/11	148,631	23	1
	Tilaurakot (2)	3890.28		2011/12			
	Gautambuddha	3743.42		2010/11	62,226		

District	Name of CoF	Area (ha)	District % of Total	Year Started	Households Involved	# of VDCs	# of Municipality
	Kapilbastu	5087.43		2011/12	105,365		
	Mayadevi	1740.12		2013/14	103,547		
	Sub-total	17183.57	39.38				
Rupandehi	Lumbini	1118.34	2.56	2010/11	171,205	16	0
Nawalparasi	Buddhasanti	1778.16	4.07	2010/11	60,578	9	1
Kailali	Badi Sajedari Ban	1407.00	3.22	2011/12	65,004		
TOTAL	**16**	**43,638.91**	**100**				

Source: DoF, 2069/70 (2012/13).

FIGURE 21: MAP OF PERCENTAGE OF TOTAL COLLABORATIVE FOREST AREA COVERED WITHIN EACH DISTRICT OF ERPAA



CoF was launched having identified potential CoF sites in 14 districts (Bampton, Ebregt, & Banjade, 2007). Of these, District Forest Plans were prepared for six districts (initially developed by the LFP) that determined which areas were suitable for CF and CoF. These were never endorsed because of a conflict-ridden political environment that prevented the election of DDCs that could ratify them. In the end, CoF was piloted with donor-support (SNV) in three Terai districts (Bara, Parsa, and Rautahat). After an initial uphill struggle, they eventually surmounted their challenges and began to operate. Conflict further intensified because some CoFs were being developed in areas where "potential CFUGs" had already been in operation. Even when the MoFSC revoked the CoF Management Guidelines in June 2006, after FECOFUN advocacy, and agreed to hand over existing CoFs to "model community forests," this was soon overturned after pressure from Terai Members of Parliament and CoF groups. By early 2006, a CoF task force was appointed to resolve fundamental issues.

The CoF governance process in each pilot was quickly put together through handpicked representatives from all areas, but there were some bottlenecks since local governments had been dissolved in 2002. Only the Parsa project started operations by 2007; Rautahat was blocked by armed conflict, and Bara was caught in internal conflict. Together with these pilots, other independently developed CoFs emerged, such as Halkhoria in Bara and Banke Marha in Mahottari. As they gradually started to operate, CoFs expanded westward, first to Rupandehi and Kapilbastu, and later in Kailali. Where the CoF forests were significantly degraded (e.g., in Rautahat's Rangapur) active work by close users resulted in development of a forest management plan; establishment of separate grazing areas on the fringe; engagement in active afforestation; and reduction in illegal timber smuggling, firewood collection, and encroachment (Poudel, 2007).

The CoF governance system has a three-tier structure:

1. CoF Management Group, the main decision-making body that includes key rights holders (close users living less than five km from the forest, and distant users) and stakeholders that include unanimously elected ward-level representatives from near and far communities as well as VDC, DDC, and DFO representatives (including socially marginalized peoples such as one woman and one dalit);
2. CoF Committee that ensures that the Management Group's plans are implemented; and
3. CoF Implementation Unit that runs day-to-day activity and reports to the committee.

Sal logs harvested in Tilaurakot Collaborative Forest in Kapilbastu District

While the overall CoF idea has potential, it is recognized that there is a need to improve certain technical and governance dimensions. On the one hand, the 2000 National Forest Policy and CoF Management Guidelines are unclear about the forest type and size on which CoFs should be established (it is informally understood that the lower limit would be an area greater than 50 ha). On the other hand, the management guidelines extensively detail how the governance system should be set up instead of simply identifying guiding principles, including for the procedural elements of establishing governance arrangements. A workable governance structure has been difficult to develop, and it has been hard to identify appropriate community representatives that can contribute to an integrated and coordinated forest management approach. Many VDC residents are unaware of the existence of CoF, let alone its tiered governance structure. The present representation of women, *dalits*, and marginalized *janajatis* is very limited and needs considerable improvement in order to address gender and social inclusion concerns. Given its large geographical scope, managing the multiple divergent interests operating within CoF is a complex task leading to weak downward accountability. All in all, it is unclear if a 50/50 partnership exists in practice between communities and the government. The DFO has become the unit in de facto control of implementation, with forest rangers making most day-to-day technical decisions. At times, the CoF Implementation Unit does not report solely to the CoF Management Group but also to the DFO.

In terms of meeting forest product supply objectives, there also may be realistic limitations. In Rautahat's Rangapur CoF, 70 percent timber and 90 percent fuelwood deficits were estimated given the large number of households needing supplies (Poudel, 2007). For residents who seek to obtain fuelwood and timber (be they nearby or distant users), the permitting process is time-consuming and cumbersome. As to conflict between local and distant users, some say it has enabled both sides to find ways to work together while others indicate that it has only exacerbated the conflict. The lack of guidelines on how specifically CoF will benefit

the local and distant users is a distinct disincentive to a well-functioning governance regime. While it is true that CoF has helped to increase employment (particularly for women for clearing undergrowth, planting seedlings, etc.), there is as yet no clarity on its approach to poverty alleviation. Certainly, there is interest among women because they are pushing for a greater number of seats on CoF Committees, and some want to allocate fringe areas for NTFP cultivation (Bampton, Ebregt, & Banjade, 2007).

In terms of silvicultural management, there is a recognized need to review the current approaches. The division of forests into small coupes within a 70- or 75-year cycle considered appropriate for *sal* is not deemed practical according to some foresters. Ongoing trials include a scientific forestry pilot in Kapilbastu that aims to demonstrate that timber supply can be substantially increased without compromising the regeneration capacity of the forest. A 2014 workshop on scientific forestry held by the HBP in Butwal promises to bring new silvicultural insights for the different ecologies of the Terai landscape. A review of alternative options can also include the need to promote participatory silvicultural approaches.

At a macro-scale, there is a mismatch between the long rotation cycles operating within CoF operations and the short attention span of political parties engaged in the decentralization of governance. Political instability and regular shifts in MoFSC and DFO personnel provide a difficult institutional terrain within which to carry out long-term planning. This was seen in December 2014 when, after a visit by the Parliamentary Environmental Committee to a forested area in Kailali, a ban was placed on the use of scientific forestry citing that it was promoting illegal forest use. This was soon lifted after considerable advocacy, but the case illustrates how constant twists and turns in policy and regulations can create instability in CoF operation. If the fundamentals of CoF can be improved, then the case to include CoF within the 1993 Forest Act will become clearer and establish a secure foundation for its growth.

Today, CoF is no longer in outright competition with CF. There has been a modest recognition of their relative roles within the Terai forest sector. The Association of Collaborative Forestry Users, Nepal (ACOFUN), a new network devoted to CoF formed in 2007, aims to advocate for the rights of distant and excluded forest users within block forest management. Although smaller, it engages in active dialogue with FECOFUN. The entry of CoF into the mainstream of forestry management is reflected in the fact that there has been stronger donor support such as in the MSFP in the 2010s.

2.8.4 Protected Areas and Buffer Zone Community Forests

There is a significant level of contestation between biodiversity conservation goals and livelihood objectives in the Terai Arc Landscape. While the PA system in the Terai has improved conservation of wildlife and forested ecosystems, it has also reduced access to forested areas for local communities to meet their daily needs. Therefore, numerous innovations have been developed within PAs to mediate between these two needs, particularly drawing on participatory approaches. While still in their early stages, the ER Program design can draw on the lessons from this experience in both informing its strategic orientation to sustainable forest management as well as furthering community-based conservation to increase ER while supporting co-benefits.

Although the ER-PIN indicates that there will be support for conservation work in the PAs, it will only be for avoided deforestation and forest degradation. Since there is no specific mention in the ER-PIN of BZCFs in PA accounting protocols, this issue needs to be clarified. Given that BZCFs carry out forest regeneration activities, their contribution to carbon sequestration should result in parallel or equivalent benefit-sharing arrangements to regular CFUGs even though they fall under a different department's jurisdiction, the DNPWC. As the recent FRA findings indicate, forest condition within the core of PAs is relatively undisturbed and BZCFs are undergoing significant improvement in their forest cover. This section sets out the current status of PAs as well as BZCF tenure types, examining the likely impact of the proposed ER Program on their function.

Nepal has established a series of PAs that include national parks (NPs), wildlife reserves (WRs), conservation areas, hunting reserves, and BZs. There is also a proposal to establish community-based conservation areas.

In total, PAs cover 23.23 percent of Nepal's area. Nepal has ten NPs, three WRs, six conservation areas, one hunting reserve, and eight BZs. In the ERPAA, there are three NPs, two WRs, and five BZs, covering about 15 percent of the national PA system (Table 25). Together they cover an area almost double that of CFs. The main legislation governing PAs is the 1973 NPWC Act that has gone through four amendments, reflecting the changing and adaptive process that wildlife conservation has undergone in Nepal. Support for the government's work in the PAs is provided by the National Trust for Nature Conservation, WWF, and HBP through the TAL Program.

TABLE 25: PROTECTED AREAS IN THE ERPAA

Protected Area	Gazetted Year	Districts	Area (km^2)
National Park			
Chitwan National Park	1973	Chitwan, Nawalparasi, Parsa	932
Bardiya National Park	1988	Bardiya	968
Banke National Park	2010	Banke	550
Suklaphanta Wildlife Reserve	1976	Kanchanpur	205
Parsa Wildlife Reserve	1984	Parsa	499
Buffer Zone (Areas)			
Chitwan National Park	1996	Chitwan, Nawalparasi, Parsa	750
Bardiya National Park	1996	Bardiya	327
Banke National Park	2010	Banke	344
Suklaphanta Wildlife Reserve	2004	Kanchanpur	244
Parsa Wildlife Reserve	2005	Parsa	298
	TOTAL		**5,117**

Source: Department of National Parks and Wildlife Conservation, n.d.

In the early 1970s, wildlife conservation management followed a more centralized approach, with government agencies working closely with conservation scientists and international conservation organizations, such as the WWF and UN agencies. Over time, partially as a result of growing people-wildlife conflict and partially due to the rise of the democracy movement, more collaborative approaches between the park management and communities were developed. Even so, much of the effort in PAs is directed at wildlife management and, therefore, resources are mostly used for wildlife monitoring and biodiversity studies. The social dimensions of natural resources management, although considerably improved (particularly through TAL programs), remain in need of detailed assessment as well as further capacity building and technical support.

In 1993, the NWPC Act was amended for the fourth time to introduce the idea of BZs. In the NPWC Act, "buffer zone" means a peripheral area of a national park or reserve prescribed under Section 3a in order to provide facilities to use forest resources on a regular and beneficial basis for the local people. According to this law, BZs are those areas surrounding the park that are co-managed by the PA authorities and the local communities. The BZ approach aims to enable the nearby communities to develop livelihood improvement projects that meet resident needs while reducing pressures on the core park or reserve area. The amended legislation introduced a three-tiered institutional framework for BZs (Table 26). The key notable development was the revenue-sharing stipulation that required the park to share between 30 and 50 percent of its revenue with BZ communities. This is to be utilized for compensation in the event of damage to land or life by wildlife, flood or landslides; as well as livelihood improvement activities. The subsequent 1996 BZ management rules, and 1998 BZ guidelines have provided more detailed stipulations on governance and management. Establishment of BZCFs (as well as BZ religious forests, and BZ private forests) was allowed for in the 1996 BZ management regulations and 1998 BZ management guidelines, but the rules on committee formation, governance, or use of resources are very limited. There are also very few gender requirements in BZ user group governance and management. Although BZ management has moved towards a co-management approach, the overall management structure remains significantly top-down, largely in the hands of the PA warden.

TABLE 26: MANAGEMENT SYSTEM FOR BUFFER ZONES

Management Institution	Governance	Rights and Responsibilities
Buffer Zone Management Council	Highest-level management institution in which there is representation by all user committee chairpersons as well as PA warden (as secretary).	Total PA income (from tourism, forest products, etc.) is shared 30–50% with user committee. BZ natural resource management (NRM) and livelihoods improvement work is coordinated by this council.
User Committee	Operates at village-level and includes UG chairpersons and secretaries; 5-year team.	Management of fallen trees, dry wood, firewood, and grass in a BP, reserve, conservation area, or BZ. Conservation and NRM activities per approval by Buffer Zone Management Council. Preparation of plans for conservation and community livelihoods promotion for approval by user groups. Support for creation of sub-committees or UGs, including those of BZCFs.
User Group	Local level, with representation from participating households; prepares work plans.	Participation in NRM and conservation work based on prevailing property rights on access, use, and management.

While PA core areas, with the support of the Nepal Army, is reasonably effective in protecting forest areas, the ability of BZs to capably manage and benefit from their forests varies considerably across the landscape. Capacity within BZ management is largely dependent on the overall income of the PA. Outside of Chitwan, income is generally low. Furthermore, the law and regulations governing BZ governance and management are very limited, providing only skeletal guidance on operational and social inclusion dimensions. The PA warden has strong control over not only PA but also BZ management, including BZCFs. For the ER Program, therefore, the regulatory structure needs strengthening, additional methods for building capacity among BZCFs need to be identified (especially for low park revenue areas), and considerable improvements in access to benefits and benefit-sharing mechanisms need to be developed. In the absence of such amendments, BZCFs, while able to improve their forests, have very limited capacity to better manage forests and deliver co-benefits.

The experience of Chitwan National Park, set up in 1973, exemplifies the best of core area and BZ management because it has the largest revenue base with which to engage in effective programming. Chitwan's proximity to Kathmandu makes it an attractive tourist destination. Originally a royal hunting reserve, it spreads over three districts in the ERPAA (Chitwan, Nawalparasi, and Parsa) and one outside the ERPAA (Makwanpur). The NP's BZ provides considerable opportunities for tourism business with many employed in park-related activities, and its BZCFs generate high levels of income.

The history of Chitwan National Park's establishment still plays a considerable role in the park-people conflict today. Tharu settlements (that form 25% of Chitwan District's population) were forcibly relocated from the area when the park was created (to the present-day Padampur VDC), with later relocations to the northern side of the park. In 1975, the Royal Nepal Army was mobilized to help with these evictions (involving violence) and to guard the park. The Padampur settlement, being located close to the park, experiences high levels of human-wildlife conflict. There remains consistent low-level conflict between parks and people stemming from the erosion of customary rights and ever-increasing human-animal conflict as wildlife numbers increase. Despite the reliance on the army for core area patrolling and enforcement, there is considerable illegal entry into Chitwan's core zone as well as other parks for fuelwood, fodder, and wild fruits.

As a result of intense park-people conflict over access to resources in its early years, the approach to conservation was changed. Eventually, BZs were established and controls over resource access were relaxed,

especially for customary *janajati* users. Fishing was banned initially within Chitwan's rivers and later in the mid-1980s, ferrying people across the river was also banned. The landless communities lost access to basic food resources, resulting in serious nutritional issues, and seizure of their fishing equipment and stocks. Intense conflict beginning in 1983 led to fundamental changes in the PAs management approach. Before these changes occurred, however, three other wildlife reserves and national parks had already been established. In all of these areas, high numbers of people live close to the parks and reserves. Nearly all the parks, but especially the more remote ones, underwent considerable difficulties during the Maoist conflict years as PA personnel were killed and resources exploited. These parks are still recovering from the damage inflicted.

BZ management has certainly produced some gains for the local community as well as for wildlife conservation in the core zone. BZCFs provides a tenure institutional platform that enables formal access to local forests. Even so, significant obstacles include top-down management control where the PA warden retains strong authority, and lack of substantive benefits to the marginalized communities within the BZ who often bear the greatest brunt of conservation regulations (Paudel, Budhathoki, & Sharma, 2007). Elite control of the councils and committees in BZ management is commonplace. Therefore, although a significant percent of the park revenue goes toward BZ management, the lack of specific regulatory stipulations on fund use means that much of this distribution has a discretionary character.

Most BZs have now established BZCFs. There is tremendous variability in the activities, capabilities, and goals of BZCF user groups trying to manage their forests with limited resources and autonomy. There are wealthy BZCFs found in Chitwan, and very poor ones in the BZs of Far-Western Terai. The BZCF arrangement offers the user committee an opportunity to establish a CF with the approval of the PA authority. These BZCFs are typically established through a tri-partite agreement between the BZCF, user committee, and PA authority. Despite a stated interest in building the livelihoods of BZ residents in the early days, research shows that over 73 percent of BZ funds went to physical infrastructure with only 3.3 percent going to skill development and income-generation activities (Paudel, Budhathoki, & Sharma, 2007). BZCFs do not have a clear duration of tenure; they operate under the warden's oversight. A work plan that maintains the community's rights to use the forests must be approved by the warden. The BZ user committee determines which areas will be utilized, how management will take place, levels of harvesting, benefit distribution, and incentives for afforestation. The forest products collected may be sold within the village or to neighboring villages but not outside the BZ area. This significantly differentiates them from CFUGs. The income enters into the BZCF pool, but often there is no clarity on fund use. Over time, forest cover has improved in extent and condition, and harvesting levels of forest products has also increased.

Chitwan, the PA with the greatest income, has the most interesting set of interventions designed for BZ management, particularly BZCFs. The Barandabhar corridor forest (which links with the nearby Parsa WR and the Valmiki Tiger Reserve in India) also has numerous BZCFs. In 2013, 50% of Chitwan's total income of NRs 467 million (US$4.67 million), went to the BZ council (Dhakal, 2014). Communities in BZs have access to the driftwood brought down by floods, which has reduced pressure on existing forest resources. These groups have also been given rights to occasionally collect thatch grass from within the core zone. BZCF groups have valuably contributed to biodiversity conservation even as they meet their household and livelihood needs. As tourism revenue is highly lucrative in Chitwan, elite members of BZCFs have developed eco-tourism activities. However, this has been resisted by the indigenous and poorer members of the communities who give primacy to accessing forests for their daily subsistence needs. BZCFs have had to address conflicts between customary use and conservation rights by adjusting management practices. In 2000, for example, some fisherfolk (although not the Majhi or Musahar *janajatis*) were allowed limited fishing rights despite an initial ban.

The issue of marginalized and landless *janajati* access to basic food and household needs is an ongoing one in all parks (Budhathoki, 2012; Jana, 2014). Local activist organizations have emerged such as the *Majhi Musahar Bote Kalyan Sewa Samiti* in 1993, formed in Nawalparasi, to advocate for customary fisherfolk rights. The *Protected Area People's Rights Federation* and the *Community Development Organization* have both built the still limited networking strength of BZCFs. These CSOs have promoted grassroots activism and advocacy in support of a socially equitable BZ management policy. This has resulted in PA authorities giving greater

attention to local people's needs. In addition, FECOFUN has been supportive of BZCF rights. Together, these organizations can facilitate the interests of the poor and indigenous communities within BZCFs both in terms of elite control and PA management authority (Jana, 2007 and 2009).

Numerous wetlands within Chitwan's BZCFs contribute substantially to biodiversity and meet livelihood needs. A 2008 study by Forest Action, an advocacy-oriented research NGO in Kathmandu, indicated that species abundance and diversity had increased, as had environmental service provisioning once local communities became involved in active wetlands management (Jana, 2009). In terms of forest cover, control over local grazing resulted in the growth of *khair* (*Acacia catechu*) trees; fruit trees had also been planted. In Dibyapuri BZCF (north of East-West Highway in the Western part of Chitwan), there are numerous wetlands (such as Gainda Tal [lake], Devi Tal, and Sanischar Tal) covering about eight ha along the Narayani River. This is an area with a range of *janajati* landless communities, including Bote-Majhi, Musahar, Tharus, and marginalized Hindu caste groups such as *dalits*. Besides the customary fishing practices of indigenous communities, biodiversity threats include agricultural encroachment, intermittent flooding of the nearby Baula River, alien plant invasions, and damaging fishing practices by non-indigenous communities. Initially, the area was open once a year for fishing, and harvesting wild vegetables (especially by poor households) was permitted nine months of the year. Even so, when Bote women persistently complained that they had had long-standing all-year fishing and vegetable harvesting rights, these rules on fishing were lifted for everyone.

Office of the Tikauli Buffer Zone Community Forest User Group in Chitwan National Park

In Mrigakunja BZCF (that includes a 12-ha Tikauli lake), a conflict between eco-tourism interests and *janajati* livelihood interests was resolved by allocating a specific wetland area to the Chepang members (poorer *janajati* group) so they could independently manage it. *Gholes* (seasonal water-logged areas in marginalized lowlands) are used by Chepangs for natural productivity carp polycultural production. The women in the area have also initiated a goat raising and exchange scheme that holds promise. The main lake, with the support of HBP, was gradually improved through removal of alien plants and reduction of siltation. This has permitted not only improved habitat for major migratory birds and mugger crocodile, it has also become a waterhole for major mammals, including endangered species such as tigers, rhinoceros, and elephants. At the same time, the BZCF has been planning to develop eco-tourism activities in the form of lake trips and home stays. In many areas, invasion by weeds (as *Mikania micrantha* or *ban mara*) has called for innovative approaches such as conversion to organic manure. The development of such initiatives requires resources that only Chitwan's revenue base can support.

An example of a financially successful BZCF is Bagmara (covering 215 ha in Bacchauli VDC) with about a thousand households (half the population is Tharus). The BZCF is governed by a council of 45 members from different geographical forest zones. There is an executive council of 13 members (of which four are women). Its primary income is from tourism, which generates about 7 million NRs that is then funneled back into biodiversity conservation, forest management, community welfare (road and school construction, improved

cooking stoves, bio-gas, renovation of cultural site), and poverty alleviation (e.g., construction of a pond for poor Musahar communities).

So far, organizations such as the National Trust for Nature Conservation (NTNC) have been focused on biodiversity monitoring and, as such, there is little research on the effectiveness of BZCF management systems. Research by Forest Action and CDO indicates that BZCF user groups and community forests have not benefitted the poor and marginalized (*janajatis*, *dalits*, poor, and women) because they are poorly represented within the governance institutions (Paudel, Budhathoki, & Sharma, 2007). There are provisions that at least three women sit on the user committees, but women are rarely elected to the apex body, the Buffer Zone Council, that determines the overall policy orientation for management.

Lake in Tikauli Buffer Zone Community Forest of Chitwan National Park

Case study evidence indicates that BZCFs are able to improve forests. Recent research in Bardiya National Park on forest degradation in the BZs indicated that where there were no BZCFs, degradation was worse (Thapa & Goodman, 2010). Bardiya National Park was originally the private property of the Rana rulers but, through a series of interim steps, it became a national park in 1988. Today, its BZ, formed in 1997, has a population of about 100,000 people. In Shivapur VDC, seven of the nine wards had no BZCFs and as such, forest condition was in a more degraded state than in Thakurdwara where all wards in the VDC has BZCFs. Here, the level of forest disturbance was 34 percent compared with Shivapur's at 66 percent.

One of the main challenges ahead is the recent increase in populations of tiger, rhinoceros, and elephants in many parks. Indeed, 2014 was celebrated as a year of zero poaching. While an indicator of success, this is now leading to greater human-wildlife conflict among BZ villages. It is clear that even though many villagers are in support of wildlife protection and endangered species, there is an urgent need to provide electrical fencing and other forms of protection, as well as better compensation rules in the BZ guidelines for the families of those who have died or been injured. Finally, one of the drawbacks for BZ management is that there is no formally prescribed role for the local DDC/VDC. Where user groups and committees have sizable incomes, this will likely create tension with the local government who have no control over these activities within their jurisdictions.

All in all, garnering lessons from the innovative experiences in BZCFs across the range of PAs in the ERPAA can offer insights into the design of new interventions to improve forest condition and co-benefits for achieving ER goals. There remains considerable scope for ER in BZCFs if provided with additional support for forest management.

2.8.5 Protected Forests

PFs are those national forestlands that the government has declared protected for environmental, scientific, or cultural reasons through the 1993 Forest Act. Except for a requirement that the DFO establish a work plan to be approved by the DoF, the law provides no additional guidance on how PFs are to be managed although a guideline has been developed to support their formation and management. In light of this, the forests remain under the discretionary control of the DFOs.

The total area of PFs in the ERPAA has expanded in recent years. In the Terai, these have been largely established within wildlife corridors to support the PA system by enabling better mobility of wildlife through the conservation landscape (Shrestha et al., 2014). PFs are managed on a five-year or annual scheme through a zone-based management plan. PF management is therefore intertwined with the TAL Program and WWF, both key actors in management of wildlife corridors. There are currently six PFs in the ERPAA covering 188,613 ha (see Table 27) with the bulk of these in the Western to Far-Western Terai regions overlapping with the Churia range. In establishing these PFs, it was recognized that existing CFs would have to be compensated for the curtailment of their forest use rights. This has been done through support for income-generation activities as well as plans to boost ecotourism. As a result of TAL and WWF support, these CFs have been effective in improving conservation. Community forest coordination committees (CFCCs) have been established in various corridors. Through these committees, CFUGs can collectively establish their own NGOs, through TAL support, to facilitate biodiversity-oriented CFs (not unlike BZCFs). A comparative study across regular CFUGs, BZCFs, and CFs in PFs in a contiguous area would be permit an assessment of how particular interventions produce specific ER and co-benefit outcomes. In what way is the additional donor support being used by these CFUGs to achieve forest protection? There are broader lessons to be gained from the TAL Program experience for effectively achieving ER across the ERPAA landscape.

TABLE 27: PROTECTED FORESTS WITHIN ERPAA

District	Area (ha)
Chitwan	10,466
Bardiya	4,504
Kailali	69,001
Kanchanpur	29,642
To be added in 2014 (2070–71 BS)	
Kapilbastu	40,000
Dang	35,000
TOTAL	188,613

Source: DoF, 2069/70 (2012/13).

2.8.6 Pro-Poor Leasehold Forests

Within national forestlands, pro-poor LHFs are community-based tenure systems that are significantly different in their design and operation from CFs. LHFs are those areas of national forests that have been leased (according to clause 32 of the 1993 Forest Act) for specified purpose(s) to a legally defined institution, forest-based industry, or community. A review is provided to help understand the relative status of LHF within the landscape by setting out its emergence, objectives, governance system, key agents of change, and achievements. The discussion here focuses on pro-poor LHF since the industry-based forestry is extremely limited in scope.[18]

The overall approach to reducing poverty has been to allocate LHF plots (on national forests with less than 20% crown cover) to small groups. LHF user groups (LFUGs), typically made up of about five to ten members of similar background, are provided with support so they can increase production of forest products and raise livestock. The groups are provided with a 40-year renewable lease term, support for creating a constitution and operational plan, as well as seedlings and other start-up resources. Group promoters work as mobilizers to ensure that the fundamental aspects of setup and implementation are facilitated.

The average LHF area per household is about 0.5 ha. Secure boundary formation and lease terms have not presented any significant concerns. Details of how the LFUGs are formed, plan their work, and address conflicts have been gradually improving through innovative developments and streamlining for efficiency. That said, there has been a tendency in some areas to divide the group's LHF land into individual plots allocated to households in order to further improve efficiency of returns.

Although LHF operates across 22 districts, LHFs only exist within the ERPAA in small areas in Chitwan and Nawalparasi (Table 28). At the 2014 National Workshop on LHFs and Livelihoods, there was a general consensus that the amount of carbon sequestered within individual LHF groups would be very small; if pooled

[18] Although it is possible to create industrial leasehold forestry groups, these cover a very small area in the ERPAA, occupying some 193.4 ha within Bara, Dang, and Kailali.

together, there could be a possibility that the country's LHFs would be eligible for ER credits (Baral & Kafley, 2014). Even then, the issue of measurement and verification would become a potential obstacle since these sites would be small, diverse and dispersed. Since the total LHF area occupies a small area, it is not advisable to include them within the ER Program as a direct beneficiary. However, given they are part of the ERPAA landscape, and because they support pro-poor goals, it may be valuable to include LHFs within the ER Program design to provide supportive capacity-building for technical and governance improvements.

Despite some policy-level and implementation challenges, in general there has been a positive outcome for LHF groups in Nepal (Bhattarai, Dhungana, & Kafley, 2007). Therefore, it is not uncommon for many CFs to support nearby LHFs in order to prevent leakage across tenure types at the local level. Money may be donated for a range of activities such as forest planning or construction of livestock feeding stalls. Additionally, many CFUGs have also informally utilized the LHF approach within their own tenure institution to support poorer members. CFUGs see this as a viable way of addressing the pro-poor interventions needed according to the 2009 CF Guidelines.

Although regulations for LHF were created in 1978, it was not rolled out until 1992 when financial support from IFAD was made available. Therefore, unlike CF, LHF has largely been a donor-supported program. The IFAD-supported program ran continuously until 2014 when it became an independent project of the GoN. The first phase of IFAD support was called the Hills Leasehold Forestry and Forage Development Program (1992–2002). This was followed by the Leasehold Forestry and Livestock Program (2005–2014), which has been jointly implemented by the Ministry of Agriculture and Cooperatives and the MoFSC in 22 districts (LFLP, 2011/12). Other donors are also supporting LHF groups such as BISEP-ST, LFP, and Western Upland Poverty Alleviation Program.

By 2014, 7,230 groups had been formed covering 72,825 household beneficiaries. The LHF social constitution is distinctly different from the CF. In general, women take up about 36 percent membership of LHF groups, and the poor about 52 percent. In terms of decision-making positions, 42 percent are poor, 32 percent women, and 6 percent *dalits*. However, targets have not been fully met; only 62 percent of the target level for women has been achieved so far (Puletti, 2008).

TABLE 28: STATUS AND COVERAGE OF PRO-POOR LEASEHOLD FORESTS IN THE ERPAA

District	# of Leasehold Groups (Total HLFFDP/LFLP)	Area Covered (ha)	# of Households	# of Leasehold Groups (BISEP-ST/LFP)	Area Covered (ha)	# of Households
Chitwan	359	1517.57	2311	4	6.50	21
Nawalparasi	31	434	347	69	598.79	776

Source: DoF 2069/70 (2012/2013).

In the LHF process, program evaluations indicate that forests have been modestly improved and household subsistence and income needs have been reasonably met (Baral & Kafley, 2014). The animal husbandry and livestock development part of the LHF program has been particularly effective at improving income and household food security. The development of sustainable financial institutions has been promoted (although support for this from credit institutions has been limited so far). Gender dimensions have been central to programming and have produced positive changes in women's empowerment. Sustained support given in the form of social mobilizers has enabled LFUGs to support social transformation, particularly for gender equity. Often the land initially provided was degraded (some 69% had no trees, grass, or other species), but with good technical and material support, forest area as well as composition (density, quality, type, and species diversity) has improved. Thirty-eight percent of LFUGs have reported forest cover increases, some as much as 25 percent. Natural regeneration through improved management has been the primary reason for the development of multi-layered forests with good ground cover and improved biodiversity. In general, fuelwood and fodder supplies have increased significantly, and women spend roughly 2.5 fewer hours per day

in search of these products (although livestock increases have added to women's workload). However, only about 25 percent of annual fuelwood demand is met by LHFs; the remainder has to be fulfilled through access to private forests (which is difficult for these poorer communities), national forests, or purchase in market (which is not affordable).

While the overall intention is to support poorer members of communities, those in a higher wealth ranking also can access LHF initiatives (Thoms, Karna, & Karmacharya, 2006). There has been conflict, particularly during earlier parts of the program, between users and non-users, but creative conflict resolution approaches helped to diffuse this (Nagendra, Karna, & Karmacharya, 2005). While the targeted number of LHG groups are usually achieved, the key difficulties lie in their capacity, quality, and sustainability. There is a need to identify more mobilizer staff, take steps to ensure their retention, and build better group dynamics in the long-term. The identification of a local resource professional would also help groups navigate larger policy and planning hurdles (KC, Baral, & Kafley, 2014). Given that the income of all households in the group do not rise in parallel, this can pose difficulties for group-level governance and performance (Thoms, Karna, & Karmacharya, 2006). Related to this is a problem wherein some groups choose to individualize their lands (seen among Terai LFUGs) so that they can have fuller control over productive and extractive activities. This has been identified as a key weakness in LHF that needs consideration in order to improve efficiency and welfare. Improving specific dimensions such as reducing distance to homestead and providing supportive inputs for those with poorer land quality will enhance the overall delivery of goals (Sharma, 2011).

The experiences in Palpa (Jhirubas) and Nawalparasi (Hupsekot) indicate that a landscape-level approach can be very effective, with well-organized groups being lifted out of poverty in three years (Nagendra et al., 2005). In scaling up LHF, the private sector could also play a key enabling role in terms of NTFP cultivation, processing, and marketing and enabling an economy of scale to be set into motion (KC et al., 2014).

Women carrying fodder loads to support livestock production

In some cases, such as in Shaktikhor VDC Ward Number 8 of Chitwan (in inner Terai), a range of LFUGs joined together to form a Devitar cluster (a second tier organizational network) that then formed a savings and credit co-operative in 2010 and a women's group (*Milli Julli Chulli*) (LFLP, 2012). This is an area with *dalits* (specifically *kami* and *damai*), Magar, Gurung, Newars, Chepangs, and Chhetri (Hindu group). The LFUGs were started in 2005 after a long period of CF formation in the area. The *Shree Laganshil Women's Social Enterprise Co-operative* has 3,373 members from 11 LFUG groups and non-groups, with women, *dalits*, and *janajatis* rotating leadership. This is an area with *sal* (*Shorea robusta*), *saj* (*Terminalia tomentosa*), *harro* (*Terminalia chebula*), and *burro* (*Terminalia belerica*) trees possessing both economic and medicinal value. Through the development of forest products (the re-growth of *sal* has been impressive) and a move to stall feeding of livestock, the group has pursued public-private partnerships in order to build linkages to markets. Some households now own more than 25 goats and have an annual income between US$1000-1500. In addition, nearby CF groups have supported them by providing *sal* timber for community hall construction, and funds to promote the women's group. The lessons from CF governance have also been used to build LFUG capabilities.

A closer look at Nawalparasi's LHFs offers additional insights into LHF's niche role. Even though Nawalparasi has 48.54 percent forest cover, 21 out of 34 VDCs have no national forests. (Paudyal, 2014). Out of the community-based forest tenure types in the district, LHF covers the smallest area (1,212 ha) involving 13 VDCs largely in the Middle Hills part of the district (Table 29). Shifting cultivation practices (*khoria fadani*) (particularly among Magar ethnic communities), a major sources of forest encroachment into national forestlands, was halted by initiating LHF groups. Besides carrying out forest management (such as fire control), the groups have achieved rapid growth of broomgrass, *shatavari* (Ayurvedic herb), and cinnamon, that together with livestock, have produced substantive income benefits. Infrastructure for villages, including a broom collection center, drinking water, micro-hydro, and alternative energy installations (like solar and bio-gas) serve the additional purpose of building interest in LHF success.

Despite its small size, the LHF tenure type has achieved considerable success in a short space of time and therefore deserved awards. It has therefore been recommended that LHF should be pursued on public or private forests within the southern forest belt. Additionally, the limits to LHF expansion can be addressed by increasing the limit of 20 percent forest crown cover to 30 percent for handover of national forestlands.

TABLE 29: RELATIVE STATUS OF DIFFERENT FOREST TENURE TYPES IN NAWALPARASI IN 2014

Forest Tenure Type	# of Groups	Forest Area (ha)	Households	Population	Remarks
Community Forests	167	21,907	58,351	347,459	About 52% population of the district
Collaborative Forests	2	2,451	13,104	81,578	
Pro-poor Leasehold Forests	121	1,212	1,328	10,509	
Sub-Total	**290**	**25,570**	**72,873**	**439,546**	
Forest Management on Public Lands	194	567	10,813	64,878	
Total	**484**	**26,137**	**83,626**	**504,424**	78.4% population of the district

Source: Paudyal, 2014.

Despite their small scale, there is tremendous vitality among LHFs, with considerable possibilities for expansion within a landscape-based approach. The key issue is availability of forestland for allocation to LHFs. Since CF groups have already received most of the accessible land close to villages, limited land is available for LHF. Moreover, the selection of potential sites has been based on location of degraded forests rather than on poverty-based needs. In terms of legal and policy dimensions, LHF does not hold the same priority as CF within the DoF. Therefore, the necessary changes for scaling up LHF have not moved forward quickly enough. Although LHF has been set up within the 1993 Forest Act and 1995 Forest Rules, there have been no subsequent amendments in response to the lessons learned. Most importantly, the central provisions of the 2002 LHF policy remains to be incorporated into these laws (KC, Baral, & Kafley, 2014). This will enable the formal decentralization of authority over LHF to the DFO office for streamlining. Once this occurs, clear principles on profit-sharing from timber sales also need to be established in order to provide an additional incentive to protect the forest. Lastly, the declaration of a national park or wildlife reserve BZ in areas with existing LHFs has created new hurdles to be addressed at the legal level. The PAs in Chitwan have made it difficult for LFUGs to use their forests.

2.8.7 Public Lands Forests

The assessment of REDD+ potential in CoFs indicated that the promotion of PLFs and PRFs will help to improve forest cover at an aggregate landscape level (Forests and Climate Change Cell, 2011). PLF is a novel

and very promising area of pro-poor forest management that provides public land to the landless and land poor for a range of community-based forest management systems such as agro-forestry, CF, woodlots and other income-generation activities within the southern settled belt of certain Terai districts. PLF facilitates a solution to the endemic and geographically wide-ranging problem of forest access among the landless within the Terai. In particular, it holds a strong capacity to address REDD+ co-benefits promoting social equity, robust governance, and biodiversity conservation needs. While PLF presently covers a very small area, and therefore will likely not be among the primary beneficiaries of any results-based finance system, the ER Program will benefit from supporting this nascent development because it has the potential to ease pressure on other forests by supplying forest products to the forest-dependent poor and landless. As it stands, PLF addresses a need already identified in the Department of Land Reform guidelines. If scaled up, therefore, it can reduce some fundamental pressures behind deforestation and degradation. Furthermore, it can provide direct benefits to the VDCs and municipalities who are the owners of such forests.

PLFs were piloted in 2002 by both LFP and SNV (through BISEP-ST) in their respective program districts; MSFP has taken up the next phase. Of all the forest tenure types assessed here, PLF faces the most significant set of tenure insecurity issues. Improving tenure security will require a new policy and legal framework to ensure secure investment of time and labor facilitate sustained expansion. Presently, the process of setting up the group, the approval process, and rules on benefit security are unclear.

In Nepal, public lands are those areas that are owned by public institutions such as the local government, schools, and religious bodies. They fall outside the purview of the DoF. This land category: barren unregistered land (*parti ailani*—land that is traditionally used by communities for grazing or is bush scrubs and categorized as no. 8 by the Mapping Maintenance Office), courtyards (*chowk*), local market sites (*haat bazaar*), public ponds, roadsides, canal sides, bunds, riverbank, inns (*pati pauwa*), public entertainment sites (*dabali*), cemeteries, institutional lands, and lands declared public lands by the GoN. They are lands used for public events or gathering places or open grazing, and could include abandoned areas.

The GoN has set out in the *Napi Janch Ain* 2019 BS (Land Measurement Act 1963) that these above categories of land can be public lands. This is not an insignificant land use category: such lands can cover up to 20–23 percent of land suitable for agricultural cultivation (Kunwar, Neil, Paudyal, & Subedi, 2008). One of the key problems is that this land is highly fragmented (from 2–4 katha to 10 bigha).[19] Most of these lands have been under the control of local elite interests. Developing a pro-poor program has been particularly difficult in the Terai because, compared to the Middle Hills, the level of awareness and empowerment among the poor is generally much lower. The power hierarchy is much starker among Terai Madheshi communities; not only is there stronger caste-based discrimination than in the Middle Hills, but women are under a much stricter set of cultural taboo controls and restrictions on mobility (Shrestha, 2012).

In a preliminary look by LFP in three Terai districts with low forest cover (Nawalparasi, Rupandehi, and Kapilbastu), anywhere between 25,000 and 56,000 ha could fall into such a category. The approach taken was similar to that adopted in community forests: a piece of land as well as a group of users were identified in tandem. LFP adopted an inclusive targeting approach to creating public and institutional land management group (PILM) whereby the poor and marginalized members of the group (identified through participatory well-being ranking) were targeted while simultaneously addressing broader community needs (in order to build elite interest). Groups could be labelled either public land management or community forest types (thereby falling into different approval arrangements). Social mobilizers hired and trained by NGOs, and relevant technical support was provided by both the DFO, District Soil Conservation Office, District Livestock Support Office, and the Women's Development Office.

In practice, the process of obtaining an agreement is disorganized: all parties including the land authority institution, the DFO, and at times the mobilizer NGO need to approve the group before work can proceed. Some groups have been found to be registered with the District Agricultural Office, others with the DFO, and some have been established as an NGO with the District Administration Office (Dhungana, Rangan,

[19] These are customary forms of measurement still in predominant use today. A *katha* is 337.57 m^2, and a *bigha* is 6,773 m^2.

Shrestha, & Jha, 2011). Where CF groups are set up, the DFO is also involved in the approval process. Ultimately, though, final permission to establish PILM groups must be obtained from the VDC secretary. The lease terms also vary considerably (from 10 years to more than 40 years); in other cases, approval is pending awaiting legal clearance. These agreements are not strong forms of tenure security; it remains unclear how defensible they are institutionally or legally. The Community Self-Reliance Centre is planning a study of tenure concerns (including legal dimensions) within PLFs.

A range of activities have been carried out in these PILM groups: planting specific tree species for a variety of purposes (such as teak and eucalyptus), income-generation activities (pond management, fishery, NTFPs, fruit and vegetable cultivation under canopy), stabilization of river bank, and removal of encroachers (Dhungana, Rangan, Shrestha, & Jha, 2011). Between 2003 and the end of 2007, as an indication of its overall success, there was a substantial growth in number of PILM groups in the three LFP pilot districts. Over 10,000 households (10,518) formed 160 PILM groups in 44 southern VDCs. Fifty-nine percent were poor, 72 percent were from disadvantaged groups (including 24% *dalits*), and 19% were religious minority members. In total, they manage 487 ha of public lands. Furthermore, a plethora of special interest sub-groups have been formed such as *dalit* groups, women groups, NTFP cultivation groups, fishery groups, vegetable farming groups, and savings and credit groups. The PILM groups can be divided into four main types: forest only, agro-horti-silviculture, silvo-fishery, and silvo-pasture. At times the PILM groups may subcontract out the land to individuals to grow specific trees; the profits are then shared between the group and the VDC (COLARP, 2014). This rapid progress indicates there is considerable interest in building this new platform for livelihoods improvement, even in the absence of tenure security.

In 2007, an Association of Terai Public Land Forest Users Network (APLFUN) was set up to link more than 400 user groups covering six districts. These groups have sought to strengthen gender equity by promoting local female role models and male leaders. In both the local and district-level committees, the network advocated for a minimum of 30 percent women membership. Women-only local groups also have been set up. Support for more than 3,000 women members of APFLUN has led to greater participation in productive activities by women, and women have entered the previously male-dominated activity of selling and marketing the products in the local bazaars. The income from these products goes directly into the hands of the women, improved family welfare by helping to support children's education, household food and health expenses, and group savings and credit activities (Shrestha, 2012). A 2014 study carried out by the Consortium for Land Research and Policy Dialogue in Rupandehi and Nawalparasi examined how partnerships can be enhanced in public lands management (COLARP, 2014).

Women collect *sal* leaves to make *sal* plates for sale in markets

All in all, PILM groups have created improvements in forest cover for supplying fodder and fuelwood needs. This has reduced the use of dungcakes (*guitha*) for fuel. Beyond improving income through the sales of various agro-forestry products, PILM groups have helped to evict encroachers and prevent future settlements. In the context of climate change, PLFs are also helping to improve adaptation to variability in rainfall and temperature over the course of the annual agricultural cycle.

To systematize PLFs, it is necessary to establish a clear legal and policy framework (COLARP, 2014; Kunwar, Neil, Paudyal, & Subedi, 2008). The 1999 LSGA is likely to be the law under which new regulations need to be created; the Forest Act will also need some amendments. So far, there has been a tendency to convert PILM groups into CF ones because the rules on extracting timber are already established for CFUGs. Boundary development has provoked conflicts because there is a lack of public land boundary data leading to

a need to coordinate with the revenue and survey departments (COLARP, 2014). Clearer policy direction will also help to establish the legitimacy of the program thereby stemming the obstacles posed by local elites. In some cases, elites have resented the takeover of these public lands and taken to uprooting seedlings/vegetables/fish set up under new commons (Dhungana, Rangan, Shrestha, & Jha, 2011). In addition, there have been conflicts between the VDC and wards over prime responsibility for these lands. Clarity on responsibility for abating encroachment on public lands is needed. Since VDCs are foregoing income from contractors by handing over public lands to such groups, legal clarity will help provide protections to PILM groups.

2.8.8 Private Forests

PRFs, as officially declared with governments, cover a very small area. Across the ERPAA, about 550 ha are recorded as being under PRFs, with Chitwan holding the highest portion at 26 percent (Table 30). The scale of PRFs is currently too small to be considered among the primary set of beneficiaries from the ER Program, but their contribution to ER can be phased in during later years of the program. The ER Program, as with PLFs, can provide complementary support for the expansion of PRFs. Increasing the area under forests and related timber supply will serve in aggregate to reduce deforestation as well as increase carbon sequestration.

TABLE 30: CURRENT STATUS OF PRIVATE FORESTS ACROSS ERPAA

District	# of Private Forests	Area (ha)	# of Trees
Rautahat	28	18.63	30,107
Bara	43	69.18	76,536
Parsa	23	52.91	132,357
Chitwan	201	142.58	303,510
Nawalparasi	90	40.27	38,454
Rupandehi	59	60.58	39,852
Kapilbastu	21	29.38	88,919
Dang	30	30.86	0
Banke	60	28.34	33,540
Bardiya	30	13.83	17,135
Kailali	43	52.76	31,044
Kanchanpur	11	10.20	13,564
TOTAL	**639**	**549.52**	

Source: Community Forestry Division, DoF, 2012.

The 1993 Forest Act classifies forests in Nepal as either national forests or private forests (the two major tenure categories): "A private forest is a forest which is planted, nurtured, or conserved in any private land owned by an individual pursuant to prevailing laws" (Section 2k). In addition, the 1973 NPWC Act states that any private lands within the BZ will not be affected by conservation mandates (section 3b). The Forest Act affirms that the owner of a PRF may utilize forest products at his/her own will (section 33). At the same time, section 39a indicates that the government may develop rules regarding the security and management of private forests by providing facilities and technical support to the forest owner. PRF owners are able to register their forests with the DFO. Once a PRF certificate is obtained through registration with the DFO (Forest Act section 39 and 1995 Rules), suitable technical assistance can be provided. Despite these varied legal provisions, progress has been extremely slow and the ambitious targets set out in the 1989 MPFS have not been met.

Regardless of their small area, a significant move is underway (in line with addressing timber demand-supply dynamics) to considerably expand PRFs, especially in the Terai where the road infrastructure permits relatively easy commercialization. As indicated in the FSS, it is intended that PRF coverage increase four-fold from the current 54,900 ha, to 200,000 ha by 2025. Furthermore, there is a new government strategy to build the private sector's involvement in the forest sector, in particular to develop economically viable and

socially and environmentally responsible forest-based industries. The MoFSC is preparing policy guidelines to promote private sector investment in forest sector enterprise that will include incentives such as deregulation, tax holidays, and cash grants to mitigate risks. This is part of the shift to a sustainable, green, and inclusive development model. Both the MSFP and USAID-funded HBP have been active in promoting private forests and private sector engagement in forestry (MSFP, 2014).

The obstacles to expansion of PRFs do not lie in the law. While it is possible that the remnant fear from the 1950s when private forests were nationalized is still at work, it is more likely that proximity to Kathmandu markets and existence of transport infrastructure that explains the geography of their expansion. That said, the present data is likely a considerable underestimate, as registration of private forests presents no significant incentives; instead it could be an obstacle to flexible use of private forest lands. Even though PRFs cover a small area, the shortfall in domestic timber supply from insufficient production in GMF and CF has been met from PRFs (and ultimately imports from Malaysia, Myanmar, and elsewhere). There is more timber supplied from PFs than GMFs in the market.

While PRFs will likely expand as a result of market forces, no administrative structure is in place within the DoF or DFOs to support PRFs. Neither of them have dedicated staff for PRFs; presently this forms only a small part of the CF Division's responsibilities. In March 2014, the "First National Workshop on Private Forest Development" was held by the National Forum for Advocacy, Nepal and the Federation of Nepalese Chamber of Commerce and Industry to discuss the obstacles behind limited private forest development (NAFAN, 2014). The primary disincentives to PRFs are the technical and institutional impediments: lack of seedlings (which often have to be obtained from India) and sufficient technical support; excessive bureaucratic hurdles over permission to transport logs (taking almost two months); unnecessary taxes (including Value Added Tax) for selling products in the market; lack of bank loan availability; and no provision for insurance of PRFs. According to a 2011 study of private forests in Rupandehi, PRF owners do not utilize any form of silviculture or management approaches.

There is tremendous potential to expand PRFs particularly to encourage women farmers who could develop systems of multipurpose tree plantations relatively close to home. There is, at present, very little information available on women's role in private forests. Although only 20 percent of women in Nepal have formal ownership rights to land, this is increasing because the government has provided in recent years an exemption of the 20 percent royalty fee when land is transferred and registered in a woman's name. Therefore, there may be considerable scope for promoting women-owned PRFs.

Beyond regulatory frameworks and market signals, the increase in PRFs may also occur as a result of growing absentee landlordism due to continuing out-migration. Many farmers grow bamboo on private lands, but this is not classified as forests despite its economic value. Rather than *sal*, species with a shorter rotation are typically selected for these farms such as teak and eucalyptus.

KEY FINDINGS ON MAIN FOREST TENURE TYPES IN ERPAA

- In Nepal, forested lands fall into two major ownership categories: government or private. Within the national forestlands, numerous tenure types are directly managed by the government and devolved tenure types are managed by communities. Within the ERPAA, the six larger to medium-sized forest tenure types in terms of area include GMF, PF, PA, BZCF, CF, and CoF; the four considerably smaller types are LHF, PLF, PRF, and RF that is almost negligible in terms of forest area). Among these, the devolved forest tenure types have organically emerged in overlapping layers within the landscape starting from CF, LHF, BZCF, CoF, to PLF. Among these, the two forest tenure institutions effectively capable of reducing emissions at scale across the landscape are CF and CoF. This assessment evaluates the relative status and capabilities of each tenure institution in meeting ER goals.

Devolution of Government-Managed Forests

- GMFs largely operate in a de facto open access mode within an institutional vacuum due to lack of sufficient government capacity. They are generally in a much more degraded condition than CFs or

CoFs, depending on their location and proximity to road infrastructure. Terai plains GMFs are more degraded than those in the Churia. Since CFs or CoFs are often not able to fully provision forest products for their households, GMFs are utilized by communities to fulfil the remaining needs. Therefore, they are regularly accessed for forest products and grazing. Sometimes agreements are made with forest staff on harvesting of specific products.

- GMFs are managed primarily for forest conservation and secondarily, commercial extraction. This had led to a passive management approach in which the 4D (dead, dying, decaying, and deformed) trees are harvested by the TCN and sold after priority allocations are completed by the District Forest Supply Committee (50% revenue to DFO and 50% to TCN). No rules govern the timber market within the 1993 Forest Act; as a result, the regulation of the timber market is complex and opaque.
- Recent studies of timber demand-supply dynamics for designing REDD+ programming indicate that CFs and CoFs will be able to provide more wood products and timber for the market than GMFs by 2015.
- The proposed plan in the ER-PIN to devolve all GMFs to CF, CoF, or private plantations (if legal amendments are made to permit the latter) is capable of achieving ER in a short time frame if appropriately designed. Research has demonstrated better carbon sequestration in CFs than in GMFs, and in Terai forests than those in Middle Hills (due to ecological conditions).

Community Forests

- In the late 1980s, the MoFSC accorded CFs priority status in its work program. In recent years, however, there have been recurrent attempt at recentralization of government authority over CFs in order to readjust the balance between community and government needs. This has been consistently opposed by CFUGs, FECOFUN, and other NGOs. The CF forest tenure regime is a viable and secure institutional platform for implementation of the ER Program given its overall environmental and social performance over the last 30 years.
- Unlike the Middle Hills, where it grew rapidly, CF has faced obstacles expanding into the Terai. Initially, DFOs were supportive, but soon there was an implicit rule that only barren/degraded and remote patches of forests would be handed over to them—rather than valuable and mature stands of *sal* and other hardwoods. Effective support for CF expansion in the ERPAA will support the achievement of ER goals.
- CF has a strong potential to deliver REDD+ goals in the Terai. It is a relatively secure forest tenure institution with an incentive structure that promotes both forest conservation and limited income from forest products. CF was established within an enabling and regulatory framework that includes the 1993 Forest Act, 1995 Forest Rules, and 2009 CF Guidelines. These allow formation of CFUGs as self-governing and autonomous institutions that can exist into perpetuity provided they protect the forests while using forest products to meet their own needs. The CFUG constitution and operational plan form the key components of their governance system. While CFUGs have to obtain a permit to sell timber based on their operational plan, they can retain profits from these timber sales except for 15% tax payment on two valuable species: *sal* and *khair*.
- The enabling framework has enabled CFUGs to successfully green the forest areas allocated to them. While studies of forest cover improvements within CF in the Middle Hills confirm their ability to protect and manage forests effectively, there are no such studies for the Terai. Nevertheless, it is evident that the deforestation rate in the Terai has decreased over the duration that CFUGs have expanded across the Terai. In addition, CFUGs have strong capabilities for improving diverse forms of social welfare as well as household incomes indicating likely good performance on REDD+ co-benefits. Nationally, the first phase of CF involved a primary focus on improving forests; the second phase, from the early 2000s, additionally targeted poverty alleviation and social inclusion. In 2008, the government introduced a Gender and Social Inclusion Strategy and reformed CF Guidelines to address issues of

elite capture, poverty, gender equity, and distant users. Within the Terai, CFUG incomes are higher than in the Middle Hills, at times exceeding the total VDC budget.

- In the ERPAA, the largest number of CFUGs are found in high forest cover districts, whether in the Far and Mid-Western regions, or in the inner Terai. Dang District's performance is exemplary, with by far the highest number of CFUGs. During the last ten years, there has been consistent growth in numbers of CFUGs in most districts, including Dang.
- The formation of CFUGs in low forest cover districts led to conflict with southern distant users who found themselves marginalized. Partially in response to this issue, the government introduced CoF, a new forest tenure modality that involves a partnership between communities in numerous VDCs and the government (local and central). CFUGs, at times under DFO leadership, have also attempted to address distant user needs by including them as members of CFUGs and supplying forest products to depots located in the southern part of the district. Pilots to find effective solutions to this problem continue to be developed. The introduction of CoF, however, led to a broader competitive struggle between CF and CoF that has now reached a modestly accommodative consensus. Attempts to expand CoF, at the expense of opportunities to establish new CFUGs, will likely lead to further conflict.
- Although government and donor support has been crucial for the evolution of CFUGs, the expansion of CF has largely been achieved through the support of CSOs and NGOs such as FECOFUN, Forest Action, HIMAWANTI, COFSUN, and ANSAB. FECOFUN (90% of CFUGs are members) advocates better policies to support CFUGs and provides capacity building, learning, and networking support.
- FECOFUN has played a key role in improving gender equity within CFUGs. Soon after its formation, it introduced rules that require 50% women membership in CFUG executive committees and rotation of key office-bearer positions by term. These rules were later adopted by the CF Guidelines in 2009.
- Although CF constitutes a viable institutional platform for improving forests, increasing social welfare, and provisioning household forest products, there is a need to improve the governance system in order to both improve gender and social inclusion concerns among existing CFUG membership as well consider problems of membership exclusion among the poor and marginalized groups, such as *janajati* and *dalit*. That said, there are many examples of innovative approaches to forest management involving the poor. These can include the formation of informal leasehold groups within CFUGs for the poor; alternatively, poor CFUGs (e.g., made up of freed *kamaiyas*) have developed strong forest conservation rules such as no-grazing.
- In terms of benefit-sharing, CFUGs possess a central fund used to support forest management, collective welfare projects, and other group needs. However, no mechanisms at present enables the distribution of deposited funds to individual household CFUG members. This may create obstacles for REDD+ funds being distributed to CFUG households if the benefit-sharing criteria involve allocations to specific types of social classes among its members.
- The operational plan is the key vehicle for improving forest management for ER. Presently, there is a more than 50% backlog in revision of operational plans because of the expense and complexity involved. Although a participatory approach is recommended, this is not necessarily adopted in practice. There is a clear need for an accessible, simple, cost-effective, and participatory approach to operational plan development and renewal.
- The permitting rules governing sales of timber and establishment of timber processing facilities near CFUGs need to be simplified and relaxed in order to promote locally owned forest enterprises.

Collaborative Forests

- CoF is a relatively new forest tenure modality that involves managing large, contiguous blocks of GMFs through a partnership between the government and communities across a range of VDCs. It is not part of the 1993 Forest Act but instead was introduced in the 2000 National Forest Policy. In the

ERPAA, there are 16 CoFs in seven districts that mostly have low forest cover. It has a three-tiered governance structure.

- Ten years of piloting CoFs have demonstrated considerable diversity across sites in terms of governance, benefit-sharing, operational management, and conflict. Although no systematic review has been undertaken of the lessons gained from this first phase, it is clear that CoFs have a distinct role to play in the management of large forest blocks that are not close to any settlements. However, their governance, technical and financial management, and benefit-sharing arrangements all need considerable reform for long-term performance and sustainability. The 2003 CoF Guidelines, while explicit about the details of the governance structure that needs to be established, are otherwise weak on how an effective governance approach can be created that is accountable to its constituency. The representation of women, *dalits,* and *janajatis*, while provided for at minimal levels, are inadequate. CoF is meant to be an equal partnership between communities and governments, but in practice most of the day-to-day decisions of CoF remain largely in the hands of DFO staff.
- To what extent CoFs are able to fulfil their objectives of reducing drivers of degradation such as grazing and encroachment, poverty alleviation, and biodiversity conservation also remain unclear. Forest cover is improving, and CoF has improved employment opportunities, especially for women in nursery and forest maintenance.
- The silvicultural models being utilized require additional review; forest experts consider it important to more carefully match operational protocols with the local forest ecology through a participatory silvicultural approach.
- At present, the supply of forest products from CoF is inadequate for meeting local and distant forest user needs; therefore, in the absence of proven silvicultural techniques for increasing forest productivity, REDD+ has the potential to add to conflict. The cumbersome permitting procedures for obtaining forest products also contributes to a lack of forest management effort by local users.
- If GMFs will now be devolved as part of the ER Program, a new round of competitive struggle between CF and CoF is likely unless clear and widely accepted criteria are established for this devolution.

Protected Areas and Buffer Zone Community Forests

- Management of PAs has evolved over time to introduce participatory engagement by local communities in their BZs. The forest condition within the core of PAs remains relatively undisturbed. Limited case study research indicates improvements in forest condition and biodiversity within BZCFs; this could be further improved through targeted ER Program interventions.
- There are three NPs and two WRs within the ERPAA, each with their own BZ. Of these, Chitwan NP is considered the world's best for tiger conservation and has, by far, the highest income. All the PAs and BZs were established under the 1973 National Parks and Wildlife Conservation Act, with BZs added in a 1993 amendment. In 1996 and 1998, additional regulations were created to support BZ management.
- The core zone is managed by the park warden with the support of NTNC, WWF, and others. The Nepal Army engages in patrolling and monitoring. Forest conditions in the core is relatively undisturbed with even those parks with low income having good forest protection.
- The BZ is managed by the park administration through a three-tier governance system. The 1993 amendment requires that 30–50% of the park revenue be shared with the BZ Management Council. Where park revenue is substantial, such as in Chitwan, BZs (including CFs) receive a reasonable level of resources to support their activities. However, low income in other protected areas has thwarted effective management.
- Despite the intended move toward co-management of BZs, the management system is still top-down, in essence, weakening the community's overall tenure security. In the absence of detailed governance

stipulations within the law or guidelines, most of the natural resource use activities in the BZ take place under the discretionary power of the warden. BZCFs do not possess the autonomy of CFUGs. BZ Management Councils, User Groups, and User Committees are dominated by elites. While the creation of BZCFs has supported villages through better access to forest products and some limited income, issues of gender and social inclusion are not well addressed. Advocacy by CSOs and movements in support of more autonomous BZ management have helped to improve equity considerations. Where BZCFs have been created, there has been an improvement in forest conditions.

- There is considerable variation in BZCF management and livelihoods improvement capability across the landscape. In some, such as in the more affluent Chitwan, there has been substantial innovation and a multiplicity of BZCF types exist (focusing on eco-tourism, NTFPs, fisheries, etc.). In these Chitwan BZCFs, advocacy has resulted in marginalized *janajatis* having relatively better access to natural resources.
- While BZCFs have central funds, there are no guidelines as to how these are to be used. Moreover, there is no mechanisms for disbursement of funds to individual households. In this context, the ER Program design, in developing its benefit-sharing mechanisms, will need to consider how result-based finance can achieve ER goals.
- The ER-PIN states that PAs will be provided support for forest conservation activities, and their contribution to avoided deforestation and degradation will be accounted for in the ER Program. The ER-PIN does not clarify whether BZCFs will be separately addressed within overall PA management. Any perceived lack of parity between how CFUGs and BZCFs are provided benefits from a results-based finance approach as well as other incentives could lead to conflict and leakage across tenure types.

Protected Forests

- Although this category of forests was created within the 1993 Forest Act, there remains considerable lack of guidance in the law on their management. At present, the area under PFs is growing, occupying some 188,600 ha. Most of this has been created to support the regeneration of forests in wildlife corridors so that mobility for large species between core protected areas can be facilitated.
- Most of the forest protection work has been achieved through existing CFs within PFs. The TAL Program and WWF, in particular, have worked with them to create new approaches to biodiversity conservation. Community forestry coordination committees have been set up to network these groups into NGOs in order to build enterprises and other forms of livelihood support. Forests have considerably improved in these areas.
- The ER Program can draw upon the lessons of these CFs in PFs to identify interventions that can positively enhance forest condition while meeting livelihood conditions. Comparison of forest management methods across CFUGs, BZCFs, and CFs in PFs can support the improvement of forest operational plans across a range of devolved forest tenure types.

Pro-Poor Leasehold Forests

- Although the current area covered by LHFs in the ERPAA is too small to enable it to be a primary beneficiary within the ER Program, support for LHFs will help to ensure minimal leakage across forest tenure types by ensuring poor communities have access to needed forest products. Should LHF coverage increase substantially, its status as a primary beneficiary can be reconsidered.
- Established on the basis of the 1993 Forest Act, LHFs are a reasonably good level of tenure security having 40-year renewable leases. The LHF management approach has been consistently improved over time. Pro-poor LHF has been a donor-driven program run from 1992 to 2014, primarily with support from IFAD. Operating nationally in 22 districts, it benefits about 73,000 households. Within the ERPAA, however, only Chitwan and Nawalparasi have a small number of LHF groups.

- Under the LHF framework, small groups of five to ten households are collectively allocated small plots of degraded national forestlands to be greened for meeting household forest needs and livestock production. There is substantial participation by *dalits*, women, and *janajatis*, both in governance bodies and general membership. Considerable support is provided through mobilizers and start-up resources. Attempts have been made to streamline the application process in order to support easy formation, as well as to decentralize government administration over LHFs.
- LHFs have been fairly successful in improving forest cover, and boosting income to support the move out of poverty. There has been considerable innovation particularly on gender equity issues, with some LHFs successfully collaborating to create cooperatives and support groups.
- The 1993 Forest Act has not yet been amended to reflect the new 2002 Leasehold Forest Policy or the LHF lessons learned over the last 20 years.

Public Lands Forests

- PLF is a promising new community-based forest tenure regime being piloted within institutional lands under the DDC's jurisdiction. These public lands can be owned by local institutions such as local governments, schools, and religious bodies. PLF is a novel area of pro-poor forest management that provides public land to the landless and land-poor for a range of community-based forest management systems such as agroforestry, CF, woodlots, and other income-generating activities within the southern settled belt of certain low forest cover Terai districts.
- ER Program support for PLF will help communities in the southern belt meet their forest needs as well as generate income streams through intensive forms of forest management. This, in turn, will both reduce incursions into forests in northern belt of districts, reduce the time burden involved, increase overall green cover, and support the household needs of the landless and land-poor. While its current scope does not likely enable it to be a primary beneficiary of any results-based finance approach, the multiplier effects associated with this devolved tenure type indicates it has a strong potential to support reduced deforestation and forest degradation.
- In 2002, donor-supported projects by LFP and SNV began pilots in some Terai districts with distant user issues. Targeting the poor, they utilized the CF approach of developing user groups, here called PILM groups. Conditions were more challenging than in the Middle Hills CFUGs because of lower awareness and empowerment among the poor in the Terai than in the Middle Hills. Moreover, gender norms are stricter among Madheshis in the Terai with more restrictive mobility for women.
- PLF pilots have produced encouraging results: there has been a substantial expansion in the number of PILM groups covering different types of production portfolios. Moreover, distinct interest sub-groups have formed among *dalits*, women, vegetable growers, and fishery groups. Additionally, in 2007, a Terai Public Land Forest Users Network was formed to share lessons, promote advocacy, and push for gender equity.
- Presently there is no established regulation for approval of PILM groups, nor is there any specific duration for leases (they can range from 10 to more than 40 years). Given the successful results, there is a need to provide tenure clarity and security through the establishment of a detailed legal and regulatory framework. This has been identified as its next priority.

Private Forests

- PRF is one of the forest tenure types recognized in the 1993 Forest Act, but very little land is currently recorded with the DoF. While the complex bureaucratic system for PRF registration as well as system for getting a timber sales permit operates as a disincentive, it is clear that areas closer to Kathmandu are developing PRFs in light of the clear urban demand for wood products. Even so, much of the timber in the market comes from PRFs.

- With out-migration, many absentee landlords are opting for PRFs because of reasonable economic returns in the context of labor shortages for more intensive forms of agricultural production. There is interest in short rotation tree species such as eucalyptus and teak. Many prefer to grow bamboo but this does not officially constitute a forest. This indicates considerable potential for the ER Program to support PRFs through technical support, particularly in seedling supply as well as silvicultural management. All in all, this will alleviate the burden on existing national forestlands.

3.0 RECOMMENDATIONS FOR ER PROGRAM DESIGN AND IMPLEMENTATION

3.1 FOREST TENURE DEVOLUTION IN THE ERPAA

Nepal's ER-PIN is among the new jurisdictional REDD+ initiatives currently being developed around the world. By comparison with project-based REDD+, the idea note presents significant challenges: ensuring that national policy and legal structures provide support for a sequential rollout of the ER Program and designing and implementing interventions across a large landscape that transects numerous administrative districts. Building national long-term commitment, coordinating among multiple stakeholders, and developing tools for conciliating between multiple development and environmental objectives are all individually substantial endeavors. By working with a range of stakeholders across a diversity of land-use types, jurisdictional REDD+ aims for an integrated approach that can be promoted as a model for national implementation.

The issue of incentives needs to be examined through a range of regulatory, institutional, and market-based approaches, including forest and land tenure frameworks as the primary institutional form that governs and regulates forest management. Determining the right mix of legal and policy changes, tax benefits, subsidies, financial rewards, educational dividends, and other upfront investments along the entire wood products provisioning and supply chains is no simple task (Fishbein & Lee, 2015). Rather than think about benefits in terms of payment for opportunity cost in the way project-based REDD+ does, it is more effective to frame jurisdictional REDD+ as a set of sequenced interventions that can support transformational development goals within a landscape. In such a context, instead of direct results-based carbon payments, it is useful to consider rewarding *proxies of performance* that may be simpler to implement and easier to understand for all concerned. REDD+ payments from results-based finance can then form part of the mix in moving toward a richly forested landscape.

It is necessary to develop a programmatic approach that builds key bundles of well-targeted interventions early on to support positive momentum over the years of the program (Fishbein & Lee, 2015). Creating an enabling environment through legal and policy measures in parallel with interventions within the landscape will help, through phased design, to achieve the composite transformations within the forested landscape. A central dimension of programming will be to ensure that all the major forest tenure institutions and their property rights within the landscape work synergistically and effectively to achieve ER goals. This will require understanding both their niche roles within the landscape and the integrated and cumulative effects of their performance both in terms of avoided deforestation and degradation, carbon sequestration, and as a spectrum of co-benefits.

In the case of Nepal, for reasons to do with large-scale deforestation experienced in the 1960s and 1970s, the country embarked on an ambitious program to devolve forest tenure rights to communities in order to jumpstart regreening and improve forests. As a result, over the last 30 years, a strong pro-forest conservation ideology has been at work both within the MoFSC and among rural citizens. Even when the national planning agenda revolving around poverty alleviation and social inclusion came into ascendancy in the early 2000s, the challenge was how to interlink this new set of needs with ongoing forest conservation mandates. As a result, the production-oriented elements of forest management for supplying a range of forest products to domestic markets has not received attention until recently. However, Nepal is now at a turning

point: changing timber demand-supply dynamics together with persistent degradation of the remaining GMFs in conjunction with the rise of a REDD+ agenda have prompted a rethinking of forest sector.

Having demonstrated substantial capacity to achieve successful forest tenure devolution at a large scale, and with proof of its ability to regreen its landscape, the next step in Nepal's forest sector management is to further devolve forest tenure by improving forest planning and silvicultural management to meet the new set of multiple uses of the forests. Improving prosperity in an equitable fashion is the new development agenda in the forest sector. Here the issue of achieving REDD+ goals is not about initiating a new isolated program but rather about integrating it into the proposed continuation of forest tenure devolution within the Terai.

In doing so, there is considerable concern that REDD+ may weaken the autonomy of CFUGs as the program encourages greater centralization of government control. There is a growing commentary that the primary focus of the government within REDD+ has, so far, been on its technical dimensions such as carbon assessments, reference scenarios, and reporting and verification of emissions rather than on the central issue of tenure and its role in drivers of deforestation and degradation (Bastakoti & Davidsen, 2014; Bushley & Khanal, 2012; Ojha, Khatri, Shrestha, Bushley, & Sharma 2013; Paudel, Vedeld, & Khatri, 2015; Poudel, Thwaites, Race, & Dahal, 2014).

The current challenge is to identify the role of different devolved forest tenure institutions in the prevailing drivers of deforestation and degradation. The central issue that needs closer examination is how the combination of different forest tenure institutions leads to particular composite forest outcomes in the ERPAA. Those institutional modalities that have delivered substantive positive performance in forest management can play a future role in further devolution of the government's forestlands. At the same time, analyzing the issue of drivers at a landscape scale will necessitate supporting innovative new trends such as CoF, PRFs, PLFs, and PFs. Furthermore, situating the role of forest tenure institutions along any forest product provisioning and supply chain can illuminate the broader economic and political development dynamics at play.

Tenure security is certainly an important platform through which investment of time and labor in forest management generates benefits over the long-term. An important part of the bundle of rights and duties that make up a given tenure institution is management of the resource. The FSS has identified the need for more intensive forms of forest operational planning in order to better balance conservation and livelihoods goals. In light of this, using silvicultural concepts developed through participatory (rather than techno-bureaucratic) approaches, tailored to specific ecologies, forests can promote carbon sequestration as well as provide forest products for household and market needs. Globally, community-based forest management has tended to focus on governance and institution-building rather than on silvicultural knowledge and practice. Conservation objectives have all too often been seen to be conflicting with production aims in forest management.

Whereas the introduction of conservation objectives into productive forests is the norm elsewhere, it is the reverse in Nepal. Currently, there is an opportunity to consider how conserved forests can be intensively managed so as to simultaneously meet production goals. For example, management intensification involves not simply extracting more timber but also improving the quality of the harvested timber through thinning and regeneration techniques. It can also involve the use of more spatial segregation techniques where different plots are used for specific purposes. So far, silvicultural practices in Nepal have been simple and mostly passive. The ER Program is well-placed to support the identification of a spectrum of silvicultural practices tailored for the location-specific goals within different forest tenure modalities. Development of such silvicultural techniques through a participatory approach is in its early stage of knowledge generation globally. Nepal, therefore, has an opportunity to pilot some innovations on this front that could be shared with the global community.

3.2.1 ER Program Design and Implementation Recommendations

Based on the assessment of forest tenure types within the ERPAA landscape in the Terai, the following recommendations are put forward for the design and implementation of the ER Program. They start from interventions to be implemented at the macro-scale and move toward those needed at the individual forest tenure institutional level. The focus is on achieving composite and synergistic changes in forested landscapes within the ERPAA. While there is generally good understanding of the Middle Hills forest landscape, the Terai has been insufficiently researched. This assessment has sought to examine the formal governance frameworks and property rights rules at work within all forest tenure modalities in the ERPAA landscape, in particular identifying the key agents of change that have facilitated positive practices and effective performance. The effectiveness, particularly of community-based forest tenure, is highly dependent not simply on laws and policies but also on the right mix of support from donors, CSOs, national/global NGOs, and researchers. The recommendations are categorized into four sections: a) landscape-level interventions; b) strengthening government administration and capacity; c) complementary interventions; and d) cross-cutting issues. Since the delivery of the major part of ER will be from CF and CoF (existing and new), the landscape-level interventions are directed at these two devolved forest tenure institutions. The remaining smaller-scale forest tenure types can support the landscape-level improvements through complementary interventions. Additionally, lessons derived from the diverse experience of smaller-scale tenure types in balancing multiple needs can help build overall synergistic programming, prevent leakage across tenure types, and reduce conflicts.

A. LANDSCAPE-LEVEL INTERVENTIONS

Landscape-level interventions are designed to create the largest levels of ER within targeted forest tenure institutions. The ER-PIN sets out that reductions in emissions will be substantially obtained by devolving GMFs to a range of key forest tenure types, namely CF, CoF and a possibly new category called private plantations. Therefore, the ER Program can direct its resources towards developing a process that determines how that devolution process should be carried out. The creation of a participatory planning platform across the ERPAA that engages with DFCCs can help identify criteria for the distribution of GMFs to particular forest tenure types. Priority needs to be given to the plains Terai sub-landscape rather than the Churia both because deforestation levels as well as potential for carbon sequestration are higher given its particular forest ecology. Although much attention has been given to the Churia conservation program, its lower deforestation levels and capacity to sequester carbon indicate that amendments to regulations as well as supportive programs for existing devolved forest tenure institutions in this sub-landscape, primarily CFUGs, for balancing livelihoods and conservation needs will be the most cost-effective way forward with lower levels of conflict. Although existing CFUGs have already directed efforts at improving forest condition and cover, they can be additionally supported by implementing participatory forms of silvicultural management in their operational plans that ensure equitable and balanced use of forests that meets the multiple goals of the REDD+ initiative.

i. Forest Tenure Devolution of GMFs

According to the FSS, Nepal is poised to continue the forest tenure devolution process that hands over national forestlands to a range of community-based forest tenure types. The FSS, which sets out the direction of forest sector transformations from 2015 to 2025, is presently undergoing public consultation. The ER Program will be contributing to this devolution process. One major source of ER will result, according to the ER-PIN, from the devolution of GMFs to a range of key forest tenure types in the landscape, namely CF, CoF, and a possibly new category called private plantations. Prior to developing criteria to guide relative distributions among these tenure types, there is a need to develop an evaluation of the lessons from the first phase of CoF across all 16 diverse CoFs in the ERPAA. Case studies indicate that a number of governance and management issues need improvement. Given this is a large-scale forest tenure type that covers numerous VDCs, there is a complex multi-tiered governance arrangement that has to attend to a range of users (distant and close users) as well as multiple goals including sustainable forest management, timber harvesting and sales, supply of basic household forest products, poverty alleviation, and biodiversity

conservation. Certainly, CoF has a shorter history than CF and is a more complicated tenure arrangement. Therefore, while CoF has a specific niche role within the landscape, its ability to deliver the goals of the ER Program will require the identification of additional support areas to reduce the risk of performance weaknesses. Additionally, following the review of CoF lessons, it will may be necessary to establish CoF within the 1993 Forest Act so that it has a more secure footing in law.

Given that CF has proven to be a reliable institutional platform for achieving forest improvement and livelihood goals, the risks involved in devolving to this tenure modality are lower. That would point to the preference to devolve to CF where forests are near settlements. That said, CoF plays a specific niche role in forested landscapes that are far from settlements. In the case of both devolution to CF and CoF, priority should be given to the plains Terai first and then the Churia given the intensity of drivers behind deforestation and degradation in the former. All in all, supporting evidence-based decision-making in this next round of devolution will be critical to designing an approach that will not engender conflict and produce composite benefits.

ii. District-Level and Landscape-Level Forest Planning

Once the FSS is finalized, the development of landscape-based forest management plans that take into consideration the physiography, as well as socio-economic and political context, will permit a more tailored devolution in this next phase. Such a plan for the ERPAA can be produced through the creation of a participatory forest planning platform, one that will take the DFCC work to the next scalar level. The planning platform would bring together government ministries, departments, planning bodies (such as DFCCs), donors, key forest tenure stakeholders, and CSOs/NGOs from each district within the ERPAA. This will permit the ER Program to roll out a coordinated, rather than organic, forest tenure devolution process. In particular, it can be tasked with the development of criteria for the devolution of GMFs to CF, CoFs or private plantations. It can also be interlinked with the development of land use planning systems being set up by the Ministry of Land Reform and Management to implement the 2012 National Land Use Policy.

Specifically, this planning platform will need to take up two tasks to support this proposed devolution process. Firstly, it will need to undertake two key mapping exercises: 1) to map out the current location of forest tenure types against both settlement patterns and forest cover within the landscape and 2) to map out key stakeholders, projects, and areas of operation within the landscape. Secondly, based on this information, a series of collectively agreed criteria can be developed that considers such factors as type of forest, forest condition, economic value of forests, proximity to communities, proximity to infrastructure, level and range of forest dependency, and community poverty levels.

Such a planning platform can also help define the role of the Churia Conservation Program's area of scope within the ER Program and any special considerations thereof. Building the interest of local politicians and parties will be crucial to the success of any jurisdictional REDD+ initiative seeking to bring about transformational development. Rather than making the planning platform unwieldy and difficult to manage, providing specific avenues for political interests to understand the significance of this landscape-based approach through facilitated groups will be important.

Although the district-level planning process has been neglected since the early 2000s, the completion of the Constitution signals the possibility of DDC and VDC elections. To date, despite the principle of decentralization of governance put forward in the 1999 LSGA, the lack of a fully functioning district-level government due to national political upheavals has resulted in the absence of any forest planning mechanism. Building up the achievements of DFCCs within each of the ERPAA districts by providing financial resources, improving the dissemination of information, supporting effective representation, and building upward-downward linkages will be important avenues through which this promising but fledgling institution under the DDC can become a primary supportive node for planning within districts and across the ERPAA.

iii. Contested Forest Rights in Churia Conservation Program

Although the ER Program needs to prioritize interventions in the plains Terai rather than the Churia, the fact that the Churia Conservation Program has become a major conflictual flashpoint in forest sector planning indicates the need for an early resolution to the concerns of CFUGs, CSOs and NGOs on this issue. The major task ahead, therefore, is to amend the regulatory structure for the Churia Conservation Program so that forest conservation is promoted while the livelihood needs of the mostly marginalized and poor communities are addressed. The lack of reliable access to forest products for local communities is likely to create additional deforestation pressures through illegal activity. Furthermore careful consideration will need to be taken in terms of parity in benefits for CFUGs inside and outside the Churia in the ERPAA.

While deforestation levels in the Churia are relatively much lower than in the Terai, reducing this further will require ameliorating the prevalent problem of landlessness. This is a major cause of increased reliance on livestock production and hence dependency on grazing within forests. Future studies of how CFUGs operate within communities who are landless will help determine whether the creation of more CFUGs may improve forest management. Additional support for better development options (presently very limited) in this more remote and hilly context will enable the ER Program to address the root causes of forest degradation in the Churia.

iv. Silvicultural Management and Forest Operational Planning

Given the divergent goals of various devolved forest tenure institutions and the FSS's focus on intensive forms of forest management, technical support for participatory forms of silvicultural management and forest operational plans, will provide multiplier effects by reconciling the need for forest conservation, production of timber for markets, and provision of forest products especially for the poorer and marginalized members of tenure institutions. Supporting innovations that enable the preparation of a cost-effective, simple, and participatory protocol operational plans for the range of tenure types would be an important contribution for effective implementation of the ER Program. If the ER Program funds are invested in better forest operational planning, the positive impact on income generation for community members in all forest tenure types would be a significant incentive.

Rather than distribute any cash payments to households (especially given the absence of any existing mechanisms for this purpose), investing such funds into collective welfare projects such as forest enterprise development or renewable energy that improve sustainable forms of forest product supply and support both elite as well as poorer members, is likely to significantly reduce forest degradation. Such collective welfare projects can also include the needs of distant users where relevant.

B. STRENGTHENING GOVERNMENT ADMINISTRATION AND CAPACITY

The effectiveness and success of any given forest tenure institution, particularly devolved ones, depends not only on local-level governance by community members but also on capable government administration and management. While the expansion of CFUGs and other devolved forest tenure types speaks to the impressive capacity of the MoFSC and DFOs in supporting this tenure mosaic under a condition of limited resources. That said, additional resources to provide updated technical and management training can form the cornerstone for more intensive forms of forest management identified in the FSS.

i. Local Self-Governance Act and Local District Government

In light of the possible substantial overlap or conflict of authority over forest management between the MoFSC and the DDCs/VDCs as a result of the stipulations in the 1993 Forest Act and the 1999 LSGA, a comprehensive review of this body of legislation is needed to clarify specific rights and responsibilities going forward. The development of discretionary and uneven approaches in forest sector management could lead to conflicts that will pose major obstacles to ER Program implementation. Additionally, how the forest sector will be integrated within a future umbrella Land Law will likely have considerable ramifications for the ER Program.

ii. Strengthening DFOs

It has been clear for some time that the constant turnover of DFOFs is a substantial hindrance to building effective long-term plans for forest management at the district level. Rather than relying on constantly revolving leadership to prevent corruption and the entrenchment of interests, it may be preferable to build better modes of upward and downward accountability so that DFOFs can support broader political and social mandates. Furthermore, building a set of incentives for DFOs to improve the management of forest tenure types within their district-level landscapes will help ensure that resources are directed not only at patrolling, monitoring, and licensing but additionally build their role as a catalytic agent that facilitates effective tenure devolution. In order to become effective administrators of the numerous forest tenure types, the DFO staff will value the provision of technical training (such as on participatory silvicultural techniques) and better sensitization to collaborative approaches to forest management. A more robust budget will make this altogether more feasible.

iii. Encroachment

Addressing the problem of encroachment on forestlands is politically very contentious issue. Given that differentiating *sukumbasis* from *hukumbasis* is an arduous process, it will be difficult to rely solely on the actions of the commission established to remedy squatter problems. An important dimension in deterring encroachment is to further devolve forest tenure from GMFs to CFs or CoFs since they are actively engaged in monitoring and guarding of their forests. Additionally, the creation of a land use planning process, presently in the works under the Ministry of Land Reform and Management, will also ensure clarity of land use allocations so that arbitrary takeover of lands for informal settlement of government lands becomes more difficult. Lastly, DFOs can then target their limited resources at priority areas for forest law enforcement and monitoring to prevent new settlements.

C. COMPLEMENTARY INTERVENTIONS

Complementary interventions aim to ensure that the major interventions to achieve ER goals across the ERPAA are supported or enhanced by additional second-tier interventions that additionally improve ER through further improvements in forest conditions through reducing deforestation and degradation pressures as well as better forest management. These interventions are targeted at the smaller forest tenure institutions that hold promise but, as yet, their scalar contribution to program goals remain relatively limited.

i. Buffer Zone Community Forests

Despite a limited level of autonomy over management of BZCFs, they are still able to improve forests. There is therefore considerable potential to support better forest management as well as co-benefits through strengthening the tenure conditions. This would involve elaborating the regulations to provide more specific details of governance (duration of tenure modality, and incorporation of gender and social inclusion concerns), operational planning, use and sale of forest products, and use of funds. Although there is a three-tiered governance system for BZs, the lack of clear regulatory guidelines, by default, results in these forests inadvertently remaining under the discretionary control of the national park warden. In particular, although BZCFs are clearly diverse, they are dependent on the overall revenue levels of PAs. Where parks have low revenues, BZCFs can benefit from developing alternative sources of income generation to support forest management and livelihoods. Such additional guidelines can provide BZCFs with greater autonomy and strengthen social inclusiveness and equity, as well as a sense of ownership in the forests. In turn, the sense of ownership will bring greater benefits both to the forests and community members.

ii. Protected Forests

Protected forests are a hybrid type of forest tenure institution that essentially works with CFUGs to strengthen their contributions to biodiversity conservation. Much of this work has been initiated by NGOs. Although the outcomes of PF management in wildlife corridors indicates improvements in forest condition, deriving lessons (on governance, management, and income-generation) from this experience can support ER Program design at large in identifying how specific interventions can better balance the multiple interests of forest condition and community well-being. In particular, attention to different strategies utilized in Churia

and Terai forests will help differentiate the relatively different needs of these sub-landscape types. This, in turn, may throw light on whether the provisions of the 1993 Forest Act and its bylaws need any revision in order to ensure a more secure enabling framework for this tenure type.

iii. Public Lands Forests

PLFs are an important emerging component of the overall push to reduce deforestation and degradation in the ERPAA. By supporting the poor and marginalized residents of the southern belt of certain ERPAA districts, the burden on the main government-managed and other forests is reduced. Although considerable promise has been demonstrated by PLFs so far, there is a critical need to establish a clear legal and regulatory framework that provides PILMs with tenure security. This should clarify the relative roles of DDCs, VDCs, and DoF so that PLF approval, management, and permitting dimensions can be efficiently streamlined. The ER Program can benefit from taking this up as one important area of policy-related engagement and additionally consider the value of scaling up PRF across those districts with limited forests in the southern belt.

iv. Private Forests

While PRFs are only expanding in areas close to urban markets such as Kathmandu, it is clear that removal of barriers in the form of excessive taxes and regulations on transport and sales of timber will help jumpstart what is already an emerging development within the ERPAA. Furthermore, given the limited availability of seedlings for any type of afforestation activities, the DoF should develop more accessible nurseries with species that PRF owners favor.

D. CROSS-CUTTING ISSUES

Cross-cutting issues are those programmatic concerns that can support the effectiveness, efficiency, and equity dimensions of the Program Design by recognizing the need to pro-actively build support systems that both reduce risks in the face of large-scale economic and environmental changes as well as catalyze social transformations in the interests of minimizing conflict and reducing poverty as well as marginalization.

i. Globalization and Climate Change

The ER Program will benefit from being attuned to the major transformations taking place in the ERPAA in terms of economic development, post-conflict politics, infrastructure, agricultural practices, labor availability, migration, forest product needs, as well as climate change. Given that large-scale out-migration will increase the feminization of agriculture and forest sectors, there will be fundamental gender equity repercussions for governance and forest management. Developing resilience and adaptability in the face of the double exposure to globalization as well as climate change will permit flexibility in options for supporting richly forested landscapes.

ii. Gender and Social Inclusion

Across all forest tenure modalities, the improvement of gender equity and social inclusion remains a central concern. While there is an excellent Gender and Social Inclusion Strategy and a progressive set of guidelines for CF in the MoFSC, the difficulty lies in their limited implementation to date. Beyond CF, a stronger set of gender and social inclusion guidelines are valuable e.g., for BZCFs. In particular, special consideration for how marginalized and landless *janajati* and *dalit* communities, as the most forest dependent, can become active decision-making members of forest tenure institutions needs to be underscored in programmatic design.

Moving Forward

This set of recommendations emphasizes the importance of building a strong and transparent participatory planning process across the ERPAA landscape as well as at the district level. This requires the identification of consensually agreed criteria (condition of forest, proximity to settlement, proximity to road infrastructure, poverty levels) that will be utilized for determining allocations of GMFs to a range of devolved forest tenure modalities, most importantly CF and CoF. In this way, a landscape-level evaluation of the niche role of each

forest tenure type is explicitly developed so that a fuller understanding of the likely aggregate or composite effect of current and future levels of devolution on ER can be obtained. The development of a landscape-level strategy will considerably benefit from strengthening the technical and management (including monitoring) capacity of the central and district-level government staff, as well as addressing any legal obstacles to smooth implementation. Additionally, recommendations on complementary interventions have been provided on necessary changes within the smaller forest tenure type to improve governance as well as use, management, and equitable benefit-sharing rules so that there is an overall reduction in drivers behind deforestation and degradation with a corollary move towards sustainable forest management practices.

Jurisdictional REDD+ programs are large-scale endeavors that will require considerable up-front work on mapping out likely scenarios of forest tenure devolution within a landscape that is in a considerable state of development flux. Addressing the two key cross-cutting issues of globalization and climate change, as well as gender and social inclusion provide the building blocks for a pro-active consideration of how the ER Program can launch transformational development pathways to a low-carbon future.

3.2 ABILITY OF THE ER PROGRAM ENTITY TO TRANSFER ER TITLE TO THE CARBON FUND: CRITERION 36

Given the specific REDD+ approach being taken in the TAL, it is clear that specific communities in different types of devolved forest tenure institutions throughout the ERPAA will play, in aggregate, an active role in achieving the proposed ERs. Whether in CFs, CoFs, BZCFs, or other major forest tenure types, the ER Program will need to include a set of supportive mechanisms and results-based financing tools that act as an overall system of incentives to forest managers and communities in varied forest tenure institutions leveraging their efforts for achieving ER at a systemic level. Although the forestland is ultimately "owned" by the government, it is those that hold usufruct rights who will deliver the performance goals set out in the ER Program when provided with a package of appropriate enabling legal and regulatory frameworks, targeted capacity building and technical support, and direct financial incentives.

One of the central issues in developing a viable ER Program in this ERPAA is how to reconcile the technical reality of carbon reference scenarios (that will only likely be measurable at the landscape or district scale) against the recognition that ERs will be generated by the sustained efforts of different types of community-based forest tenure institutions operating at distinctively different scales across the landscape. Implementing the ER Program in large numbers of small-scale tenure institutions will incur higher transaction costs (contractual, as well as monitoring, reporting and verification ones) than a few, large-scale forest tenure institutions. The Carbon Fund recognizes that it will not always be possible to distribute funds within a landscape or jurisdiction that are direct proportional to specific contributions to ER given the mosaic of forest tenure institutions at play in jurisdictional REDD+. Countries will need to determine relevant approaches through their benefit-sharing protocols as well as "internal" carbon accounting methodologies, taking into consideration the projected ability of different tenure institutions to deliver specific performance or action targets.

In light of this, the critical issue of benefit distribution across and within the multiple types of forest tenure types in the ERPAA need not be approached directly in terms of carbon rights or ownership criteria. Instead, the key concern should be for identifying a package of benefits for identified stakeholders in each forest tenure institution that will move the forest management system in the direction of improvements in forest cover and condition (and therefore ER) while generating a range of direct financial benefits as well as co-benefits for any participating tenure institution's members.

Therefore, criterion 36 can be approached through a contractual mode in which all beneficiaries appoint a fiduciary entity that is responsible for managing and accounting for the Carbon Fund payment contingent on a set of responsibility criteria. One potential scenario is to establish a national-level REDD+ fund that becomes the entity receiving the funds from sale of the carbon credit to the Carbon Fund. This would permit the creation of clear authority to transfer ER credits while allowing a variety of actors to benefit from ER

activities at the local level (based on performance, proxies of performance such as effort, or other combination of criteria).

Although it is recognized that nearly all the forestland in the ERPAA is under the jurisdiction of the MoFSC (except for PLF lands under the DDC's jurisdiction, and very small areas under the private sector), the management of this fund would be structured so as to acknowledge the significant role of the central and local government as well diverse tenure stakeholders in the ERPAA landscape in achieving ER goals. This REDD+ fund could be part of the REDD+ Implementation Center (within the MoFSC) or another government division or it could have a substantive level of legal and operational independence from the national government. If the latter, such a fund would need to be created with an independent legal personality (e.g., private non-profit organization, trust, or a devolved or semi-governmental entity) (Conway, Pritchard, Streck, & Broadhead, 2014; Streck & Parker, 2012).

The specifics of its legal form would have to be carefully tailored to the national legal context. The fund's governing board would be made up of high-level representation from the public sector (relevant ministries and agencies), key forest tenure types, key civil society forest organizations, forest experts, and the private sector. Among other duties, the board would oversee the operational and distributive procedures governing fund disbursement to all relevant forest tenure entities within the ERPAA. Establishing an autonomous status for such a body would bypass the risk that results-based finance modalities are seen to be under the centralized control of the government. On the other hand, working through a participatory institution of this kind will engender a more complex decision-making process than one housed and directly managed by a government body. Whichever path is adopted, the specific details of benefit sharing formulas and mechanisms would need their own dedicated study.

In the current legislation, there are no stipulations regarding tenure or property ownership rights over organic biomass carbon within national forests under the government's jurisdiction. Moreover, organic biomass carbon is not defined as a forest product. Therefore, any relationship to the granting of usufruct rights over timber or NTFPs (defined as forest products in the 1993 Forest Act) does not come into play. As such, the right to timber extraction does not equate to a tenure or property ownership right over biomass carbon in the forest. Other legislation such as the Mines and Minerals Act of 1985 have no relevance to this discussion because minerals are defined as inorganic substances.

While it is hypothetically possible to create a clear tenure or property ownership right to carbon through legislation, this would be time-consuming, complicated, and politically charged. If carbon tenure rights were created among multiple actors based on forest management regimes, how would these rights be precisely defined? How would they be tracked? In light of this, it is useful to move away from the biomass carbon ownership question.

One solution that moves away from a tenure-based approach to establishing clear title to the carbon credit is to frame the results-based finance structure in terms of payment for ecosystem services (see also Belbase, Paudyal, Sijapati, & Luintel, 2015). One of the amendments proposed to the 1993 Forest Act revision concerns the establishment of a Payment for Ecosystem Services mechanism. In this case, a centralized fund will disburse funds based on actions to improve ecosystem services through a contractual model. Another solution that bypasses the issue of carbon tenure's relationship to existing forest tenure rights involves the use of the current environmental protection legislative framework with minor regulatory amendments from the Cabinet level of the government. This scenario is as follows:

Greenhouse gas emissions (carbon dioxide and equivalents) fit the current definition of "pollutant" under the Environmental Protection Act, Article 2(b), and the government already has the established right to regulate and control pollutants. This principle can easily be utilized for the management of national forests. Biomass carbon sinks within the national forests are the means through which greenhouse gas ERs are created. Verifiable reductions in greenhouse gas emissions from the national forest generate transferable ER-Credits. In order to achieve this, it is necessary to create clear authority in the MoFSC: a) to regulate greenhouse gas emissions from national forests; b) to secure title overall all ER-Credits generated from improved national forest management; and c) to transfer ER-Credits for financial consideration.

In practice, this would require a single amendment to the GoN's Division of Work Regulations that would:

a) Grant the MoFSC the authority to regulate greenhouse gas emissions from national forests;

b) Grant the MoFSC the authority to create a central-level entity within the ministry that can secure title to all ER-Credits generated from improved forest management methodologies; and

c) Create a central-level entity in the MoFSC that has title over said ER-Credits and that can enter into an Emission Reduction Program Agreement (ERPA) and transfer title to another legal entity (Carbon Fund) in exchange for financial consideration.

Once clear authority is secured from a single cabinet-level regulatory amendment, the MoFSC could develop an ER-Credit Management Mechanism through its internal regulatory authority. ER-Credits would be generated and held at the central level (possibly in a national fund), negating the need for complicated and time-consuming ER-Credit title transfers from numerous locations to a central entity. Multiple local actors (including private sector and communities) could still benefit based on principles of payment for services/performance (or other criteria) and equity developed within the national REDD+ funding body.

There would still be a need to develop financial management and benefit-sharing mechanisms (which is not easy), but the complicated carbon ownership debate would be taken out of the picture. The benefit-sharing mechanism could allocate financial rewards ("carbon benefits") based on a range of possible criteria including relative contribution to the generation of ER-Credits in a jurisdictional area. There is also the possibility of price premium payments for environmental services (as with biodiversity).

The existing forest management regime benefit-sharing mechanisms (for CFs, CFMs, BZCF, etc.) are not well suited to ER-Credit Management Mechanism benefit sharing. They are too complicated, not sufficiently transparent, and designed for extraction of resources (not extraction of carbon). In light of this, a new benefit-sharing mechanism would need to be specifically tailored to the ER concept. In order to achieve this effectively, it will be necessary to ensure maximum participation of all concerned stakeholders throughout the process, and ensure that proper incentive mechanisms are utilized to improve forest condition. It is vital that maximum benefits flow to the local level, and it must be made clear that existing use rights will not be infringed upon. In essence, the principle of maximum recognition of rights over the resources (see the *Voluntary Guidelines on Governance of Tenure*) will govern the process.

Among the outstanding issues that would need to be acknowledged and addressed are as follows:

- The constitutional reform process could have an impact on financial management regimes;
- The provisions in the current Climate Change Policy requiring 80 percent of funds generated to go to grassroots or community level are unclear and, moreover, do not enable a flexible approach;
- Continued research is needed on what mechanisms work best to reduce greenhouse gas emissions and generate ER-Credits; the key is evidence-based policy-making.

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APPENDIX 1. REDD+, FOREST TENURE DEVOLUTION, AND CARBON RIGHTS

1-1 TENURE AND REDD+

It has become increasingly clear that "interactions among tenure, regulatory frameworks, and governance are critical in determining the extent to which forest management objectives are achieved" (FAO, 2011, p. ix; Mayers, Morrison, Rolington, Studd, & Turall, 2013). Supplementing the broad growing momentum to devolve forest tenure to communities and individuals, REDD+ has further raised the profile of forest tenure as an important cross-cutting issue for effective forest governance. The need for secure local land and forest rights is recognized as an important enabling condition for effectively reducing carbon emissions whilst enhancing livelihoods and sustainably provisioning commodities. Secure tenure improves key effectiveness, efficiency, and equity dimensions of REDD+ (Larson, 2013). Presently, tenure regimes in REDD+ landscapes or project areas are often unclear (Day & Naughton-Treves, 2012). Tenure insecurity, therefore, has been one of the main reasons for opposition to REDD+. The continuing existence of tenure ambiguity and insecurity, however, could contribute to ongoing deforestation and degradation. In light of this, there is a crucial need to understand how the complexity of land, forest, and other natural resource tenure affects the successful development and implementation of REDD+ (Bluffstone & Robinson, 2014; Larson, Brockhaus, & Sunderland, 2012; RRI & Tebtebba, 2014; Rothe & Munro-Faure, 2013). In practice, there is usually a continuum of types of land and forest tenure rights at work in any given forested landscape operating in some form of mosaic pattern. Along this continuum, it is important to note that the particular ways in which tenure arrangements function depends on the broader socioeconomic context to produce particular types of forest and socio-economic outcomes.

An assessment of tenure systems and their governance within a forested landscape is needed for identifying key REDD+ stakeholders, establishing responsibilities for carbon sequestration, enhancing existing forest management effectiveness, developing incentives through equitable benefit-sharing mechanisms, ensuring functioning dispute resolution systems, and identifying liability for reversals. This requires attention to the multiple institutional scales (local communities, local and central governments, donors, federations, NGOs, and international actors) through which the governance of tenure occurs (Doherty & Schroeder, 2011). All in all, attending to the varied dimensions of tenure will minimize potential risks associated with any investment in REDD+ programs, reduce conflict, and build an equitable distribution of benefits (Duchelle et al., 2013). It is increasingly recognized that detailed assessments of the complexity of tenure arrangements and practices within specific landscapes or jurisdictions will help develop a nuanced understanding of the benefits and risks over the life of the project (Bolin, Lawrence, & Leggett, 2013; Sommerville, 2011a).

The 2010 Cancun agreements of United Nations Framework Convention on Climate Change requested developing country parties to address, among a range of safeguards, land tenure issues. Most REDD+ initiatives such as the FCPF and the UN-REDD have identified tenure issues as an important component of REDD+ readiness work (Sommerville, 2011b). They are identified as key issues within R-PPs, UN-REDD National Programme Documents, and in Country Needs Assessments. The Carbon Fund's Methodological Framework has explicitly included Criterion 28 in order to address land and natural resource tenure concerns during the development of the ER Program. The assessment findings can help determine not only the various options for carbon tenure (as a new overlay of rights and responsibilities on extant

arrangements) but also which types of short- or long-term measures may be needed to address clarity or security of tenure requirements for REDD+ implementation over the long-term. The *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* ([VGGT] FAO & CWFS, 2012) and associated technical guides (FAO, 2013 & 2014a; Mayers, Morrison, Rolington, Studd, & Turall, 2013) can be utilized in developing a gender and socially inclusive strategy for forest tenure reform. So far, while there have been attempts to address tenure challenges at the local level, what is often needed are amendments within the national-scale tenure governance system as part of the readiness and ongoing activities (Larson et al., 2013; Sunderlin et al., 2014).

1-2 UNDERSTANDING FOREST TENURE DEVOLUTION IN FORESTED LANDSCAPES

While "tenure" is often confused with the concept of "ownership," ownership is simply one type of tenure. Tenure over natural resources refers to the social relations, institutions, and rules that govern people's access to and use of land and natural resources (USAID, 2013). Natural resource tenure, therefore, determines who is allowed to use which resources, in what way, for how long and under what conditions, as well as who is entitled to transfer rights to others and how (Larson, 2013). A detailed examination of tenure rules and practices can permit an understanding of current local-level behavior in using resources. Forest tenure is about more than forest management; it addresses issues of governance and the rights of the tenure institution members.

Tenure conditions are both a reflection of the content of the property right as well as the security of that right. While it is common to focus on tenure *rights*, in reality, tenure consists of a "bundle of rights and responsibilities" that include such property dimensions as access, use, management, protection, market products, inheritance, disposal of, lease or sale (FAO, 2011). When a given entity has an exclusive, strong or permanent set of these property rights, including the right to inalienable title, then we can say they are owners of that land or resource. Property rights can be envisioned as benefit streams that are regulated by rules (Andersson, 2012). Where they are communally held, there is also a shared distribution of costs (such as transaction ones) and risks in managing and distributing the resource benefits. At times, these are shared by both the government and local communities.

In practice, there are a wide diversity of tenure types with complex mixes of rights and responsibilities (shared between particular entities) existing over specific geographic and temporal scales. It is difficult to advocate for one particular tenure type since the effectiveness and result of any given tenure arrangement is distinctly related to the multi-scalar political economic, ecological, and socio-cultural context in which it is embedded. In addition, it must be noted in the case of forested landscapes, that diverse types of tenure rights over the subsoil and forested land itself, the communally used forest, or the individual trees (and even its specific products) can be vested in different entities.

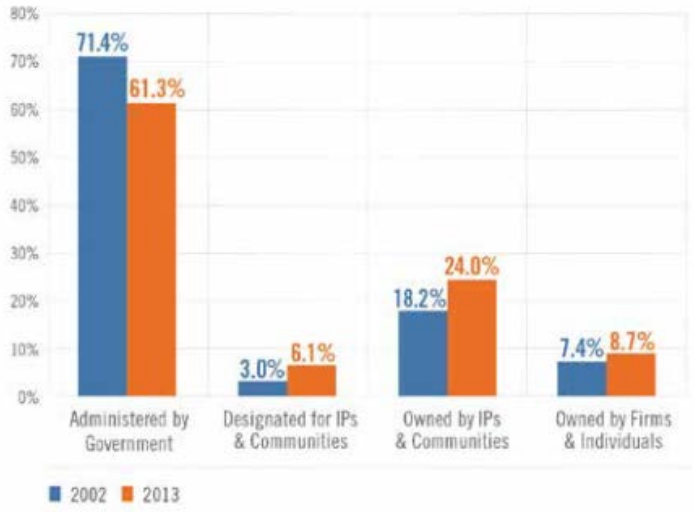
Such tenure rights can either be held formally (*de jure* or rules-in-form; *kanuni hak* in Nepali) or informally (de facto or rules-in-use; *chalan* in Nepali). Those that are formally established through statutory law, precedent, policies, or regulations are capable of providing stronger types of recognition and protections should the capacity to implement them exist. In practice, though, it is clear that many forests have been informally used, managed, and protected by local communities through varied forms of institutions and practices. Where these remain unrecognized, they may be vulnerable to having their rights curtailed or overridden. Therefore, there has been a move to obtain formal recognition of customary tenure arrangements. While this can convey significant benefits, the formalization process can itself limit the flexibility to adjust the tenure rules to accommodate changing conditions, be they socio-political or ecological. Invisibility in the formal sense, therefore, can create local-level liberties. Even when tenure arrangements have been formally established, there can either be a plurality of legal systems at work (at times conflicting), or different legal protections at various jurisdictional scales.

When it comes to forest resources, today, roughly 73 percent of the world's forests are publicly owned (RRI & Tebtebba, 2014). There has been a "global tenure transition" taking place whereby the absolute area under

the control of governments has been reducing while the area designated for use or owned by the community or individual has been increasing (Sunderlin, 2011). According to the Rights and Resources Initiative (RRI, 2013), governments in the developing world had by 2012 recognized communities' ownership or long-term use rights over 31 percent of the developing world's forests—over 490 million ha. That said, governments still retain full authority over 60 percent of forests in the developing world. After the strong momentum to recognize community land rights (particularly through legislation) between 2002 and 2008, there has been a slowdown in this pace (RRI & Tebtebba, 2014). Even so, in recent years, at least 26 countries have adopted some initiatives to clarify forest tenure rights (particularly for indigenous peoples) including addressing encroachment issues (FAO, 2014b). It must be borne in mind that while there has been an overall trend towards greater devolution of ownership and management to communities, individuals or private companies from the late 1980s to the present, the scale and pace have varied considerably by continent and country (Sunderlin, Hatcher, & Liddle, 2008)). Nepal has been one of the global pioneer countries in devolving management control over state forestlands, and as such, has had considerable success in establishing community-based forestry management over almost 40 percent of the country's forestland area.

Along the continuum of forest tenure arrangements, we can identify four major categories of tenure types. Figure 1-1 presents a graph comparing the change in statutory forest land tenure within these types between 2002 and 2013 in middle and lower income countries (RRI &Tebtebba, 2014). At one end of the spectrum, we have those forests administered by the government. Often called "publicly owned forest lands," the government has jurisdiction over these estates and are therefore managed in the national interest. Forestry ministries or departments are authorized to directly regulate and manage these forestlands. The detailed distribution of power vested with the central versus local government authorities depends on the level of decentralization.

FIGURE 1.1: CHANGE IN STATUTORY FOREST LAND TENURE IN LOW AND MIDDLE INCOME COUNTRIES 2002-2013 BY PERCENT



Source: RRI & Tebtebba, 2014.

As we move into the middle of the continuum, we find many forest tenure regimes that are varyingly labelled: community, communal, commons or even collective. The identification of the "community" is not necessarily a straightforward process. Within this category, we firstly have those that are community-managed on state forestlands such as in Nepal. Among these, the level of partnership and collaboration between the indigenous peoples or community and the government varies along a spectrum resulting in different types of models such as community forestry (greater autonomy), joint forest management, and collaborative forestry (lesser autonomy). In essence, while private forests are typically assumed to be held by individuals or private companies, community-based arrangements can also be said to be a particular form of devolved privatization. Secondly, we have those that are owned by communities or indigenous peoples. At 24 percent, it is clear that

community-owned forestlands in 2013 are significantly greater in total area than the 6.1 percent that are community-managed. Lastly, we have those lands which are owned by individuals or firms standing at 8.7 percent.

APPENDIX 2. INTERVIEWEES LIST

IN KATHMANDU

1. MoFSC REDD+ Cell
2. MoFSC Department of Forests – Community Forestry Division
3. MoFSC Department of Forests – Collaborative Forests key person
4. MoFSC Department of Forests – Leasehold Forestry Programme
5. MoFSC Department of National Parks and Wildlife Conservation
6. MoFSC Department of Forest Research and Survey
7. MoFSC Forest Resource Assessment Office
8. Multistakeholder Forestry Programme Director and Key Staff on Public Lands Forestry
9. Hariyo Ban Programme
10. World Wildlife Fund Nepal
11. Helvetas Swiss Intercooperation Country Director
12. FECOFUN
13. Forest Action – REDD+ Researchers
14. COFSUN
15. NEFIN
16. Danar
17. Community Development Organisation
18. National Forum for Advocacy Nepal
19. Community Self-Reliance Centre
20. HIMAWANTI
21. Women Organizing for Change in Agriculture and Natural Resources
22. Mr. Rameshwor Khanal, Chairperson, President's Chure Terai-Madhesh Conservation Development Committee
23. Mr. Raja Ram Syangtan, Member of Parliament
24. Ms. Bimala Rai Paudyal, National Planning Commission
25. Mr. Keshav Kanel, expert on community forestry
26. Mr. Dhruba Acharya, Practical Action

27. Mr. Bishnu Sharma, South Asian Network for Development and Environmental Economics

IN DISTRICTS

Dolakha

1. District Forest Officer and staff
2. FECOFUN staff
3. ANSAB staff
4. Buddha CFUG chairperson
5. Charnawati CFUG members

Bara

1. Assistant District Forest Officer
2. Office bearers of Halkhoria CoF

Parsa

1. District Forest Officer

Chitwan

1. District Forest Officer
2. Terai Arc Landscape Office
3. National Trust for Nature Conservation office
4. FECOFUN staff
5. Chelibeti CFUG
6. Gyaneshwor CFUG
7. Baghmara CFUG
8. Tikauli Buffer Zone CFUG
9. Devitar LHFG
10. Ms. Indira Bote on janajati rights in buffer zones

Kapilbastu

1. District Forest Officer
2. FECOFUN staff
3. Tilaurakot 1 CoF staff and community members
4. Jharna CFUG

Dang

1. District Forest Officer

2. FECOFUN staff
3. Narti Community Forest Coordination Committee
4. Chandra Jyoti CFUG
5. Shimchisapani CFUG

Bardiya

1. District Forest Officer
2. Acting Chief Warden of Bardiya National Park
3. Baraban CoF
4. Hattisar Shivapur BZ CF
5. Park Victim People's Right Group

Kailali

1. District Forest Officer
2. Terai Arc Landscape Office
3. Regional Forest Office
4. Pargati Women's CFUG

Kanchanpur

1. District Forest Officer
2. FECOFUN office
3. Acting Chief Warden of Suklaphanta Wildlife Reserve
4. National Trust for Nature Conservation
5. Janahit Mahakali CFUG
6. Suklaphanta Buffer Zone Council chairperson

Dadeldhura

1. District Forest Officer
2. FECOFUN staff

APPENDIX 3. TERAI DEVELOPMENT PROFILE

Recent momentous political transformations at the national level coupled with increasing economic integration with India and China have brought the Terai into greater prominence producing an emerging body of research on the region. Starting with the establishment of multi-party democracy in 1990 (propelling forward a number of pro-Madheshi political parties), the signing of the comprehensive Peace Accord in 2006 declaring the end of the People's War between the government and Maoist fighters, the end of the monarchy in 2008, and the creation of a new federal Constitution have raised the national profile of hitherto marginalized Terai political rights and interests.

Today, the fertile Terai region has a dense settlement pattern and is known as Nepal's rice bowl. It is home to 13.3 million people from diverse ethnic and indigenous groups. Once a large-scale malaria eradication program took hold in the Terai in the 1960s and 1970s, there was a significant migration of households from the Middle Hills into this prime agricultural production region. This together with the construction of the East-West Highway (from 1960s to mid-1980s) and electricity transmission lines along its length have now made the Terai the nation's primary economic belt through rapid agricultural and industrial development. Districts such as Chitwan with close proximity to Kathmandu have done well economically, drawing migrants from all over the country; hence, it is called Nepal's 76th district.

Given the proximity of its economy to India, it continues to experience major improvements to its road and communication infrastructure. Economic and population growth has significantly intensified demand on natural resources including forests. Whilst rapidly developing, it has to contend with long-existing problems of landlessness and unequal wealth distribution despite recent government attempts to distribute land (often forestland) to the landless. This rapid transformation of its demographic, settlement pattern, and socio-political environment, at the same time, has produced on-going conflict between long-term residents and newcomers, including in the forest sector. With continuing in-migration from the north as well as out-migration of working age males (and some females) to urban centers in Nepal and India, and more typically to countries further afield, this is a region under considerable flux.

3-1 POPULATION

The Terai has undergone a dramatic increase in its population level since the 1960s primarily due to in-migration from the Middle Hills after large-scale malaria eradication in the 1960s. As a result, the Terai disproportionately shares the burden of increased demographic pressure in Nepal, which in turn has created a new set of intensifying pressures on natural resources such as forests. The Terai occupies only 23 percent of Nepal's land area (see Table 3-1 and Table 3-2), but its population increased from 38 percent of Nepal's total in 1971 to 50.3 percent 40 years later. During the same period, the percentage of the national population in the Mountain and Middle Hills gradually declined.

TABLE 3-1: CURRENT POPULATION AND POPULATION DENSITY IN NEPAL'S DIFFERENT ECO-BELTS

Region	Population			Share of population (%)	Share of land (%)		Population density	
	Total	Male	Female		Total	Cultivated	Total (per km^2)	Cultivated (per km^2)
Mountain	1,781,792	862,592	919,200	6.72	35.21	4.36	34.38	2,878
Mid-Hill	11,394,007	5,440,067	5,953,940	43.01	41.70	27.77	185.73	2,881
Terai	13,318,705	6,546,383	6,772,323	50.27	23.11	67.87	391.51	1,381
Nepal	26,494,504	12,849,041	13,645,463	100.00	100	100.0	180.01	1,865

Source: CBS, 2014; MoAD, 2012/13.

TABLE 3-2: CHANGES IN POPULATION AND POPULATION DENSITY IN THE TERAI IN THE LAST 40 YEARS (1971 TO 2011)

Region	Population %					Population Density per km^2				
	1971	1981	1991	2001	2011	1971	1981	1991	2001	2011
Mountain	9.9	8.7	7.8	7.3	6.7	22.0	25.1	27.9	33.0	34.0
Mid-Hill	52.5	47.7	45.5	44.3	43.0	99.0	116.8	137.3	167.0	186.0
Terai	37.6	43.6	46.7	48.4	50.3	127.8	192.7	253.6	330.0	392.0
Nepal	100.0	100.0	100.0	100.0	100.0	78.5	102.2	125.6	157.0	180.0

Source: FRAN, 2014a.

As can be expected, population density has increased. Today, it stands at 392 persons per square kilometer, which is more than double the national average of 180 (Table 3-2). All in all, this presents a very rapid increase in population pressure on cultivated land (which has only increased very slightly) as well as natural resources.

TABLE 3-3: POPULATION CHANGE IN TERAI REGIONS 1991-2001

Terai Regions	Population			Growth rate/year (%)	
	1991	2001	2011	1991-2001	2001-2011
Eastern	2,658,455	3,299,643	3,818,119	2.16	1.47
Central	3,033,351	3,934,080	4,707,517	2.60	1.81
Western	1,330,145	1,753,265	2,095,640	2.76	1.80
Mid-Western	930,330	1,230,869	1,470,472	2.80	1.79
Far Western	675,797	994,596	1,226,957	3.86	2.12
Terai	8,630,069	11,214,454	13,320,716	2.62	1.74
Nepal	18,491,097	22,736,934	26,494,504	2.25	1.40

Source: CBS, 1991, 2001, 2011b.

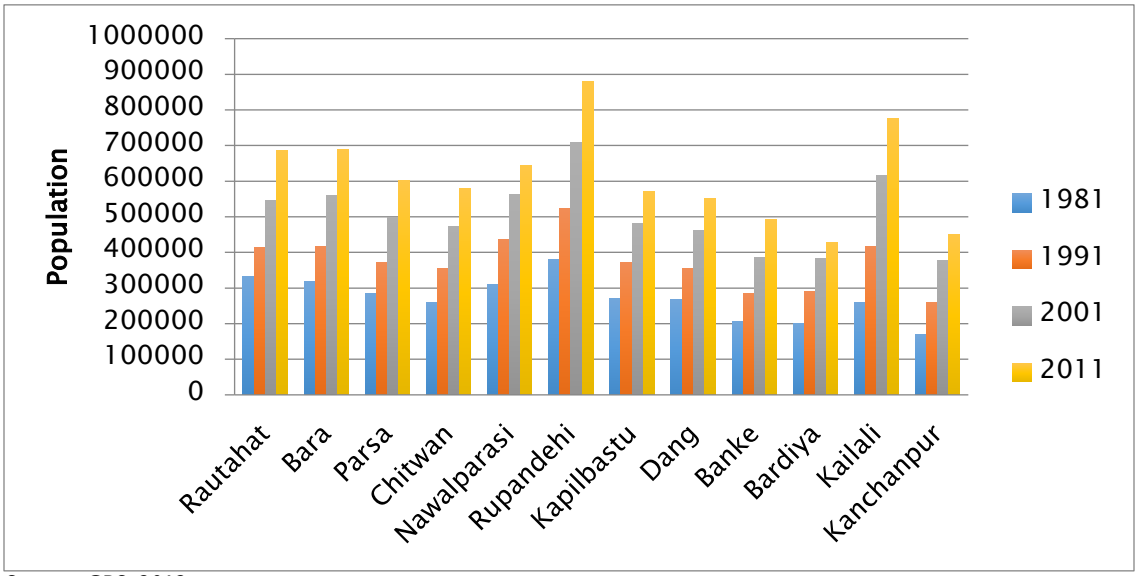
It is clear that population levels are highest in the Eastern/Central Terai gradually declining westwards (see Table 3-3). In total, the Eastern, Central, and Western parts of the Terai encompass about 80 percent of the entire Terai population. Even though the overall scale of in-migration has now slowed down, Far Western Terai remains an active site for new settlements. Here too, however, there has been a reduction in the population growth rate, from 3.86 percent in 1991–2001 period to 2.12 percent in 2001-2011, in line with national trends (see Table 3-3). Within the ERPAA districts, it is clear that Rupandehi and Kailali have the highest growth in population numbers over the last 30 years (Table 3-4 and Figure 3-1).

TABLE 3-4: POPULATION IN 2012 BY DISTRICT IN THE ERPAA

District	Population
Rautahat	686,722
Bara	687,708

Parsa	601,017
Chitwan	579,984
Nawalparasi	643,508
Rupandehi	880,196
Kapilbastu	571,936
Dang	552,583
Banke	491,313
Bardiya	426,576
Kailali	775,709
Kanchanpur	451,248
Source: CBS, 2013	

FIGURE 3-1: POPULATION IN ERPAA BY DISTRICT



Source: CBS, 2012.

3-2 HISTORICAL AND CURRENT MIGRATION FLOWS

The ever-present infestation of the Terai by malaria until the 1960s was a natural obstacle to significant settlement incursions. The region initially consisted of a few indigenous populations, mainly Tharus, who are said to be able to naturally resist malaria.[20] Mostly, their small communities settled in forests and close to water sources such as rivers. As a result, the area was heavily forested possessing a rich diversity of wildlife including tigers, elephants, rhinos, and deer. Historically, the forests played multiple roles in the political economic strategies of the numerous local kingdoms both in the Middle Hills and Indo-Gangetic plains at different periods. Once national unification took place in 1769, certain forests were protected, such as in Parsa, Chitwan, and Nawalparasi, as a natural defensive barrier to external colonial forces from the south; later, they became hunting grounds for the royal family. In others, territorial control and revenue generation was increased through conversion of remaining forests into agricultural land. The fertile soil and better rainfall in eastern Terai made it the primary focus of land acquisition (Dahal, 1978). While Middle Hills communities were reluctant to move into malaria-infested areas, those in India's densely populated neighboring Bihar and Bengal were attracted because of better land and water conditions (Stiller, 1976). Another major push factor at work was the severe famine in 1769–1770. After unification, numerous

[20] There is controversy as to whether Tharus were/are genetically resistant to malaria. Tharus did suffer from various health problems but it is not clear whether these were linked to malaria.

incentives were provided to contractors and potential migrants to encourage settlement and jumpstart production. Forest conversion as well as settlement on the vast wastelands in the Terai from large-scale deforestation for timber exports to East India Company, such as in Morang district, were promoted (Regmi, 1994).

The new migrants accumulated land at the cost of local *janajati* populations; many Tharus were dispossessed of their lands during this process and moved away from the border into the forests as they could not face the competition from the more entrepreneurial immigrants. This pattern of in-migration and political control explain the geography of forest loss (Adhikari & Dhungana, 2011; Ghimire, 1992; Michael, 2011). In particular, the southern parts of these districts became intensely deforested.

Within the ERPAA, the overall historical pattern involved settlement spreading from east to west. Bara, Parsa, and Rautahat districts were sometimes under the control of kings within present-day Nepal (like Licchavi until the seventh century) followed by an independent ruler. Later, they were under the kings in Champaran (present-day Bihar until the fourteenth century), and then under Muslim rule (fourteenth to fifteenth century). These were brought again into kingdoms within present day Nepal (Sen kings of Palpa), and then unified into Nepal (towards the end of eighteenth century). Until 1972, almost 90 percent of the people here spoke Bhojpuri language. Population structure has changed after many Middle Hills people migrated here settling near the northern forest fringes.

Moving westwards, Chitwan and Nawalparasi are largely in the inner Terai valley; they had dense forests until the 1960s. The hilly part of Chitwan was the main center of a highly marginal *janajati* group call Chepang who basically engaged in shifting cultivation. Chitwan plains were very sparsely populated until the mid-1950s when the malaria eradication program through the USAID-supported Rapti Valley Development Program started implementation. Tharus, Bote, and Majhi used to live near the forest and along the rivers. The hilly part of Nawalparasi has Magar communities while the plains are similar to Chitwan. Initially, Chitwan was called 16,000 Chitwan meaning that there were only 16,000 people here. In 1955, the population size was 40,000; by 2011 it had grown to 0.58 million. The migration of people into Chitwan led to large-scale dispossession of land from earlier settlers like Tharus, Bote, and Majhi. The dense forests here were also hunting grounds for the ruling class.

Once the eastern Terai was settled, deforestation moved westwards to Nawalparasi, Rupandehi, and Kapilbastu districts when resettlement was encouraged by Nepal's Rana rulers from 1890s to 1930s. Under the Ukhada system, the mostly Indian landlords were given title to large landholdings which they parceled out to Indian tenants. The same pattern of deforestation in the settled southern edge of the district also occurred here. Banke, Rupandehi, and Kapilbastu districts were similar to Bara-Parsa-Rautahat in terms of the constantly shifting nature of territorial control. They were sometimes within the control of Hill kingdoms of present-day Nepal like Palpa, Argakhanchi, and Gulmi; sometimes they were under the control of kingdoms now in India. Awadhi and Bhojpuri were the dominant languages in the past, but now Nepali is also emerging as a strong language because of migration of Hills people.

Dang District, considered as part of inner Terai, is unique in terms of its history, migration pattern, and resource endowment. This was initially a valley settled by Tharus, mainly Chaudhary Tharus. After Tharu kingship, the territorial control shifted to the Jumla kingdom, then to Salyan Kingdom, and finally unified into present-day Nepal. Accordingly, forestland and some cultivated land in Dang valley were given as grants (*birta*) to different ruling and elite families. Until the eradication of malaria, Tharus lived here permanently with the Hills people coming here only in winter to work and collect their share of production from the Tharus. When some Tharus were dispossessed of their land, they migrated to Bardia, Kailali, and Kanchanpur.

Going further westwards, the territorial disputes between India and Nepal resulted in many Muslim populations from Lucknow settling into those areas of Banke, Bardiya, Kailali, and Kanchanpur where heavy forests did not obstruct migration. This significantly affected the Tharus, particularly Rana Tharus, who had lived here as early settlers. The Terai land initially taken over by the East India Company during the Anglo-Gorkha war, after renegotiation, was handed back in 1816, except for four districts: Banke, Bardiya, Kailali,

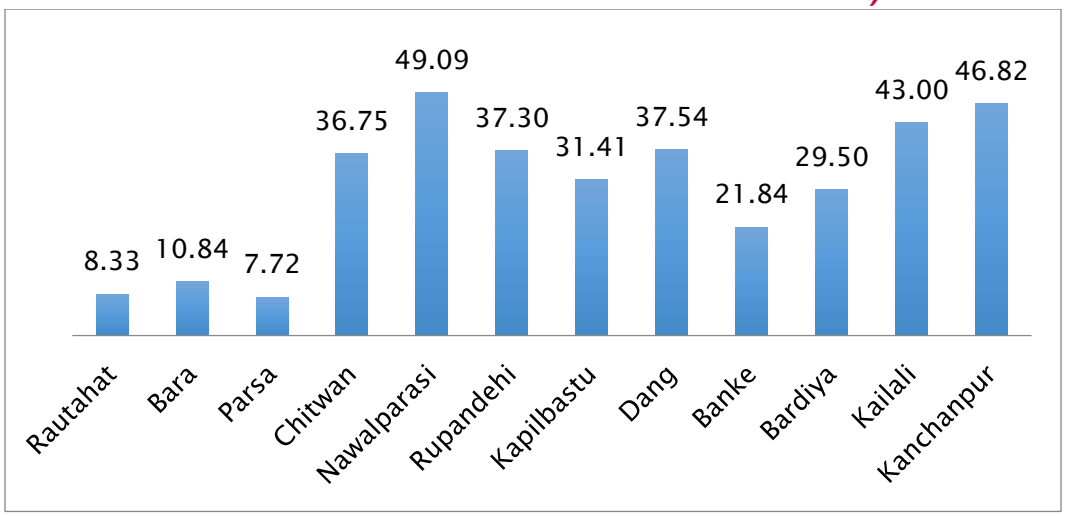
and Kanchanpur that were given to the Muslim rulers of Lucknow. Three decades later, these districts were returned in 1860 to Nepal (for helping against the 1857 Indian Mutiny) and became the *Naya Muluk* (new country). Half this land was granted by the King to Prime Minister Janga Bahadur and the remainder was divided among his six brothers (Adhikari, 2008). These forests were largely preserved because population densities were low on the Indian side of the border; today Suklaphanta Wildlife Reserve and Bardiya as well as Banke National Parks are located in these zones. Even when some refugees from Burma and landless migrants were settled in the southern belt, the forests were left intact. It was only after the 1960s, when migration from the Middle Hills commenced, that deforestation took place in these district's northern belts. In general, it is understood that Far Western Terai is about two centuries behind Eastern Terai in terms of settlement intensity and forest clearance.

In 1964, when citizenship was mandatory for owning land under the land reform program, many tenants became landless squatters leading to severe conflict, revolt and political unrest (Gaige, 2009). The remnants of these problems are still evident today. With the eradication of malaria, the biggest stream of migration was from hill regions into adjoining Terai districts with the largest movements occurring in the eastern Terai. This process resulted in communities settling adjacent to or into remaining forested areas. Over the last few decades, cross border migration from the south has also continued to take place, albeit at a lower level. All in all, a recent study revealed that 70 percent of Terai households had migrated to their present place of residence within the last 60 years (CSRC, 2011). In overall terms, the massive influx of Middle Hill communities has produced a new social mix and geography of settlement.

After the in-migration of communities from the Middle Hills, the next major phase of changes in the Terai's social constitution begins with outmigration to India as well as other countries further afield starting three decades ago. There remains some in-migration from the Middle Hills, but now many Terai youth (mostly male, but some female) have started to go overseas in search of employment. These countries include Malaysia, Qatar, Saudi Arabia and other Gulf Countries. Migration to India for work is still continuing, but now only draws poorer households who cannot afford to travel further afield.

The recent 2011 census reveals that the rate of such migration (measured as absentee for six months or more) ranges from slightly more than seven percent of households to 49 percent of households in the ERPAA districts (see Figure 3-2). Absentees made up 5.4% of the population, compared to a national average of 7.3 percent. Rautahat, Bara, and Parsa have low rates of migration because they have close contact with India where seasonal work (covering less than six months) is easy to find. This is coupled with the fact that these districts have an urban industrial base with wage employment. Of the roughly 420,000 people who have migrated for work, 87 percent are male and 13 percent female (Figure 3-2). The gendered pattern is mostly related to cultural differences where women's relative position in the family and society is weaker among Terai Madheshi households. The districts which send more women overseas are generally dominated by Middle Hill ethnic groups and are less restrictive in terms of gender work roles.

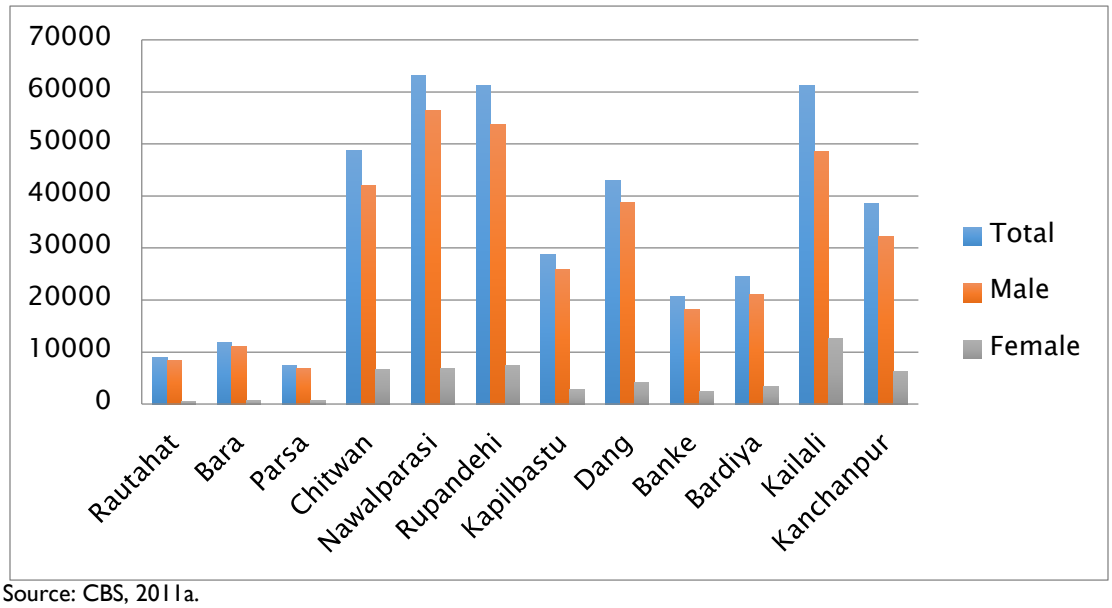
FIGURE 3-2: HOUSEHOLDS (%) PARTICIPATING IN FOREIGN MIGRATION (BASED ON ABSENTEE POPULATION FOR 6 MONTHS)



Source: CBS, 2011b.

Apart from labor migration to other countries, there is also a tendency by both richer and poorer households to migrate to urban areas for professional or seasonal wage labor opportunities. Among the wealthy, therefore, there is growing absentee landlordism because they are keen to retain their property as it retains a connection to land but also recent land price increases makes this an economically logical option. In the past, such lands were cultivated either by renting to tenants or by using bonded laborers (in Kapilbastu, Dang, Banke, Bardiya, Kailali, and Kanchanpur). As this practice has been almost abolished or reduced, landlords now have started growing tree plantations on their land. As a result, private forests have been significantly increasing across the ERPAA. These do not appear in government records because landlords do not get any extra benefit by registering their private forest with the government; rather it only invites various bureaucratic hurdles and fear of nationalization. Because of this new emerging tendency, there are increasing numbers of tree groves scattered amidst agricultural fields.

FIGURE 3-3: NUMBER OF PEOPLE (GENDER-DISAGGREGATED) BY DISTRICT WORKING IN OVERSEAS COUNTRIES IN 2011



Source: CBS, 2011a.

In the ERPAA, such out-migration and related remittances have played a major role in bringing about changes in natural resource use patterns. Not only are there rural labor shortages as young people go abroad, but remittances have helped in reducing demand for forest products. For example, remittances have enabled the purchase of LPG gas cylinders for cooking. As road networks have expanded in rural areas, LGP gas cylinders can readily be supplied to every household. The practice of making dung-cakes or using firewood has therefore been reduced. While house construction has increased, these are made with cement rather than timber.

Lastly, the current pattern of migration and its gendered dimensions have important implications for who is actively involved in forest governance and management within villages. There has been a feminization of both agricultural and forest production; increasingly, women are more active in forest governance and decision-making. Although no studies of these transformations have been carried out; anecdotal information indicates that the gender constitution of CFUG executive committee is now reflecting more women membership.

3-3 TERAI SOCIO-POLITICAL CONTEXT:

Culturally, the Terai is distinctly different from the Middle Hills. It not only has a very different range of *janajatis*, but also has been heavily dominated by varied Hindu caste groups whose religious traditions, languages, social lifestyle and customs, as well as food and clothes have clear affinities with people living in the Indo-Gangetic plains of India. Terai plains people often speak a range of languages prevalent in this border zone including Maithili, Bhojpuri, Awadhi, Urdu, Hindi, and Bengali and dialects of these are also used by *janajati* groups. With the in-migration of Middle Hills people into the Terai from the 1960s, however, there has been a qualitative shift in the Terai's social constitution.

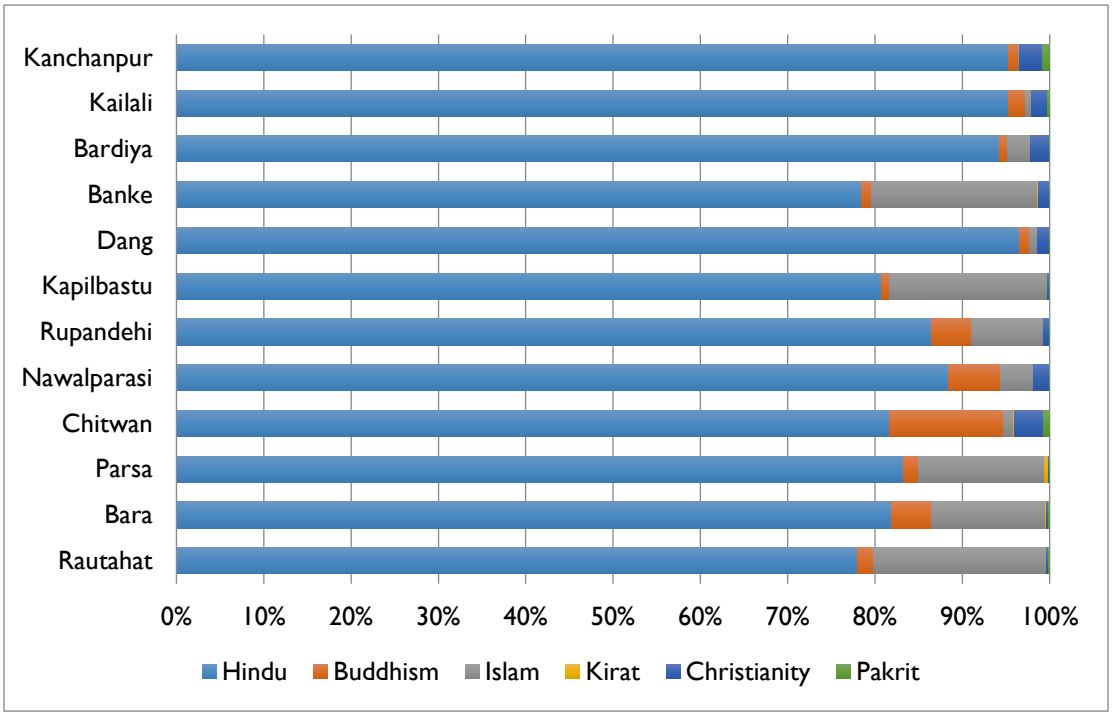
Within this unfolding context, the term Madheshi is used to politically designate the indigenous "non-hill origin" inhabitants of the Terai. This term "madheshi" is very broad encompassing a wide range of *janajatis* such as the Tharus, Mushahars, Botes, Rajbanshis, Meches, Koches, Dhimals, and as well as various Hindu caste groups with closer affinities to cultures across the border in India. A number of *janajati* groups have an intimate link with forests and their resources such as the Raute and Chepang. The Raute, known as the "kings of the forest", are a hunter-gatherer peoples who move nomadically through forests hunting animals, as well as collecting tubers and plants in Mid and Far-Western Nepal. Chepang are foragers who live in rock-caves or temporary huts near forests around Chitwan and elsewhere. They collect wild tubers, fruits, and vegetables from the forests as well as grow millet and corn. They often hold tree tenure rights to specific trees of value to them (such as the butternut [*churi*]). Ninety percent of them live below the poverty line.

Nationally, the term Madheshis has become an important political label for garnering rights and political authority for those in the Terai who have historically been politically marginalized within the Kathmandu-based national political hierarchy. The Madheshis were able to get support from the Maoist movement (1996–2006) and became a platform for launching new political parties and an overall push for stronger rights. Not only do Madheshis consider they have little access to political positions and bureaucracy, but also the government's land reform program in 1964 was seen as a way to transfer land from the Madheshi community to the new Middle Hill migrants. Many Madheshis without land were unable to get citizenship certificates which opened the door to new opportunities for employment and economic growth. There are, as a result, two primary axes of conflict within the Terai: firstly, between the new Middle Hill immigrants and Madheshis, and then between different groups within the label Madheshis such as between Tharus and Hindu groups. Depending on the cultural geography of settlement and its proximity to present-day forest resources, these tensions clearly play out within the politics of forest tenure regimes across the Terai.

In terms of caste and ethnic groups, there is also wide variation from district to district. Tharus are one of the *janajati* groups that are present in all the districts; in Bardiya, they are in the absolute majority (53.0% of population). Prior to 1960, they were the main residents in districts like Chitwan (from 90% to 11% of the population today), Nawalparasi, Dang, Bardiya, Kailali, and Kanchanpur. Today, Hill Brahmin (28.56%) and Chettri (11.36%) dominate Chitwan. Hinduism is the predominant religion in the Terai with others forming small individual sectors (Figure 3-4). As a single religious-identity group, Musalmans (or Muslim) are a major

group in districts like Rautahat (19.73% of population), Bara (13.06%), Parsa (14.51%), Kapilbastu (18.16%), and Banke (18.99%). This is the legacy of political control from India's Muslim kingdom in Lucknow. Importantly, there is also a strong presence of *dalit* caste (both Terai *dalit* and Hill *dalit*) in all the districts.[21]

FIGURE 3-4: DISTRIBUTION OF RELIGIONS IN ERPAA DISTRICTS



Source: CBS, 2011a.

TABLE 3-5: MAJOR ETHNIC AND CASTE GROUPS IN THE ERPAA DISTRICTS

Caste	% of population	Caste	% of population	Caste	% of population
Rautahat		**Bara**		**Parsa**	
Musalman	19.73	Musalman	13.06	Musalman	14.51
Yadav	12.23	Yadav	10.51	Kurmi	8.41
Kurmi	5.68	Tharu	10.47	Tharu	7.59
Teli	5.61	Kanu	4.80	Yadav	6.64
Kanu	4.50	Koiri/Kushwaha	4.46	Kanu	5.75
Tharu	4.49	Chamar/Harijan/Ram	4.39	Chamar/Harijan/Ram	4.72
Chamar/Harijan/Ram	3.84	Brahmin Hill	4.32	Teli	4.14
Kalwar	3.29	Teli	4.12	Koiri/Kushsawa	3.16
Mallaha	2.94	Tamang	4.04	Chettri	2.87
Dushad/Paswan/Pasi	2.88	Kurmi	3.94	Dusadh/Pasawan/Pasi	2.68
Chitwan		**Nawalparasi**		**Rupandehi**	
Brahmin Hill	28.56	Brahmin Hill	17.49	Brahmin Hill	15.93
Chettri	11.36	Magar	17.46	Magar	10.71

[21] *Dalits* are a marginalized and typically poor low-caste Hindu group.

Caste	% of population	Caste	% of population	Caste	% of population
Tharu	10.92	Tharu	15.12	Tharu	9.63
Tamang	7.97	Chettri	6.21	Musalman	8.23
Gurung	6.75	Kami	4.16	Yadav	7.40
Newar	5.22	Musalman	3.76	Chettri	6.98
Chepang/Praja	5.00	Yadav	3.01	Chamar/Harijan/Ram	3.72
Kami	4.88	Gurung	2.42	Kami	3.07
Magar	4.83	Kumal	2.23	Lodh	2.92
Damai/Dholi	2.09	Newar	1.95	Kewat	2.52
Kapilbastu		**Dang**		**Banke**	
Muslims	18.62	Tharu	29.52	Muslim	18.99
Tharu	12.26	Chettri	24.91	Tharu	15.65
Yadav	10.14	Magar	13.60	Chettri	14.76
Brahmins Hill	8.54	Brahmin-Hills	10.25	Bramin-Hill	6.65
Kurmi	6.25	Kami	6.38	Magar	5.70
Chettri	4.10	Damai/Dholi	2.69	Kami	4.72
Dusadh/Pasawan/Pasi	3.81	Dasnami/Sanyasi	2.34	Thakuri	3.65
Chamar/Harijan/Ram	3.69	Sarki	1.89	Kurmi	2.23
Magar	3.55	Kumal	1.53	Chamar/Harijan/Ram	1.88
Kahar	3.05	Yadav	1.47	Damai/Dholi	1.49
Bardiya		**Kailali**		**Kanchanpur**	
Tharu	53.00	Tharu	41.53	Chettri	28.93
Chettri	11.45	Chettri	21.13	Tharu	25.68
Brahmin Hill	8.72	Brahmin Hill	12.41	Brahmin Hill	15.96
Kami	5.72	Kami	8.39	Kami	7.72
Magar	2.94	Thakuri	3.96	Thakuri	5.62
Muslim	2.60	Magar	3.75	Magar	2.83
Thakuri	2.34	Damai/Dholi	2.22	Damai/Dholi	2.30
Yadav	1.89	Sarki	0.94	Sarki	1.60
Damai/Dholi	1.80	Muslims	0.64	Dasnami/Sanyasi	1.47
Mallaha	1.10	Dasnami/Sanyasi	0.55	Tamang	1.42

Source: CBS 2011b, CBS 2013.

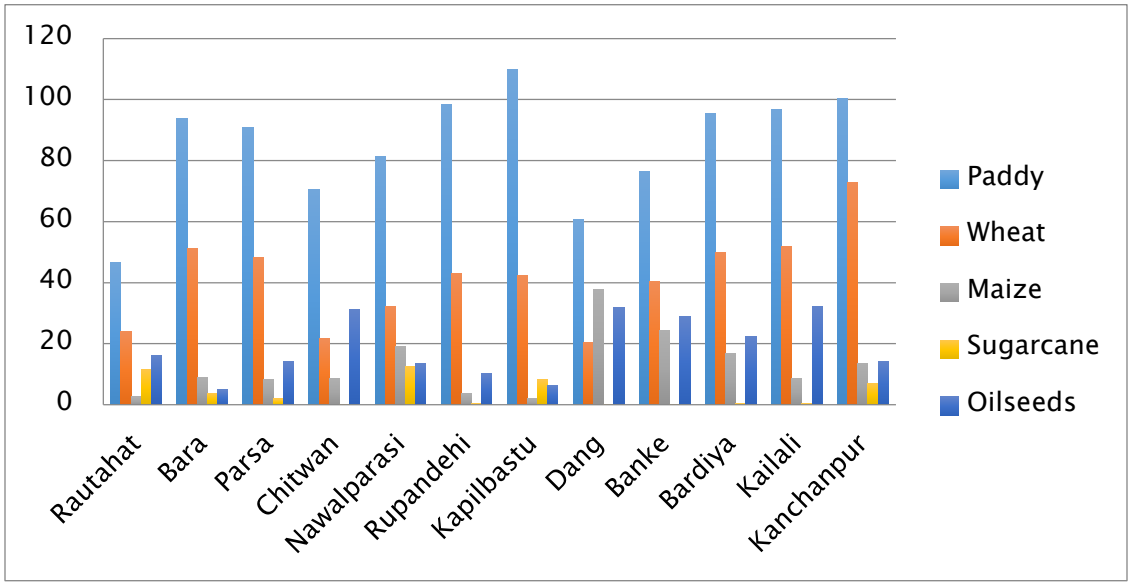
3-4 TERAI ECONOMIC CONTEXT: TRANSFORMATION AND FLUX

The Terai region is the most productive in the country both agriculturally and industrially. The Terai has the most fertile agricultural land (being flat plains) and dense forests. Key industrial centers are located in urban areas such as Birgunj (Parsa), Amlekhgunj (Bara/Parsa), Narayangarh/Bharatpur (Chitwan), Bhairahawa (Rupandehi), Nepalgunj (Banke), and Dhangadhi (Kailali). Recently, new industries such as cement production have been emerging in Dang. Altogether, this has led to economic prosperity generating employment and income opportunities. However, even though the Terai is called the "bread basket" of the country, these opportunities have not been sufficient to keep pace with the growing population's basic food needs partly due to a shift towards cash cropping.

Fertile land with irrigation facilities permits the cultivation of a wide variety of crops in the Terai. The main crops are paddy, maize, and wheat grown with sugarcane, oilseeds, vegetable, fruit, tobacco and other crops (see Figure 3-5) although districts such as Dang with less flat land cannot support high levels of paddy cultivation. In some districts, as a result of double paddy cropping, the percentage of area devoted to paddy exceeds 100 percent. Chitwan and Nawalparasi have seen a shift towards dairy, poultry, and banana production, as well as niche production such as agro-forestry and organic farming due to its proximity to Kathmandu. Although traditionally sugarcane was grown in Rautahat and Bara (due to presence of sugar factories in Birgunj), now districts like Kailali and Kanchanpur are joining them. In overall terms, such a move has led to more intensive high-profit production on small landholdings. This has not only eased the pressure and dependency on forest conversion but even led to the popularity of tree planting on farms. An increasingly important factor in agricultural production is labor shortage due to both migration as well as increasing farm wage rate. This is leading to more acreage being devoted to annual crops that require less labor. For example, in Chitwan, there is growing interest in banana cultivation, and in Kanchanpur, sugarcane.

On average, the ERPAA districts produce enough food with some surplus for supplying other deficit districts. Even so, there are food insecure households where production only lasts for four to six months (Joshi & Bhatta, 2011). In the BZs of the ERPAA PAs, this situation of insecurity has also been made worse by wildlife depredation on crops and livestock although it is not known exactly how much is lost.

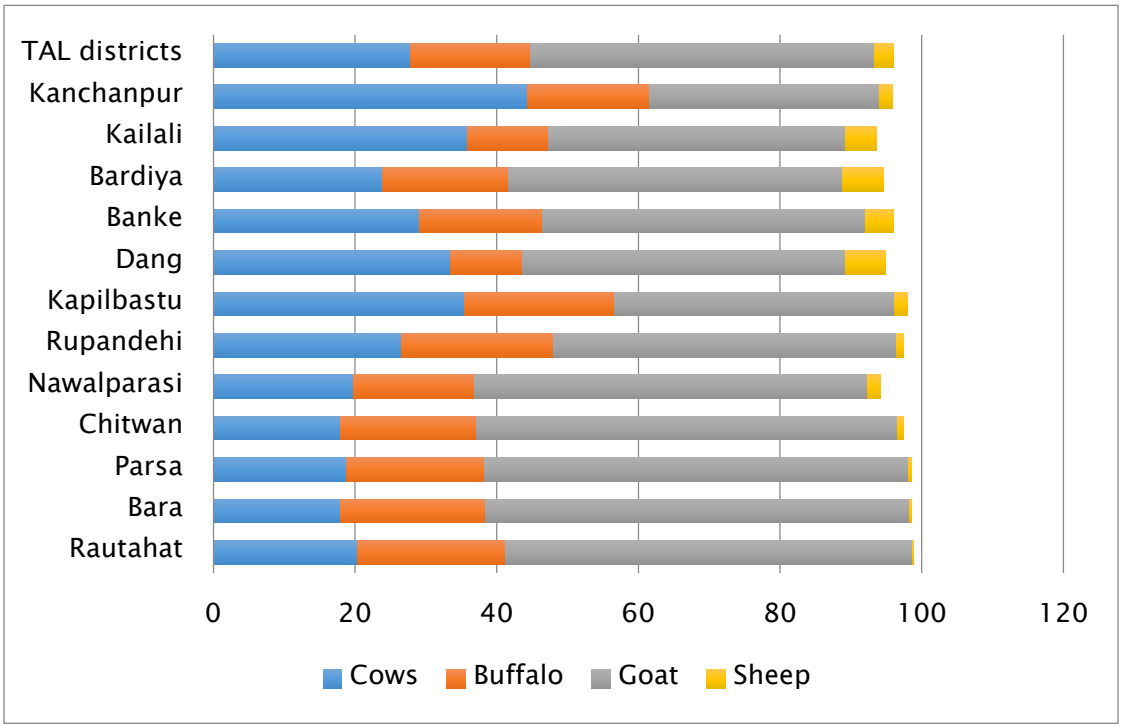
FIGURE 3-5: PERCENT OF TOTAL CULTIVATED FARM AREA DEVOTED TO MAIN CROPS WITHIN ERPAA DISTRICTS IN 2012/13



Source: CBS, 2013.

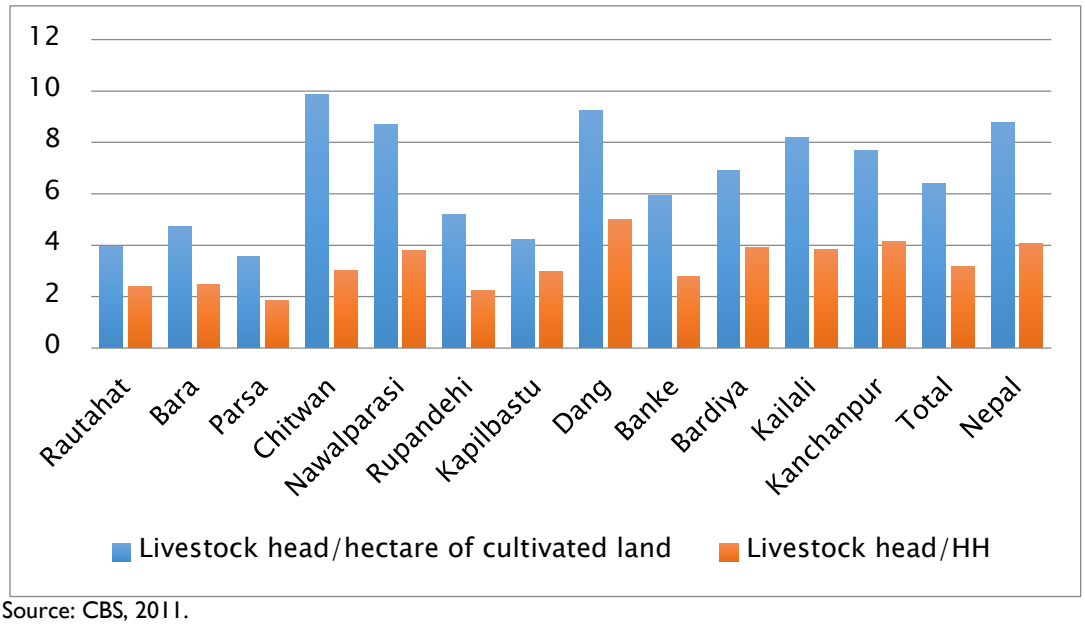
Livestock is another important component of the farming system. In the ERPAA, goats comprise almost 50 percent of the livestock population, followed by cattle (28%) and buffalo (17%). Sheep comprised only about 3 percent of the total livestock population (see Figure 3-6). The pattern, however, varies from district to district. In general, there are more cows in Far and Mid-Western districts (Kanchanpur at almost 45%, Kailali, Kapilbastu and Dang), with more goats in Central and Western districts (Bara, Parsa, Rautahat, Chitwan and Nawalparasi). This variation is related to cultural practices as well as the type and level of natural resources available such as grazing area and grass/fodder. This level is broadly comparable with national trends. Within the ERPAA area, Dang, Kailali, and Kanchanpur have both high livestock density in terms of cultivated area, as well as per household.

FIGURE 3-6: COMPOSITION (%) OF LIVESTOCK POPULATION BY ERPAA DISTRICT



Source: CBS, 2011a.

FIGURE 3-7: LIVESTOCK POPULATION BY ERPAA DISTRICT IN 2011/12



Source: CBS, 2011.

The field research indicated that livestock had some impact on forests and national parks. The case of Suklaphanta Wildlife Reserve in Kanchanpur is particularly notable where domesticated cattle were permanently let loose in the park by those evicted. Park authorities have found it hard to manage the roughly 4,000–5,000 such cattle roaming in the fringes of the park with some even residing in the park's core. These grazing animals destroy tree saplings; the problem is complicated by Hindu custom that prevents the killing of such cattle. In general, though, there is a move among many households to reduce the number of

unproductive animals and keep a few improved breeds instead. Even so, there are groups of people (for example Gujjars in Nawalparasi, or Yadavs in Kanchanpur) whose traditional occupation is 'livestock raising'; although poor they still prefer to maintain larger herds of cattle even if they are not economical to maintain. This increases grazing pressures on forests.

3-5 POVERTY AND HUMAN DEVELOPMENT

The ERPAA districts show a wide variation in poverty status and human development condition. The national census data on poverty status (which is based on expenditure patterns) indicates there has been a notable worsening of poverty between 2001 and 2011. In terms of national poverty ranking, seven of the 12 ERPAA districts went down in ranking indicating a worsening status (see Table 3-6). Chitwan stands out as the least affected by poverty and is among the top developed districts in Nepal. Rautahat fell from the "high" into the "low" prosperity group over this period while Kapilbastu and Kanchanpur dropped from the "medium" to the "low" group. Only Bardiya which was in 2001 "low" group in 2001 moved upwards to the "medium" level. Rautahat's poverty can be explained due to its lower agricultural production capacity, and Chitwan's affluence explained by its proximity to Kathmandu as a market for its products. In general, the worsening poverty situation indicates that will be greater pressure on forests to meet basic subsistence needs in terms of fuelwood, fodder, and timber.

TABLE 3-6: POVERTY RATE IN ERPAA DISTRICTS IN 2001 AND 2011

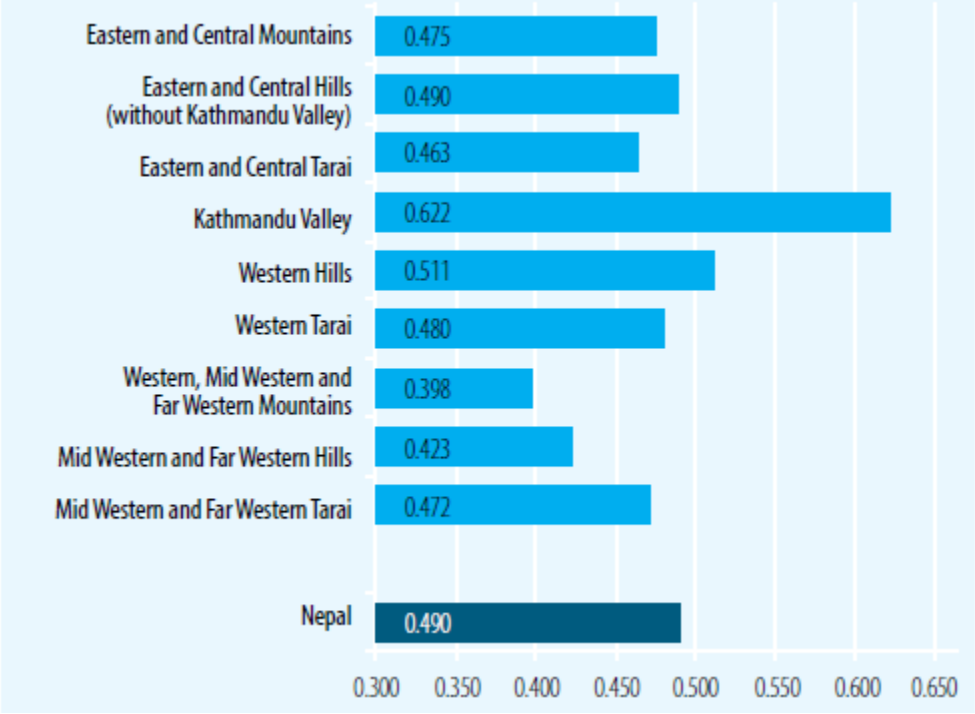
The poverty rate represents the percentage of people below the poverty line. The ranking is carried out across 75 districts with 1 indicating a district with lowest poverty rate.

Districts	2001			2011		
	Poverty rate (%)	Rank	Prosperity group	Poverty rate (%)	Rank	Prosperity group
Rautahat	30.2	19	High	33.4	54	Low
Bara	26.9	14	High	29.9	49	Medium
Parsa	23.5	10	High	29.2	48	Medium
Chitwan	11.9	5	High	8.9	5	High
Nawalparasi	36.3	28	Medium	17.0	19	High
Rupandehi	30.0	18	High	17.3	20	High
Kapilbastu	40.1	36	Medium	35.5	57	Low
Dang	42.9	46	Medium	25.1	32	Medium
Banke	41.2	39	Medium	26.4	41	Medium
Bardiya	44.9	51	Low	28.7	45	Medium
Kailali	50.4	62	Low	33.6	55	Low
Kanchanpur	42.4	41	Medium	31.4	51	Low
Nepal	30.8	-	-	25.2	-	-

Source: CBS 2011b.

The Human Development Report 2014 (utilizing the Human Development Index which includes measures of education and health status) developed by the government presents a somewhat different picture (Table 3-7). Across the full Terai, there is no simple correlation between economic standing and HDI: Eastern and Central Terai (with HDI of 0.463) stands at a lower rank than Western Terai (HDI 0.480) as well as Mid-Western and Far-Western Terai (HDI 0.472) (Figure 3-8). There is a perception that the Eastern and Central Terai have better agricultural and industrial production as well as access and public investments. However, these rankings indicate that the human development levels and household well-being are not commensurate with its economic position. Education and health need attention, and in particular the larger *dalit* population in these areas.

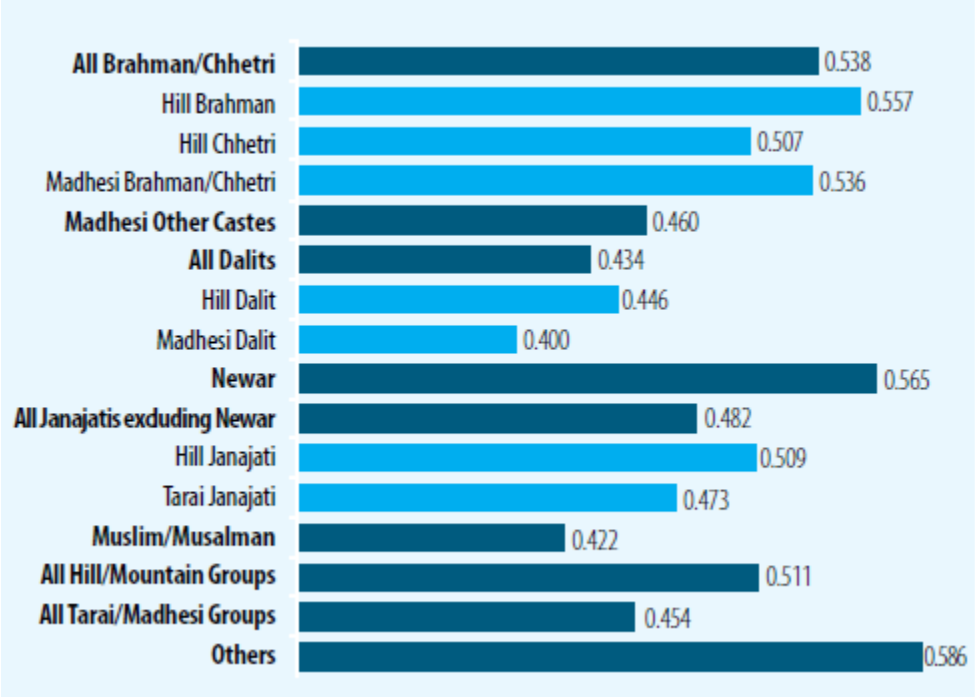
FIGURE 3-8: HDI VALUES FOR THE NINE ECO-DEVELOPMENT REGIONS IN 2011



Source: NPC and UNDP, 2014.

Furthermore, the breakdown of HDI values by major caste and ethnic groups indicates that Madheshi *dalits* have the lowest rank with HDI of 0.400. Muslims, who are more predominant in the Terai, have the second lowest ranking. Terai *janajati* (HDI 0.473) fare worse than Middle Hills *janajati* (HDI 0.509). Whether in Terai or Middle Hills, Brahman and Chhetri groups as well as Newars have the highest rankings. Finally, All Terai/Madheshi groups have lower HDI than All Hill/Mountain groups.

FIGURE 3-9: HDI VALUES BY MAJOR CASTE AND ETHNIC GROUPS, 2011



Source: NPC and UNDP, 2014.

Although in the ERPAA, Chitwan occupies the "high" (first rank) HDI group, Kailali occupies the second rank, which stands in stark contrast to its low poverty rate ranking above. Among the remainder, there is little correlation between their HDI ranking and poverty rate ranking. Only Rautahat sits within the lowest rank in both.

TABLE 3-7: HUMAN DEVELOPMENT INDEX (HDI) IN ERPAA DISTRICTS IN 2014. RANK 1 INDICATES HIGH HUMAN DEVELOPMENT STATUS, AND 5 THE LOWEST

Districts	HDI	HDI rank	Districts	HDI	HDI rank
Rautahat	0.386	5	Kapilbastu	0.432	4
Bara	0.457	3	Dang	0.485	4
Parsa	0.464	3	Banke	0.475	4
Chitwan	0.551	1	Bardiya	0.466	4
Nawalparasi	0.493	3	Kailali	0.460	2
Rupandehi	0.498	3	Kanchanpur	0.475	3
Nepal	**0.490**				

Source: NPC and UNDP, 2014.

While there has been insufficient analysis of these poverty and HDI rankings in the Terai, it is likely that conflict within the Terai has made for an insecure investment environment leading to the departure of many entrepreneurial groups abroad. Chitwan, on the other hand, has an overall high education level, very high level of remittances, strong tourism economy, robust agro-enterprises sector in a fertile region, and good transportation accessibility.

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