

REDD+, payment for ecosystem services, and integrated water resources management in Nepal

Synergies, opportunities,
and challenges



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Production team

Carmen Wickramagamage (Consultant editor)

Samuel Thomas (Senior editor)

Rachana Chettri (Editor)

Dharma R Maharjan (Graphic designer)

Photos

Cover - Nabin Bhattacharai

Nabin Bhattacharai - pp ii, 8, 12, 16, 19, 27, 29, 30

Bhaskar Singh Karky - p23

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WORKING PAPER

REDD+, payment for ecosystem services, and integrated water resources management in Nepal

Synergies, opportunities,
and challenges

Authors

Rommel Arboleda¹, Nabin Bhattarai², Kai Windhorst¹,
and Bhaskar Singh Karky²

¹ Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

² International Centre for Integrated Mountain Development (ICIMOD)

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References

Abbreviations and acronyms

CBFM	Community-based forest management	LU-LUC	Land-Use and Land-Use Change
CBIs	Community-based institutions	MEA	Millennium Ecosystem Assessment
CBUGs	Community-based user groups	MEWRI	Ministry of Energy, Water Resources, and Irrigation
CFUG	Community forest user group	MBI	Market-based instruments
COP	Conference of the Parties	MOFE	Ministry of Forest and Environment
CWUG	Community water user group	MOFSC	Ministry of Forest and Soil Conservation
DFO	District Forest Office	MRV	Monitoring, reporting, and verification
DSCWM	Department of Soil Conservation and Watershed Management	NTFP	Non-Timber Forest Products
ER	Emission Reduction Programme	NPC	National Planning Commission
ER-PD	Emission Reduction Programme Document	NRC	National REDD Center
ER-PIN	Emission Reduction Programme Idea Note	NRM	Natural Resources Management
ES	Ecosystem services	NRS	National REDD+ Strategy
FCPF	Forest Carbon Partnership Facility	PES	Payment for ecosystem services
FRL	Forest Reference Level	REDD+	Reduce Emissions from Deforestation and Forest Degradation while (+) fostering Conservation, Sustainable Forest Management, and Incentive Enhancement of Carbon Stocks
GHG	Greenhouse gases	R-Package	REDD Readiness Package
GoN	Government of Nepal	R-PP	Readiness Preparation Proposal
ICIMOD	International Centre for Integrated Mountain Development	SFM	Sustainable Forest Management
IES	Incentive for Ecosystem Services	UNFCCC	United Nations Framework Convention on Climate Change
IPCC	Intergovernmental Panel on Climate Change	UNCED	United Nations Conference on Environment and Development
IWRM	Integrated water resources management	WECS	Water and Energy Committee Secretariat
		WSSD	Johannesburg World Summit on Sustainable Development WSSD

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Executive summary

Historically, Nepal's natural resources have been overexploited and overused, the repercussions of which have been aggravated by extreme poverty, social inequalities, poor or absent governance structures and policies, corruption, and natural disasters and climate change, among other factors. Over time, the country has undergone many different processes of decentralization of its natural resources governance, paving the way to the establishment of new government agencies, policies, roles and responsibilities, as well as civil society organizations, national and private industries, and public-private partnerships. As a result, several natural resource management frameworks and schemes are being developed and implemented, including reduction of emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks (REDD+), payment for ecosystem services (PES), and integrated water resources management (IWRM).

The focus of the study is an analysis of the historical evolution and status of REDD+, PES, and IWRM in Nepal. The objective is to identify opportunities to strengthen linkages between the three natural resources management frameworks in the context of Nepal. By analyzing the documented development of REDD+ and PES practices related to IWRM in Nepal, it would be possible to understand the specific country context, opportunities, challenges and barriers towards a potential linkage between the aforementioned NRM frameworks.

Natural resource management frameworks in Nepal are in a very early stage of development. In recent decades, the country has gone through a major political transition, switching from a monarchy-based governance structure to a federal system. The political instability and the very strict top-down government approach have been two of the critical issues with regard to the appropriate development and implementation of NRM frameworks, mechanisms, and tools in Nepal. Additionally, the lack of clear and defined roles from government institutions, plus the absence of a defined policy and legislative framework have set back NRM development in Nepal as it has promoted a segregated coordination of horizontal and vertical institutional relations.

Nevertheless, the country's great success in community forestry management has been taken as an example, internationally, of how communities can be an essential pillar in promoting sustainable development. Communities are one key element in sustainable development but so are government agencies, donors, NGOs, and research organizations which are essential to promoting an integrated and participatory approach by linking upstream and downstream communities to incentivize ecosystem service provisions. REDD+, PES, and IWRM have the potential to benefit from each other's development and implementation pathways. However, if political will is lacking to work on these topics or capacity building and knowledge supported with context-specific information and analysis, or accountability and transparency systems, or the willingness to work for the people and their livelihoods, then no natural resource management framework would be able to bring equitable benefit sharing and sustainable development.

Introduction

The implementation and development of natural resource management frameworks – such as REDD+, PES, and IWRM, put forward several opportunities to strengthen sustainable development in Nepal. Nonetheless, there are also challenges that need to be addressed and barriers to overcome.

KEY MESSAGES

Natural resources management (NRM) frameworks in Nepal – such as REDD+, PES, and IWRM, have individual strengths and opportunities based on their own management guidelines and protocols, which are targeted at each and every level of a country's governance structure. However, the bigger challenge facing these NRM frameworks is how to devise innovative plans by building on shared agendas while ensuring inter-dependencies on ecosystems and guaranteeing the effectiveness of projects and programmes by focusing on results.

Nepal is a country where the landscape has been shaped by its people and the traditional knowledge carried with them. This South Asian country remains as multicultural as it was during the Gorkha Empire and its topography is as diverse as its people. But, while Nepal's natural resource management (NRM) has depended on its communities and dwellers, the profits and revenues have been mishandled and monopolized by monarchies, aristocratic rulers, and, democratic governments. Historically, Nepal's natural resources have been overexploited and overused, the repercussions of which have been aggravated by extreme poverty, social inequalities, poor or absent governance structures and policies, corruption, and natural disasters and climate change, among other factors. Over time, the country has undergone many different processes of decentralization of its natural resources governance, paving the way to the establishment of new government agencies, policies, roles and responsibilities as well as civil society organizations, national and private industries and public-private partnerships.

In parallel with Nepal's social and economic development process, different natural resource management frameworks and schemes too are being developed and implemented, such as reduction of emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks (REDD+), payment for ecosystem

services (PES), and integrated water resources management (IWRM).

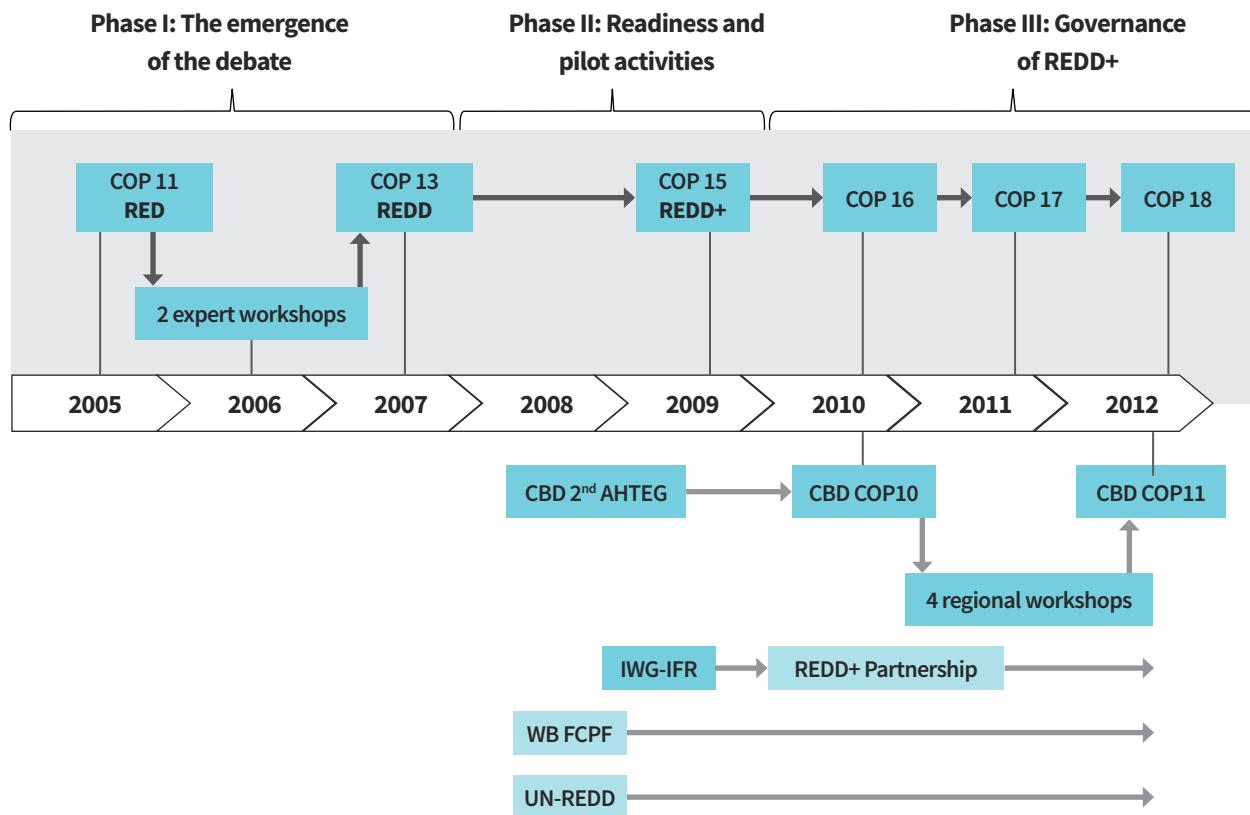
The history of REDD+ dates back to the Conference of the Parties (COP) 11 held in Montreal in 2007. But, already in 1997, the Kyoto protocol had recognized the potential of forests to act as GHG sinks (Figure 1). In 2007, during COP 13 (the Bali Action Plan), the Intergovernmental Panel on Climate Change (IPCC) presented its Fourth Assessment Report where it was mentioned that 17.4% of all the GHG emissions came from the forestry sector (Metz and IPCC 2007); the concept of REDD formally took root. Subsequently, during COP 15, where the Copenhagen Accord was reached, the need to “provide incentives for REDD+ by enabling the mobilization of financial resources from developed countries” was recognized (Park et al. 2013). The REDD+ mechanism has since then been widely applied in different developing countries, including Nepal.

REDD+ is an international framework and financing mechanism (Figure 2) negotiated under the United Nations Framework Convention on Climate Change (UNFCCC) that incentivizes developing countries

either to: i) reduce greenhouse gas (GHG) emissions from deforestation and forest degradation; or, ii) promote the removal of CO₂ by maintaining or increasing forest land (UNFCCC). It also promotes the development of co-benefits that include biodiversity conservation, climate change adaptation, low-emission development, and strengthening forest peoples’ rights and livelihoods by providing additional incentives for sustainable land and forest management, as well as for investments in land-use governance, land tenure and land-use planning, and forest-monitoring capacity (EU REDD Facility, 2017).

While the seed idea for REDD+ was first planted in 1997, the paradigm of ecosystem services can be traced back to the late 1970s, when the scientific community stimulated public interest in biodiversity conservation by bringing to light the idea of beneficial ecosystem functions that could be treated as services within a market (Gómez-Baggethun et al. 2010). Following the Brundtland Report (1987) and the Rio Earth Summit (1992), the debate on conservation and poverty alleviation instruments started to focus on a new conceptual framework of “payments for

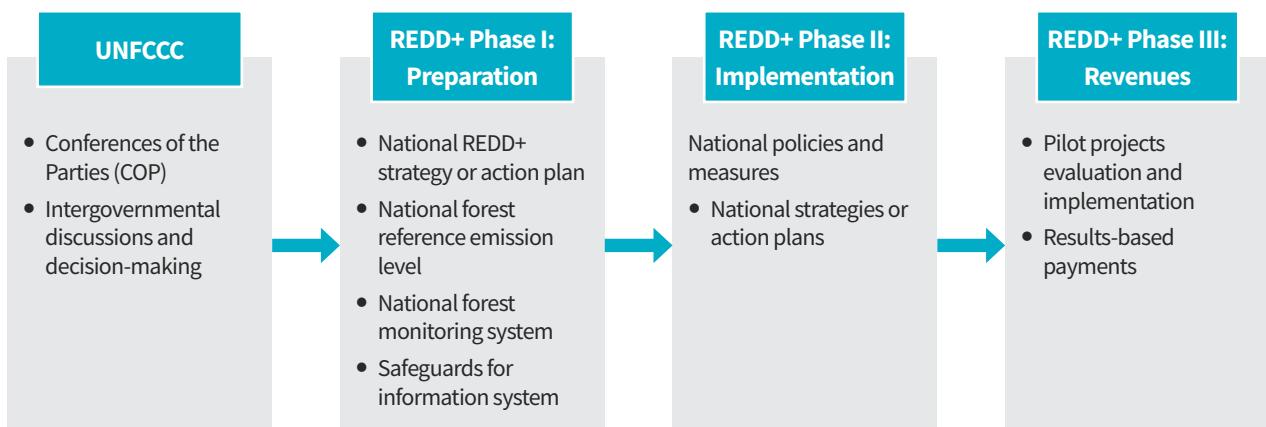
FIGURE 1 REDD+ TIMELINE



Source: From RED to REDD+ (Pistorius, 2012)

FIGURE 2

REDD+ FRAMEWORK AND GENERAL STRUCTURE



environmental services” – a term that has its origins in a World Bank Report (2000) detailing a new policy framework in Costa Rica called ‘Pagos por Servicios Ambientales’ translated into English as ‘Payments for Environmental Services’ (Derissen and Latacz-Lohmann, 2013). However, it was only in 2005 that the Millennium Ecosystem Assessment (MEA) set the field for the ecosystem services paradigm to be devised within the global policy agenda. The MEA establishes a very generic definition of ecosystem services (ES) as the “benefits people obtain from ecosystems” (Millennium Ecosystem Assessment, 2005), which can be categorized as supporting, provisioning, regulating, and cultural.

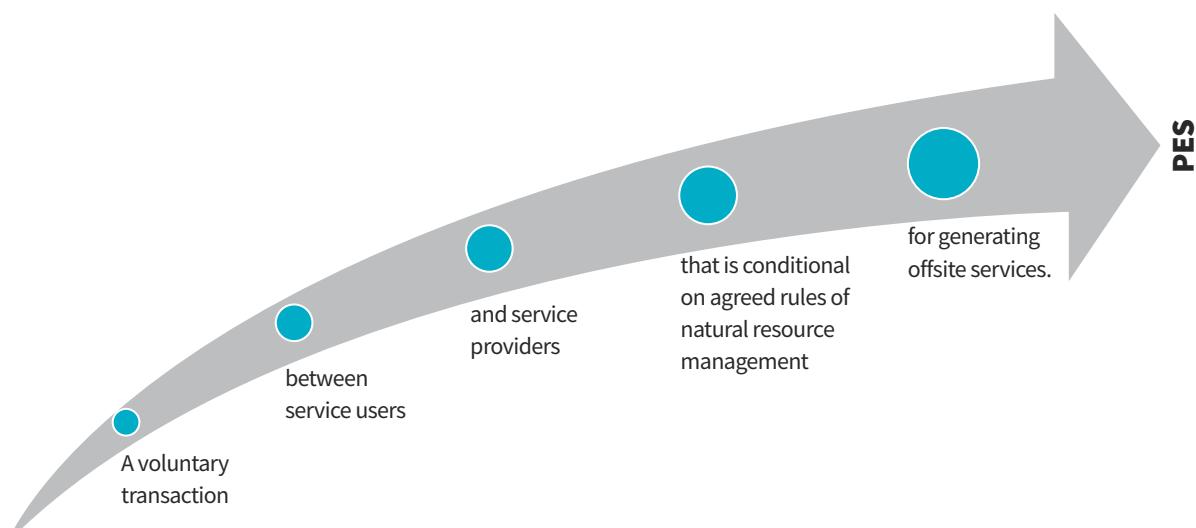
Ecosystem services are now increasingly coming within the scope of economic decision-making

through the widespread promotion of market-based instruments (MBIs) for conservation. MBIs usually involve pricing environmental attributes that benefit people or ecosystem services, with the expectation of achieving economic efficiency in natural resource management schemes (Waylen and Martin-Ortega, 2018). Such instruments include carbon trading, wetland banking, biodiversity offsetting and PES. The credit for developing a set of globally accepted and revised criteria that best describes payments for environmental services goes to Wunder in his 2015 publication titled “Revising the Concept of Payments for Environmental Services”. His definition of PES is captured in Figure 3.

PES schemes have been gaining interest as mechanisms to improve conservation and to achieve

FIGURE 3

SVEN WUNDER'S DEFINITION CRITERIA FOR PAYMENTS FOR ENVIRONMENTAL SERVICES (PES) SCHEMES

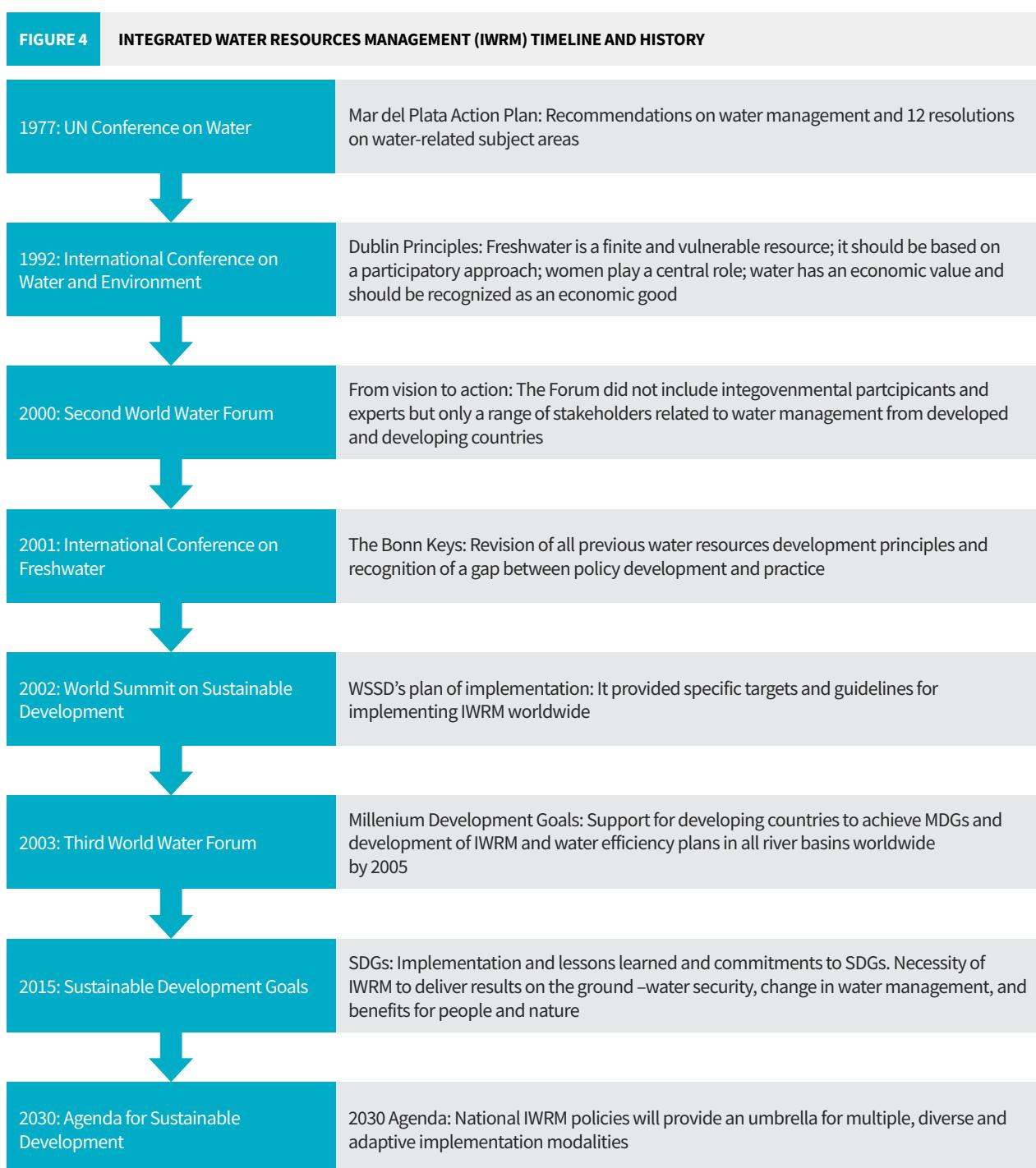


Adapted from Wunder (2015)

sustainable development pathways. Water-related ES and their upstream-downstream linkages are often used to illustrate the principles of the PES framework, especially when payment for watershed services are a result of a transfer of resources to upstream communities and landholders for the protection, conservation, and restoration of watersheds that provide a freshwater supply to downstream communities (Kosoy et al. 2007).

In this sense, another natural resource management framework can be envisaged: integrated water

resource management or IWRM. As described by the Global Water Partnership (GWP), IWRM is “a process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment” (GWP, 2018b). The conceptualization of IWRM (Figure 4) goes as far back as 1977 – when the first internationally coordinated approach to IWRM was promoted during the Mar del Plata United Nations Water Conference (Rahaman and Varis 2005).



Its influence was evident as recently as 2015 when the sustainable development goals (SDGs) set targets and specific goals.

The aforementioned NRM frameworks have individual strengths and opportunities based on their own management guidelines and protocols, which are targeted at each and every level of a country's governance structure. At the local level, those in charge of implementing REDD+, PES, and IWRM work with local communities and local governments to develop constructive and productive relationships to identify strengths, weaknesses, challenges, and trends as well as to establish mid/long-term objectives needed to build local institutions. These local institutions are the roots for a community's economic development, maintaining and improving local livelihoods, provision of alternative income activities, and promotion of environmental education and nature conservation, among other aspects of sustainable development.

At the national level, the three NRM frameworks in question have the potential to develop context-appropriate policy frameworks and project implementation guidelines that are envisioned to achieve each country's development targets whilst strengthening and building up local capacities and strategies. This will allow the beneficiary country to access international financing mechanisms to promote its own sustainable development pathways. At the global level, REDD+, PES, and IWRM allow countries to come to intergovernmental negotiations, panels and forums with appropriate information to help tackle global emergencies including climate change, poverty alleviation, water scarcity and health crises.

The bigger challenge facing natural resource management frameworks such as REDD+, PES, and IWRM is how to devise innovative plans by building on shared agendas while ensuring inter-dependencies on ecosystems and guaranteeing the effectiveness of projects and programmes by focusing on results. This study aimed at carrying out an assessment of REDD+ initiatives and the historical evolution of PES, and IWRM in Nepal in order to identify the opportunities for, and challenges to, strengthening the linkages between the three NRM frameworks by conducting a series of expert interviews with representatives of the different institutions involved in the development and implementation of the three management frameworks.

1.1 REDD+, PES, and IWRM in Nepal

Each country's natural resource management (NRM) phases, which includes planning, designing, implementation and monitoring, are context dependent. An additional important consideration is the variables influencing the management process mentioned above such as complex social interactions, intrinsic ecological relationships, and dynamic economic forces. With regard to Nepal, a new era of NRM frameworks such as REDD+, PES, and IWRM originated with the formation of community-based institutions (CBIs), more specifically, with the formation of Community Forest User Groups (CFUGs).

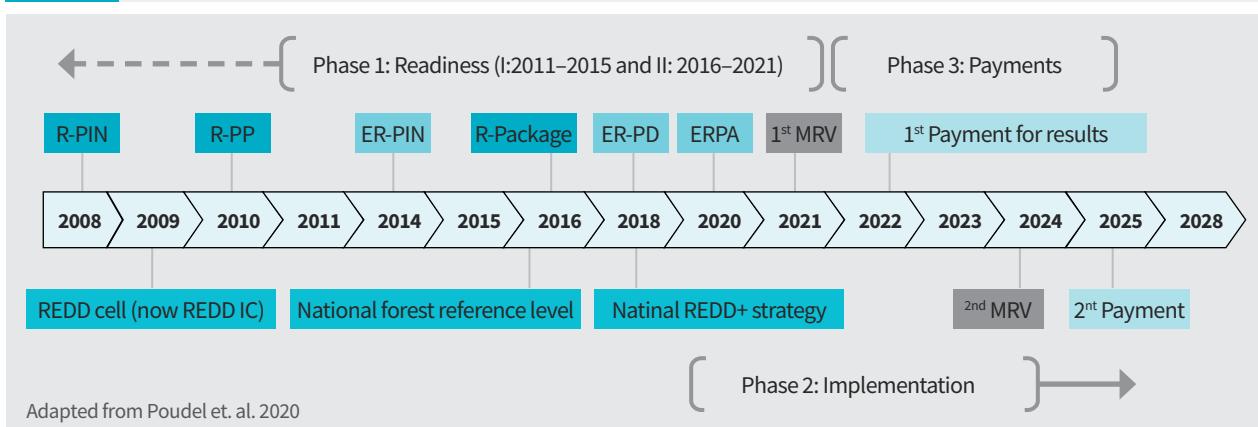
The Government of Nepal (GoN), including several national and international organizations, have substantial experience in implementing community forestry, integrated water resources management (IWRM) programmes and, increasingly, PES projects. As the country has endorsed the REDD+ strategy and continues to move forward with developing and piloting REDD+, there is substantial interest in strengthening the linkage between REDD+, PES, and IWRM.

PES schemes have been included in Nepal's national forestry policy since 2015 and, specially, within strategy 2 and 5 of the country's National REDD+ Strategy (NRS) (MoFE 2018). In alignment with the national forest policy, Strategy 2 – action 2.5 clearly details the country's willingness to "develop and promote appropriate institutional arrangements for (...) payments for environmental services". In addition, Strategy 5 can be considered as a key point of synergy between REDD+ and PES for future development projects as it allows for the establishment of appropriate benefit sharing mechanisms, while producing suitable market conditions for carbon and non-carbon benefits, including non-timber forest products (NTFP). IWRM, on the other hand, is further included within Nepal's NRS through various elements focusing on improved land use planning and management as well as through PES.

As Nepal advances in the development of its REDD+ programme, strengthening the understanding of how relevant approaches have emerged within the country is important, including an understanding of appropriate policies, programmes, and pilot projects as well as the opportunities, synergies, challenges and barriers when linking such programmes with REDD+ and scaling up such initiatives. This paper is an attempt in that direction.

FIGURE 5

REDD+ PROCESS AND EVOLUTION IN NEPAL



Adapted from Poudel et. al. 2020

R-PIN = Readiness Plan Idea Notes; R-PP = Readiness Preparation Proposal; ER-PIN = Emission Reduction Program Idea Note; R-Package = REDD Readiness Package; ER-PD = Emission Reduction Programme Document; ERPA = Emission Reductions Payment Agreement; MRV = Monitoring, reporting, and verification

1.1.1 Progress of REDD+ in Nepal

Nepal's forest resources have gone through a period marked by exploitation and high deforestation rates. The nationalization of forest land by the Government of Nepal in the mid-1950s had devastating effects on forest cover with deforestation rates reported to be as high as 1.3% and 2.7% for the Terai and the mid-hills, respectively (REDD Implementation Center 2016). Due to the country's experience and diligent efforts, by now, annual rates of forest deforestation for the Terai and mid-hills have come down to 0.44% and 0.118%, respectively (RIC 2016). The change in deforestation trends started in the late 70s when the central government gave back partial autonomy over forests to community forest users which, at the time, were known as 'Village Panchayat Forests' (Bushley and Khatri, 2011). However, it was not until the establishment of community forest user groups (CFUG) that the slow recovery of forest cover actually started. With the advent of the Warsaw framework for REDD, more opportunities for collaboration between communities and REDD+ implementation activities arose (Shrestha et al. 2014). Since then, Nepal's CFUG-based forest management has come to be deemed an international example of how CFUGs can manage forests in a more sustainable way than government initiatives.

Nepal is among several countries who are implementing REDD+¹ to support their national

and international climate change and sustainable development commitments. The country has successfully submitted its Emission Reduction Programme Document to the Forest Carbon Partnership Facility (FCPF) Readiness Fund and is moving towards the next stages of developing REDD+, including establishing demonstration activities and piloting REDD+ projects (RIC et al. 2017).

As part of Nepal's interest to adopt and successfully implement REDD+, the GoN has been adapting sustainable forest management and promoting an enabling environment for emission reduction and enhancement of carbon stock activities while it has developed a three-tiered structure to get ready for carbon markets. The country is still completing its readiness phase, which includes the preparation of the following framework documents (Figure 5) (RIC et al. 2017) among other implementation activities in collaboration with ICIMOD and other partners: Readiness Preparation Proposal (R-PP), Sub-National Emission Reduction Programme (ER), Emission Reduction Program Idea Note (ER-PIN), Emission Reduction Programme Document (ER-PD), National Forest Reference Level (FRL) and National REDD+ Strategy.

Not too long ago, the country of Nepal underwent a political transition from a centralized government to a federal system that can integrate NRM governance structure into provincial and local governments. Some experts have expressed fears that due to the former centralized government structure, the scope of pilot projects and the absence of adequate processes and other crucial elements of an effective

¹ REDD+ is a mechanism created by the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) (EU REDD Facility 2017) and it evidences efforts of countries to reduce emissions from deforestation and forest degradation and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks (UN-REDD Programme 2013).

participatory approach, the country will suffer a setback as regards REDD+ (Bushley and Khatri 2011). However, with the adoption of a federal governance structure and the implementation of a REDD+ payment mechanism and different forest management activities at community-level, Nepal has demonstrated that REDD+ can promote a positive response from communities by improving carbon stock and biomass growth, as well as accountability and transparency at community institutions (Shrestha et al. 2014).

Where REDD+ does not have a clear structure is at the provincial level. Nevertheless, the potential risk of this uncertainty can be lessened by a multi-level approach (MoFE 2018): i) regulation of carbon services at federal level by the National REDD Center (NRC); ii) implementation of emission reduction programmes at community level by the CCFG; and, iii) arrangement and promotion of REDD+ related roles and responsibilities for all forestry organizations across all levels by the NRC.

REDD+ implementation activities, individually and collectively, represent opportunities to promote synergies with other NRM frameworks like PES, and IWRM at ground level, especially through the development of capacity building programmes of community-based user groups (CBUGs), and support of alternative income generation activities to diversify community livelihoods. These opportunities can be used to look into different strategies to successfully maximize benefits from all the ecosystem services that forests generate, while promoting sustainable land use practices and activities to support local livelihoods.

1.1.2 Understanding PES in the context of Nepal

Globally, PES is a mechanism that has been used as an economic decision-making tool through the promotion of market-based instruments to value a specific ecosystem service or land-use: for example, incentives for developing countries to reduce emissions from forested lands (REDD+) (EU REDD Facility 2017). It is noteworthy that there has not been a PES mechanism in Nepal until now. Instead, according to experts, there have been only PES-like mechanism or incentives for ecosystem services (IES)² in the context of the country (Patterson et al.

2017). Two main reasons can be given: firstly, there have been no market-based instruments for any of the ES or LU and, secondly, “there are no provisions or discussions on conditionality of payments or incentives even if the supply of ES does not meet the level indicated in the agreement” (Bhatta et al. 2014).

In Nepal, there is no policy and legislative framework for PES. However, the PES projects developed in the country seem to have formulated their policy arrangement based on several sectoral provisions, which include laws and acts such as the National Water Plan, Local Government Operational Act, National Forestry Strategy, National Biodiversity Strategy and Action Plan, among others. Additionally, the main ES developed in the country’s PES projects are in relation to hydropower production, drinking water supply, eco-tourism and carbon sequestration and enhancement of carbon stock (ICIMOD 2011; Khanal et al. 2010; Khatri 2011; Kunwar 2008; Paudel 2010).

1.1.3 Nepal’s status on IWRM

The status of IWRM in Nepal has been shaped by a long history of natural disasters, intricate social structures and dynamics, and drastic political changes. The geology, topography, and the local and regional seasonal climate have made Nepal’s watersheds prone to high levels of erosion and watershed degradation. Consequently, landslides and high levels of surface runoff have been major setbacks for development and implementation of activities and projects. The intensity and occurrence of these natural effects have been augmented by anthropogenic effects related to improper land use and land-use change (LU-LUC) (MoFSC 2016).

The core institutions that have been working on IWRM at ground level have been the local offices of the Department of Soil Conservation and Watershed Management (DSCWM), international donors and organizations, international and national research institutions, and community-based user groups. The majority of these organizations, barring international actors, have however been subject to social dynamics characterized by caste, gender, ethnicity, and other dimensions of marginality. These social disadvantages have been tackled by the formulation and implementation of inclusive policies, socially representative provisions, and more participatory decision-making processes. As an answer to this issue, the government of Nepal introduced an

² In this document we refer to all these PES-like mechanisms and IES initiatives as PES.

especial forest management modality called ‘Pro-Poor Leasehold Forestry’ which has successfully enhanced the livelihoods of forest dependent poor people (Kafley and Pokharel 2017).

More recently, the transition to a de-centralized multi-level political system (federalism) has come to represent a new era of synergies and opportunities for IWRM in Nepal because, until now, IWRM has not been implemented to its full potential because of the absence of ‘integrated’ activities, in a meaningful and holistic sense. The IWRM policy foundation, moreover, is based on sectoral laws and regulations that do not have a water resource management focus per se but, instead, promote a segregated implementation and development of watershed activities. Due to the lack of a clear institutional arrangement and weak relations at the central government , there is a disconnection between donor objectives and national objectives, which has complicated the framework of donor-driven projects (Suhardiman et al. 2015). In response, the GoN is

trying to diversify the responsibility of watershed management, which is currently solely in the hands of DSCWM, through the creation and implementation of a forestry sector strategy (2016-2025). In this official guideline document, the government is already contemplating the following three important aspects of IWRM in Nepal: i) focus on and development of more ground level activities; ii) identification of ‘hotspots/sites’ of relevant ecological, economic and social values; and, iii) adoption of new institutional arrangements and partnerships.

Given all these initiatives, the paradigm of IWRM in Nepal is shaping up to be more inclusive and is incorporating a participatory process. Additionally, there is already a draft of an IWRM policy framework that is just awaiting endorsement from the government. Hence, IWRM in Nepal is currently being reformed to achieve a sustainable and socially equitable management of the vast number of ecosystem services found in Nepal’s watersheds.

Methodology and conceptual framework

KEY MESSAGES

In the context of exploring synergies between REDD+, PES, and IWRM, a set of principles and criteria was identified which outlines the basic defining principles for each of the three management schemes.

Furthermore, an assessment platform, consisting of three inter-connectivity points, was defined to identify potential synergies and linkages amongst the three NRM frameworks. These three inter-connectivity points are: i) governance and policy structure; ii) implementation of activities and initiatives; and iii) capacity building and awareness.

The focus of the study is an analysis of the historical evolution and status of REDD+, PES, and IWRM in Nepal. At the same time, the objective is to identify opportunities to strengthen linkages between the three aforementioned NRM frameworks.

2.1 Methodology

The focus of the study is an analysis of the historical evolution and status of REDD+, PES, and IWRM in Nepal. The objective is to identify opportunities to strengthen linkages between the three natural resources management frameworks in the context of Nepal. By analyzing the documented development of REDD+ and PES practices related to IWRM in Nepal, it would be possible to understand the specific country context, opportunities, challenges and barriers towards a potential linkage between the aforementioned NRM frameworks.

To implement such an approach, a literature review was conducted of REDD+, PES, and IWRM with a special focus on the evolution and history of such frameworks in the context of Nepal. It allowed us to look at the evolution of relevant policy frameworks, programmes and piloted activities, and through this, the key lessons learned in relation to REDD+, PES, and IWRM as well as opportunities and gaps in relation to Nepal were identified. A review was also conducted on existing pilot projects through which the synergies, opportunities and challenges for each project were identified.

Secondary literature as well as information pertaining to the study were collected from available local sources and international databases. Additionally, a literature review was conducted on international

TABLE 1

RELEVANT ACTORS WHO PARTICIPATED IN THE INTERVIEW PROCESS

Interviewee	Organization or institution	Natural resources management relation
Nabin Joshi	Asian Network for Sustainable Agriculture and Bioresources (ANSAB)	PES, and REDD+
Jagannath Joshi	CARE Nepal	IWRM and PES
Sandesh Singh Hamal	CARE Nepal	IWRM and PES
Allen Turner	DAI Nepal	IWRM
Nuli Basnyat	DAI Nepal	IWRM
Prakesh Thapa	Ministry of Soil Conservation, Department of Soil Conservation and Watershed Management	IWRM and PES
Ganesh Bahadur Karki	Federation of Community Forest Users in Nepal (FECOFUN)	PES, and REDD+
Bhaskar Karki	International Centre for Integrated Mountain Development (ICIMOD)	REDD+
Lakpa Sherpa	Local Initiatives for Biodiversity, Research and Development (LI-BIRD)	IWRM and PES
Dilli Bhattacharai	Nepal Environmental Research Institute (NERI)	IWRM and PES
Sabita Aryal	Nepal Environment and Tourism Initiative Foundation (NETIF)	IWRM and PES
Keshav Khanal	The Mountain Institute (TMI) Nepal	IWRM and PES

best practices in PES, and IWRM that allowed us to compare different contexts, for e.g., Viet Nam, Mexico and Costa Rica, and to reflect on key lessons learned therein which would help in better integration of the linkages between the three NRM frameworks according to the context in Nepal. A short online survey was developed and distributed to relevant actors on key topics identified from the literature review. The objective of the online survey was to obtain first-hand information from relevant actors and to derive a glimpse into the general status of the three NRM frameworks.

To validate the findings from the literature review and aforementioned processes and to further identify gaps, challenges and opportunities with regard to linkages between REDD+, PES, and IWRM in the context of Nepal, a set of interviews (in-person or by phone/skype) were conducted with representatives from the government, academia, and NGOs, with a special focus on three project-development-related topics: i) policy frameworks; ii) capacity building; iii) implementation and monitoring. Given below is a description of the relevant actors who were interviewed for the purpose of developing the study.

The interviews were recorded, with the permission of the interview partner, and transcribed. The software “QDA Miner Lite” was used to develop a coding system and to analyse the transcribed interviews.

2.2 Conceptual framework

In the context of exploring synergies between REDD+, PES, and IWRM, a set of criteria was identified which outlines the basic defining principles for each of the three management schemes. These “Management Scheme Evaluation Criteria” were developed based on existing scientific literature and studies that allowed the generation of an initial scope on whether an identified project falls under the definition of REDD+, PES or IWRM schemes. In the next step, the three management implementation levels were identified in order to assess the “inter-connectivity” for synergies and linkages between REDD+, PES, and IWRM. Based on the preliminary literature review and analysis, three “inter-connectivity” implementation levels were identified as follows: i) policy status; ii) implementation of activities and initiatives; and, iii) capacity building and awareness.

2.2.1 REDD+, PES, and IWRM principles and defining criteria

In order to develop the study, a framework-specific criterion was identified that best defined and described a REDD+, PES, and IWRM scheme based on the literature review on the global scope of the three natural resources management frameworks of interest.

REDD+ DEFINITION CRITERIA

Based on the REDD+ definition³ and the outcome of the Warsaw CoP19 meeting on “key decisions relevant for REDD+ in developing countries” (UNFCCC 2016), the following criteria for assessing such initiatives were identified:

- Addressing drivers of deforestation and forest degradation;
- Monitoring reduction of deforestation activities/drivers; and
- Incentivizing emission reductions.

PES DEFINITION CRITERIA

Payments for environmental services are usually easy to identify though difficult to place under the same evaluation criteria. PES programmes have a wide range of different characteristics starting from the ecosystem service they try to generate/maintain/improve to the social, economic, and political context within which they operate (Engel et al. 2008). Many PES programmes worldwide adhere to the 5 definitional criteria that were first established in the study “Payment for Environmental Services: Some nuts and bolts” by Wunder (2005) and later revised in the paper “Revising the Concept of Payments for Environmental Services” (Wunder 2015). The five points that define a PES scheme are as follows:

- Voluntary transaction;
- Between service users;

³ “Reducing emissions from deforestation and forest degradation while fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks (REDD+) is a mechanism developed by Parties to the UNFCCC to create a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development, i.e., results-based payments. REDD+ goes beyond simply deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks” (EU REDD Facility 2017).

- And service provides;
- That are conditional and agreed on rules of natural resource management (conditionality);
- For generating offsite services.

IWRM DEFINITION CRITERIA

Integrated water resources management relies on general principles that date back to the international agenda of Mar del Plata (1977) and Kyoto (2003). The first conference in Mar del Plata adopted the Mar del Plata Action Plan that included a set of recommendations and a variety of resolutions which included water use and efficiency, natural hazards, health and pollution control, and policy strategies (Rahaman and Varis 2005). This management framework was based on the proposal for and implementation of management of land and water uses, biodiversity conservation, and promotion of income generation activities, among others (Wang et al. 2016). IWRM can be assessed, considering a river basin scale, under the following criteria:

- Addressing water and land-use and land-use changes;
- Monitoring land-use activities and water quality and quantity; and
- Incentivizing optimal watershed productivity without compromising water security.

2.2.2 Inter-connectivity assessment

Within the conceptual framework, it was assumed that the three management frameworks (i.e., REDD+, PES, and IWRM) share three NRM topics of inter-connectivity, which provide an appropriate assessment platform to identify potential synergies and linkages amongst them. These three inter-connectivity points are as follows: i) governance and policy structure; ii) implementation of activities and initiatives; and iii) capacity building and awareness (Figure 6).

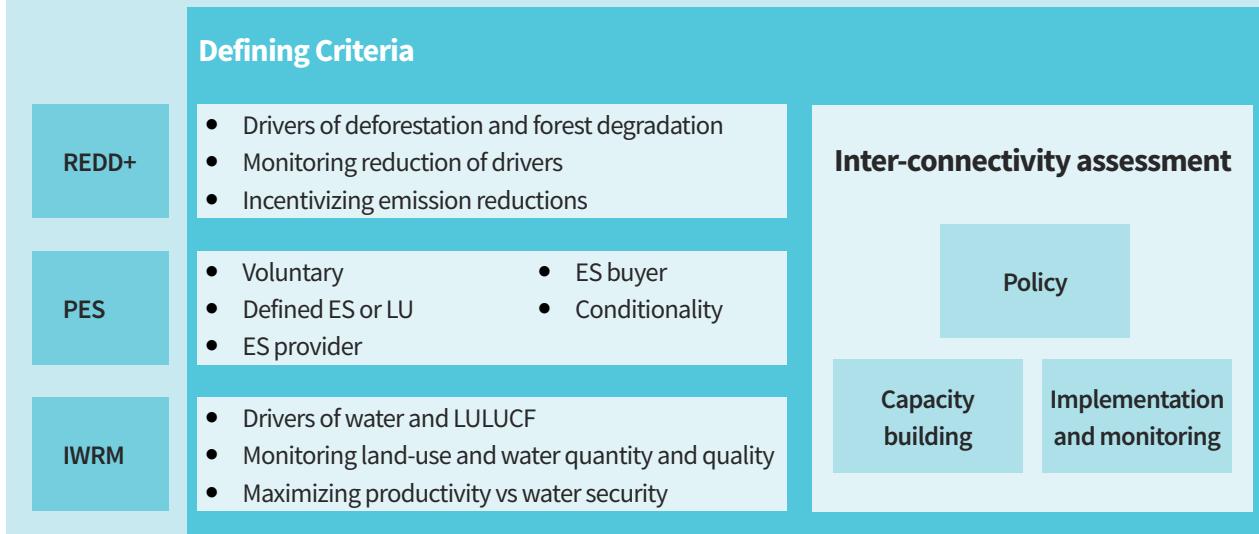
A well-defined governance structure, with a clear institutional framework and an adequate set of policies will set an enabling environment for the development and implementation of sustainable management frameworks. In Nepal, there is a clear line of dependency between implementation success of these management frameworks and the country’s environmental governance structures and policies. However, concerted efforts have been made to

FIGURE 6

SCHEME FOR THE CONCEPTUAL FRAMEWORK TO ASSESS SYNERGIES, OPPORTUNITIES AND CHALLENGES BETWEEN REDD+, PES, AND IWRM FRAMEWORKS

CONCEPTUAL FRAMEWORK

Assessing synergies and linkages



overcome this weakness as reflected in some case studies, for e.g., “A PES case study of the Shivapuri National Park” (Kunwar 2008) and “An institutional analysis of mechanisms for sharing hydroelectricity revenue” (Khatri, 2011).

Similarly, REDD+, PES, and IWRM have developed a strong track record of implementation and monitoring of activities promoting sustainable resource management. These efforts are of particular importance since they signify the force of change from unsustainable land and water-use practices towards a more environmentally and socially friendly management of resources. In this context, IUCN has developed an Integrated Conservation and Management Plan for the Sardu Watershed in the Sunsari district in Nepal, which includes a variety of sustainable programmes such as soil and forest conservation; stream and rainwater harvesting; open space and bare-land management; and institutional development, monitoring and research, among others (IUCN 2011).

However, all such effort would prove to be futile if there is not enough capacity building, awareness-raising, training, and infrastructure development within the different approaches. Thus, PES, REDD+ and IWRM must promote sustainable water and land use while improving local community livelihoods and social well-being. In recent years, Nepal has been implementing a series of pilot projects focused on emission reductions from deforestation activities. The Norad REDD+ Pilot Project, which managed to promote a decentralized monitoring, reporting and verification (MRV) system successfully by training local communities to measure forest carbon stock using “standard forest inventory methods and mapping techniques based on hand-held information and communication technologies” (Shrestha et al. 2014) is a good example.

Opportunities and challenges of REDD+, PES, and IWRM in the context of Nepal

KEY MESSAGES

The results of the study are presented for each of the topics given below in the following order:

- i) criteria and principles of REDD+, PES, and IWRM;
- ii) community-based institutions;
- iii) government institutions;
- iv) policy;
- v) capacity building; and,
- vi) implementation and awareness.

Based on the research work, it was possible to identify that REDD+, PES, and IWRM have both opportunities and challenges in the context of Nepal.

Based on open questionnaires and interviews conducted among a group of researchers, advisors, and government officials, it was possible to identify that REDD+, PES, and IWRM have both opportunities and challenges. In what follows, results are presented for each of the topics given below in the following order: i) criteria and principles of REDD+, PES, and IWRM; ii) community-based institutions; iii) government institutions; iv) policy; v) capacity building; and, vi) implementation and awareness.

3.1 REDD+, PES, and IWRM principles and definition criteria

The participants who had had experience working on watershed and water resources management projects were able to identify and prioritize the three levels of sustainability that IWRM must consider: social relations, ecological interactions, and economic dynamics. As deduced from one of the interviews, IWRM should consider all of the stakeholders who are working and benefiting from the activities happening at the watershed level, which includes not only those who are promoting pollution control and doing conservation activities but also those who are providing a direct economic benefit to the communities by promoting commercialization of different products and natural resources (Sherpa 2018).

In relation to PES, the interviewees were able to identify most of the elements found in the literature in relation to what defines a PES scheme such as a voluntary transaction of a certain ecosystem service between an ecosystem service buyer and a provider if, and only if, the provider ensures provision of the ecosystem service to the buyer. For example, a respondent mentioned that PES should have at least three elements (Joshi 2018b): i) there should be a service; ii) there should be a group of people or community who is providing the service; and iii) a group of people who needs the service or who is willing to buy the service.

Since the experience of most interviewees was more related to PES or IWRM projects in Nepal, they were not able to explain what qualifies an NRM framework to be labeled as REDD+. However, one interviewee identified REDD+ in Nepal as a natural resource management tool that helps to reduce emissions and to address drivers of deforestation and forest degradation that also takes into consideration the social component of NRM including the social aspirations of the people as well as social standards, norms, and benefits (Hamal 2018).

Opinions of the experts were also solicited on whether they thought there could be synergies between PES, and/or IWRM and/or REDD+, and at what institutional level could these synergies be easier to implement. The majority said that it should be at all governance levels from community-based institutions, local government and federal government. In a recent

study, it has been stated that PES schemes have advantages and opportunities which can be used as a platform to initiate REDD+ schemes although not the other way around as REDD+ per se represents a unique PES scheme focused on carbon sequestration (ICIMOD 2017).

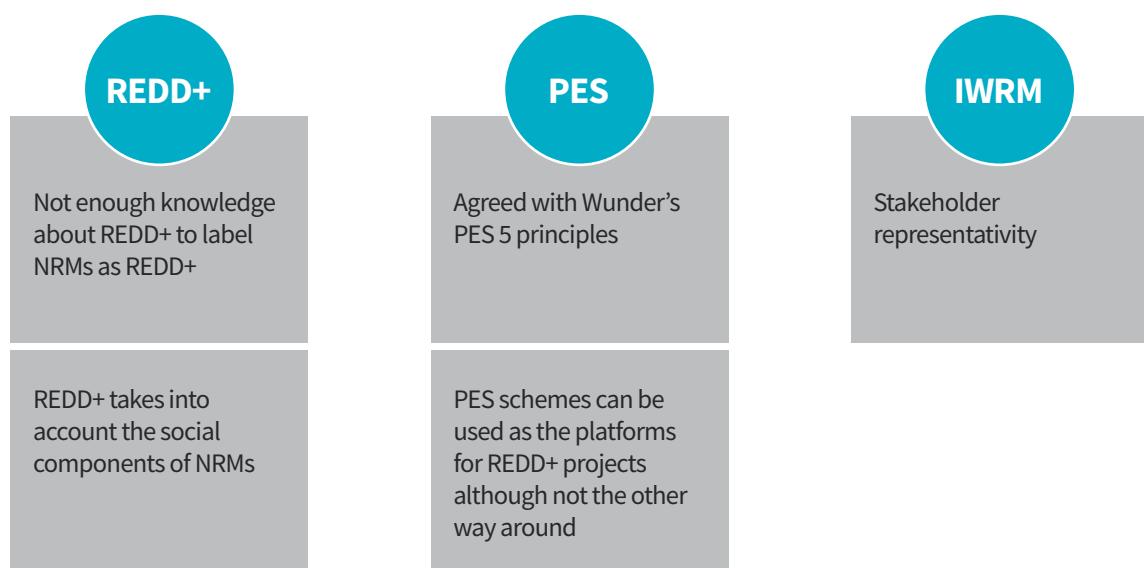
As a brief summary about the general understanding of the principles and definition criteria for the three NRM frameworks, it is possible to highlight the following points (Figure 7): i) the understanding and knowledge about REDD+ is limited; ii) Wunder's PES 5 principles are widely recognized and accepted by the experts; and, iii) IWRM criteria does align with sustainable development but there is a need for stakeholder representativity.

3.2 Community-based institutions

According to the interviewees, the main strength of community institutions (CBI) is that they are well organized as they already have their own rules and regulations to manage forest resources with some technical and expert advice from the District Forest Office (DFO). This minimizes the input needed from government and/or NGOs to establish an appropriate institutional mechanism (Joshi 2018a; Khanal 2018b). In the same way, since their institutional structure is already set up (for PES it is an informal mechanism) and they have a strong mechanism to reduce deforestation and forest degradation, it is not essential to establish a new community institutional

FIGURE 7

SUMMARY OF THE GENERAL UNDERSTANDING OF REDD+, PES, AND IWRM PRINCIPLES AND DEFINITION CRITERIA



mechanism. However, it is essential to further strengthen their capacities in order to be able to link PES, and REDD+ in accordance with the communities' livelihood needs (Khanal 2018a).

Given the well-established, formal and informal institutional mechanism of CBIs, the interviewees saw an opportunity to introduce certain micro-enterprises with the objective of promoting alternative income generating activities that would make communities less dependent on forest resources (Joshi 2018a). This would, in turn, minimize the pressure on community forests due to deforestation and forest degradation as well as diversify income-generating activities for the improvement of community livelihoods.

With regard to REDD+, one of the interviewees saw community groups to have the following advantages (Karki 2018): i) they lower the costs of implementation because they are themselves the social capital; ii) they have been conducting forest management in a sustainable manner without any major additional inputs of technical resources so that project activities are more likely to succeed with them.

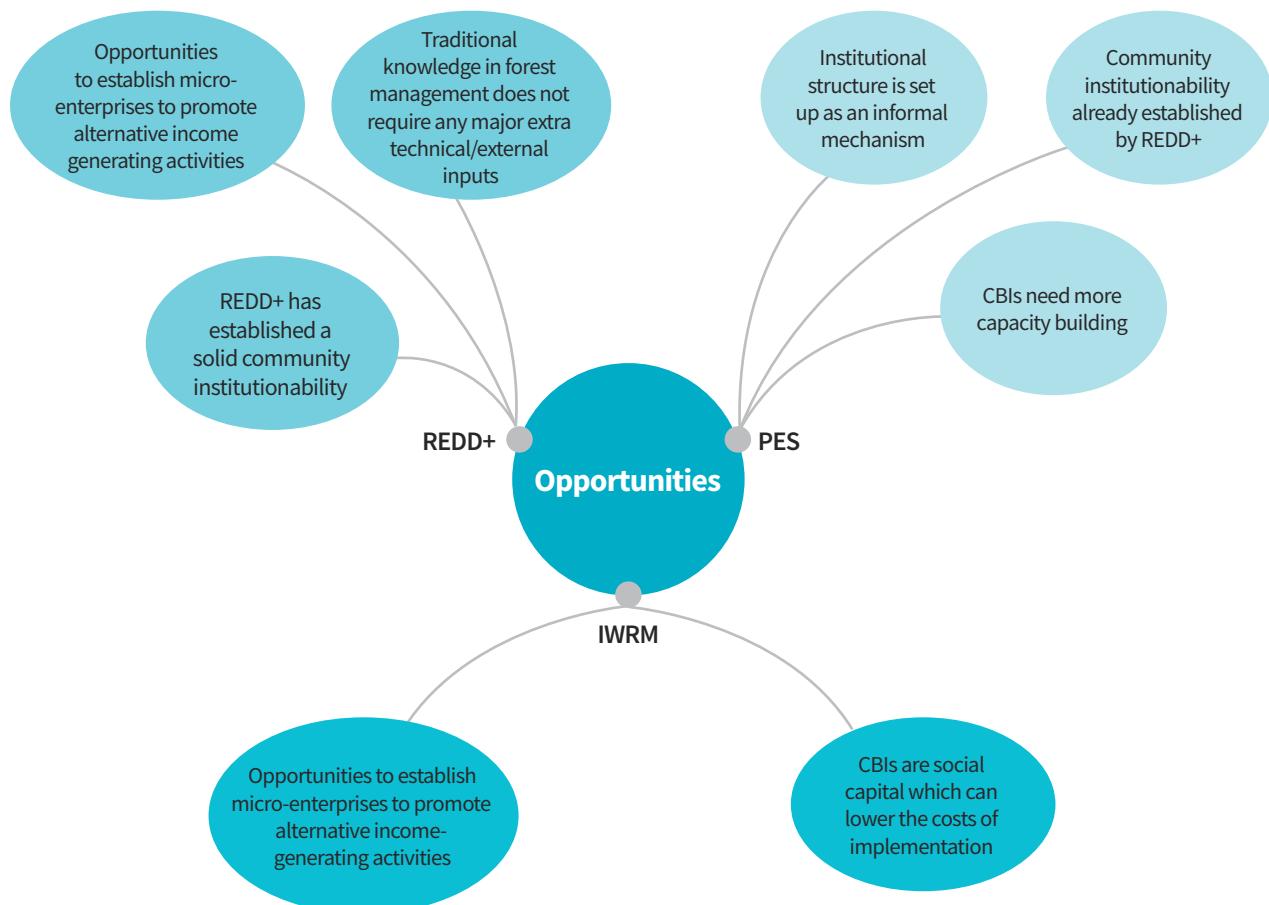
A common opportunity shared by the three NRM frameworks in question is that CBIs have a well established institutionability in Nepal. A summarized description on all the opportunities that REDD+, PES, and IWRM share within CBIs is displayed in Figure 8.

Among the challenges found at community-based institutions is the membership criteria of CBUGs. In Nepal, some community groups have strict and unfair regulations concerning land tenure issues, citizenship certificate compliance, and on charging unfair membership fees. Land tenure issues and citizenship certificate compliance are more prominent among people who are part of the internal migration dynamics. Moreover, the executive committees of some CBUGs tend to illegally charge a higher membership fee from newly arrived community members based on the accumulated asset of that particular group, indifferent to the latter's caste or socio-economic status (Hamal 2018; Khanal 2018b).

Additional social barriers have been identified which can be categorized as follows: caste-based barriers where upper castes find acceptance within a group easy due to prevalent norms about caste hierarchies

FIGURE 8

SUMMARY OF REDD+, PES, AND IWRM OPPORTUNITIES WITHIN NEPAL'S CBIS



in the community; class-based barriers where, the poor and marginalized groups get an additional subsidy in some user groups but where the benefit still cannot be compared with those of people who can afford more services and more products because they are better-off; and, gender-based barriers, where men can be more proactively engaged forest management and income generation activities than women (Hamal 2018).

There are other challenges that CBIs face in the context of Nepal: the low level of awareness with regard to the activities that the communities are engaged in; the low level of representation at household level during the organization of the community's General Assembly or the formation of the communities' executive committee. This is especially the case in the Terai region (lowlands), where the size of the forest is relatively small but the number of households represented can go up to 300,000 in densely populated areas. In the Hill region, comparatively speaking, it is the opposite as the number of households involved in forest management is relatively low while the forest areas are relatively large, which makes the decision-making process, communication, and information-sharing mechanism more fluid (Khanal 2018a; b).

As pointed out by various interviewees, in some cases, the community group discussions and decision-making processes are weak because there is low organization and attendance at community group meetings, which in turn can be attributed to a lack of infrastructure, especially in the mountainous regions where most community members have to travel by foot for several hours, even up to a day, in order to attend group meetings (Aryal 2018; Khanal 2018a).

Additionally, another setback is the lack of monitoring, reporting, and verification (MRV) capacities among communities. One of the interviewees mentioned that communities are falling behind in preparing the annual activities and progress reports which need to be presented to the local government agencies (Khanal 2018a).

An interesting point was made by the interviewees in relation to an 'inter-generational information and knowledge gap' which is disrupting the informal institutional mechanism or "institutional memory" of community forest management. Thus, the new generations of community members lack knowledge about the objectives and activities of a CFUG from the

perspective of the older generation of community foresters, say, those from 30 or more years ago (Khanal 2018a). This gap could be attributed to the following two reasons (Aryal 2018): i) migration dynamics which lead to new generations going out of the community, to the bigger cities or other countries, in search of better jobs and education opportunities; and/or ii) less dependency on forests due to changes in community livelihoods.

As a summary, Figure 9 shows a brief description of all the points and findings from the experts about the challenges facing REDD+, PES, and IWRM in relation with Nepal's CBIs.

3.3 Government institutions

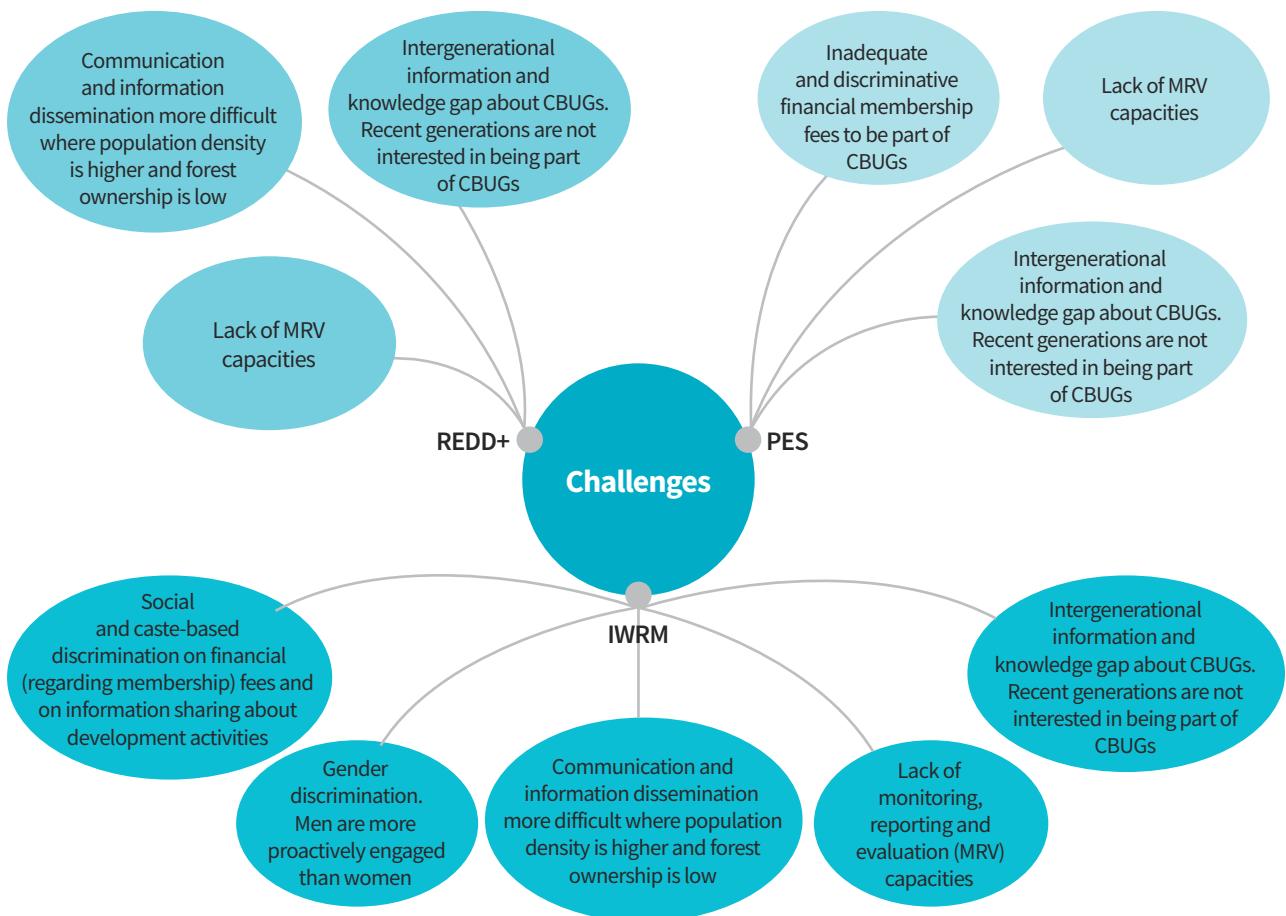
With regard to the status of government institutions, the synergies that can be found at local and central government levels were less evident than those seen for community-based institutions. Additionally, all of the synergies found have a strong focus on the post-federal re-structuring of the Government of Nepal.

According to interviewees, opportunities to work at local government level are high because of the young and enthusiastic people available at that level who are open to new ideas and are keen to bring specific tools into the management process as they have already understood the necessity for these and other changes for natural resource management in Nepal (Turner and Basnyat 2018). The experts interviewed consider this attribute at the local government a good opportunity to promote new leaders who are keen to change the political arena in the short and mid-term, especially since government agencies have improved their technical capacities by implementing different trainings and capacity building programmes on topics related to sustainable forest resource management (Khanal 2018b). In relation to the REDD+ process at the national level, there is a clear road map in place for the different institutions as regards their roles and responsibilities towards REDD+ development projects and initiatives (Karki 2018).

As part of the development of NRM process, it is required to have an appropriate enabling environment with well-defined rules and regulations as well as a clear structure regarding the roles of different stakeholders. Thus, once an adequate legislative and policy framework has been established as well as a financing and investment mechanism, it will be possible to ensure ecosystem service provision

FIGURE 9

SUMMARY OF REDD+, PES, AND IWRM CHALLENGES WITHIN NEPAL'S CBIS



to downstream communities (GWP 2018a). In this context, the interviewees note that with the new government structure, there will be opportunities to develop an enabling environment where the roles of local governments and NGOs are recognized by the central government, and where communication and training processes initiated by the government have started to improve community capacities (Hamal 2018; Turner and Basnyat 2018). Thus, some interviewees mentioned that one of the roles of the Department of Soil Conservation and Watershed Management (DSCWM) is to follow a participatory watershed management process, where all the activities and interventions follow/adopt participatory community processes (Thapa 2018).

As summarized in Figure 10, it is worth mentioning that the experts' perception identifies, on the one hand, having clear roles and responsibilities from stakeholders and, on the other, the government's promotion of a participatory community processes, as opportunities for NRM development in Nepal.

Some challenges with regard to the NRM process have been highlighted as follows: the lack of human resources and the capacities of those in place to work with NRM from the side of government agencies; disconnection and lack of coordination among government institutions when working on common objectives; lack of appropriate management boundaries in government institutions; the lack of a separate environmental budget at the level of government and the perception that the revenue created by NRM activities is not being used in the environmental sector; insufficient coordination between government agencies and NGOs; and lack of involvement from academic institutions.

There has been some improvement in efforts of government agencies to promote a more participatory process and to be more accountable to the community in the past few years but there is still hard work ahead. Some interviewees pointed to two shortcomings on the part of government:

- government agencies have to address the big gap in

FIGURE 10

SUMMARY OF OPPORTUNITIES FOR REDD+, PES, AND IWRM WITHIN GOVERNMENT INSTITUTIONS

REDD+	<ul style="list-style-type: none"> • Clear government road map established for REDD+ • Government institutions' roles and responsibilities well established
PES	<ul style="list-style-type: none"> • There are opportunities to implement an appropriate enabling environment with defined rules and regulations at the government level • Clear structure of different stakeholders' roles
IWRM	<ul style="list-style-type: none"> • Young and keen new leaders enabling a paradigm shift • Roles of local governments and NGOs need to be acknowledged by the central government • Government is promoting participatory community processes

capacities and training of their technical personnel to enable them to work in the field of NRM frameworks; ii) the lack of human resources for work at ground level to deliver technical support to the communities (Joshi 2018a).

A respondent mentioned that, when they go to the field to assess different development activities, it is very common to find development activities carried out in a segregated way. Thapa (2018) provides an example: in rural areas, it is possible to find the development of road networks being done without the appropriate environmental documentation or the construction of irrigation canals without any consideration of environmental reports such as the Initial Environmental Examination (IEE). Another example of the lack of coordination between government agencies can be seen in the way concessions are made at local government level: two concessions may have been granted in the same area where one is for fisheries while the other is for extraction of material from the river bed, which, from a development activities perspective, are opposite (Turner and Basnyat 2018).

In IWRM, it is important that the framework unit be the watershed which makes it possible to take into consideration all the relevant stakeholders as well as all the activities shaping the watershed dynamics. According to one of the interviewees, the current institutional arrangement of IWRM is not well structured because all the DSCWM offices are currently established under a political boundary instead of a watershed boundary. This means that currently IWRM development activities are not

focusing on the integrated watershed landscape but rather on specific and segregated political units. Thus, the institutional set-up must be reformed to make IWRM effective (Khanal 2018b).

Although Nepal has started on government restructuring by transitioning to a federal democratic governance arrangement, adjustments are still needed, especially on amending several policies and acts and determining the division of funds, functions and representatives between different levels of government, among other things (World Bank 2020). The interviewees identified the lack of government commitment to ensuring a long term and sustainable management initiative that would satisfy peoples' basic livelihood needs such as education, health and road infrastructure. Instead, government agencies regard these revenue flows as stop gap measures for short-term problems while communities continue to use natural resources as open access regimes (Turner and Basnyat 2018).

Nepal has a long history of receiving international aid for development. The work of national and international NGOs in Nepal has been an important pillar of advancement on social, ecological and economical topics. However, there are still challenges that need to be overcome. For example, some interviewees mentioned that the accountability system for local NGOs is very weak and that the government does not have enough information about the type and quality of work done on topics such as capacity building, training, infrastructure development, or management programmes (Joshi 2018a).

As shown in Figure 11, it is possible to identify the lack of connection between government and academic institutions, as part of the challenges found within government institutions. A respondent stated that linkage between the two types of institutions in relation to development initiatives is inadequate, especially because the work promoted by academic institutions is more individualistic as it depends on the interests of a few people instead of being part of an institutional vision (Hamal 2018).

3.4 Policy framework

Nepal is characterized, on the one hand, by its good environmental laws and, on the other hand, by its lack of compliance with and enforcement of the same. It was mentioned by the interviewees that the country has successfully internalized IWRM, PES, and REDD+ elements and criteria in different sectoral policies. Additionally, the country has all the institutions, committees and groups already in place

although decisions and implementation based on the same are not there yet (Karki 2018).

PES is mentioned in the policy related to wetland, forest and biodiversity management. Recently, the concept and definition of PES came to be included in the second amendment to the Forest Act 1993 that was made in 2016 (Khanal 2018a). The amendment clearly defines 4 types of ecosystem services: i) carbon stock; ii) water cycle; iii) biodiversity; and, iv) eco-tourism.

As part of the internalization of PES at policy level, the amendment of the Forest Act 1993 stipulates that local communities can establish their own local payment mechanisms and get the direct benefit of the environmental services in the sense that they can use the totality of the production if it is for their own consumption. If the production is diverted for commercialization, then communities must pay 15% of tax, which is still represented as an incentive to promote forest conservation at community level (Hamal 2018).

FIGURE 11

SUMMARY OF CHALLENGES FOR REDD+, PES, AND IWRM WITHIN GOVERNMENT INSTITUTIONS



With regard to IWRM policy development, the National Development Action Committee recently formed a high-level committee under the Chairperson of the Ministry of Forests and Soil Conservation to coordinate river basin management activities country-wide (ICIMOD 2018). The interviewees mentioned that this high-level committee is in the process of delivering a document to develop integrated river-basin management in Nepal (Joshi 2018b), which will allow the country to establish better institutional arrangements and, subsequently, develop and implement natural resource management projects at ground level to satisfy local, national, and international commitments.

A major outcome of NRM policy frameworks in Nepal is the work done on the inclusion of vulnerable and socially marginalized groups. The Forest Sector Strategy 2016-2025 emphasizes the necessity of proportional inclusion and representation of women, indigenous ethnic groups, and poor and marginalized groups of people at all levels of leadership and decision-making processes in community-based forest management (MoFSC 2016). The interviewees thought it was very important that the policy frameworks for PES take into consideration all the social groups. The interviewees were unanimous that the CBFM guidelines included, among other things, the following provisions: gender equity – 50% of women's representation in the executive committee; and socially marginalized inclusiveness – 40% inclusiveness in each executive committee from indigenous peoples and socially marginalized groups (Khanal 2018a; b).

Based on the experts' responses, all the identified opportunities for REDD+, PES, and IWRM within Nepal's policy frameworks are summarized in Figure 12.

As described in Figure 13, a common scenario for PES, IWRM and REDD+ in terms of policy is the lack of a specific framework that clearly establishes, on the one hand, the roles and regulations for different actors at local and central government and, on the other hand, the benefit-sharing mechanism (Thapa 2018). Specifically for IWRM, the country has already established a set of basic rules, regulations and guidelines at sub-watershed level, which have been taken from other sectoral policies such as the Forest Act, Forest Sector Strategy, Water Resources Strategy and National Water Plan, among others (Khanal 2018a). As a first step, these sectoral policies

FIGURE 13 SUMMARY OF CHALLENGES FOR REDD+, PES, AND IWRM AT THE POLICY LEVEL

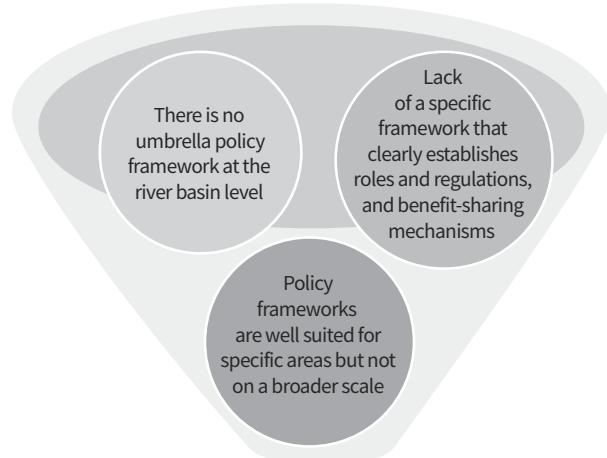
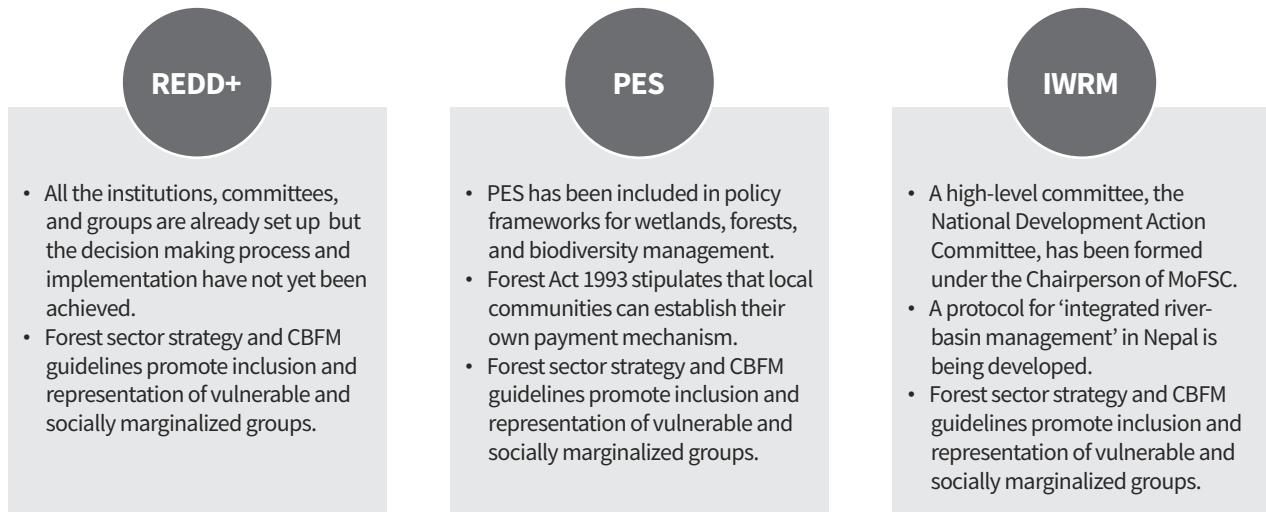


FIGURE 12 SUMMARY OF OPPORTUNITIES FOR REDD+, PES, AND IWRM AT THE POLICY LEVEL



have allowed communities to develop their own management plans and monitoring reports, which have promoted a better working environment and more communication channels with the local government. At river basin level, however, the scenario is totally different as a policy framework is yet to be developed, thus hindering an integrated approach because the current frameworks are site-specific (Thapa 2018).

3.5 Capacity building

The status of capacity building in Nepal is very good. Government agencies are not only investing resources on promoting their institutional capacities but also providing training to communities to develop their own capacities. However, the topics that have received most attention are mostly focused on the forestry sector. As Nepal is moving forward with the REDD+ readiness phase, more attention is paid to one or the other of the following topics (Figure 14): increasing and strengthening sustainable forest management practices with CFUGs; developing value chain analysis of different wood species that have a potential commercial value; improving livelihood conditions of communities by improving traditional technologies or by adapting new ones (Karki 2018).

A major setback is the lack of coordination among government institutions with regard to topics coming under IWRM capacity building as they are working on objectives that take political boundaries rather

than watershed boundaries as their focus (Khanal 2018b). However, based on the experience of different IWRM experts, it was possible to identify that the priorities in IWRM revolve around the following topics (Figure 15): i) understanding and applying the principles of IWRM; ii) developing sufficient and skilled human resources to generate ecological and socio-economic baselines; iii) raising awareness and knowledge of relevant environmental policies; and, iv) capacitating communities on how to prepare and deliver an appropriate watershed management plan as well as the annual progress reports (Khanal 2018a; b; Thapa 2018).

Currently, the people who are more interested in and eager to work on IWRM are the young implementers and engineers who, due to hierarchies in place, do not have much of a voice in the decision-making process. Therefore, one of the objectives of organizations working in the field of IWRM is to build up the capacities of young people so that 10 years from now they can influence those involved in IWRM to move towards sustainable resource management (Turner and Basnyat 2018).

Lastly, there is little communication and coordination between NGOs and government agencies in the environmental sector. So, on one hand, the government has developed a good training system with central and regional training divisions to capacitate the forest department officers and technical personnel as they are the ones in charge of

FIGURE 14

SUMMARY OF OPPORTUNITIES FOR CAPACITY BUILDING STRATEGIES FOR REDD+

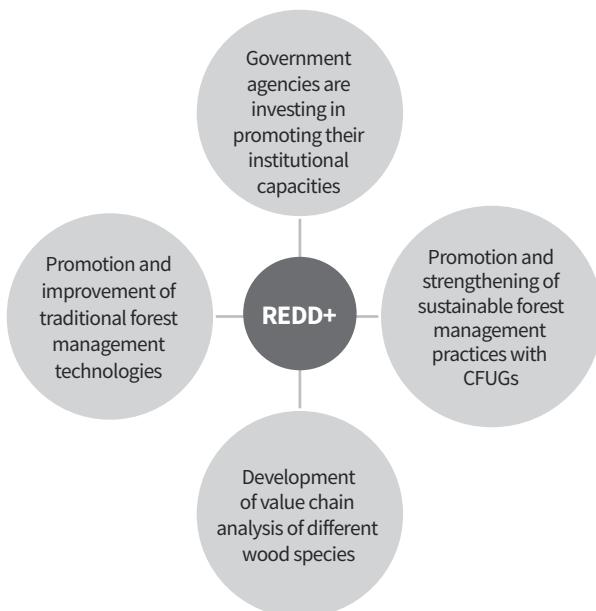
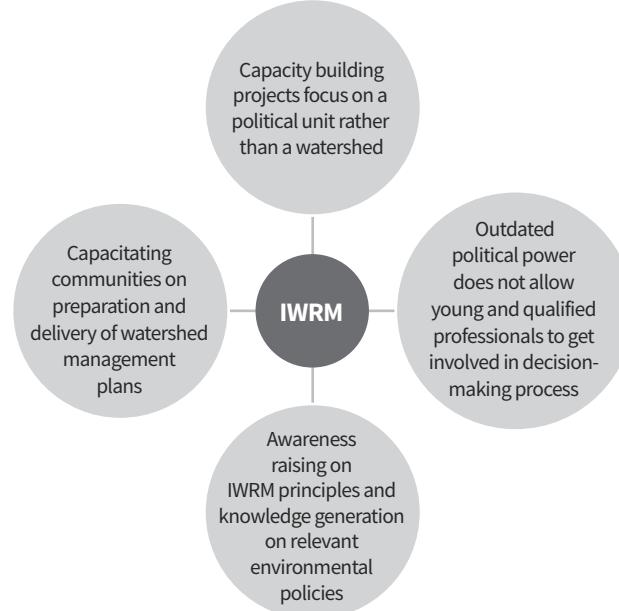


FIGURE 15

SUMMARY OF CHALLENGES FOR CAPACITY BUILDING STRATEGIES FOR IWRM



going into the communities and providing training. On the other, the NGOs too are heavily involved and investing in capacity building programmes. Fortunately, in recent years, attempts have been made to overcome these isolated efforts from government agencies and NGOs, especially after the DSCWM adopted an integrated and participatory watershed management approach (Thapa 2018).

3.6 Implementation programmes

In Nepal, IWRM and PES do not have a formal institutional arrangement or an independent policy framework. However, drafts of separate policy frameworks for IWRM and PES are currently being revised and are awaiting endorsement by the government. At the local level, PES does not exist because of two reasons: i) the requirement of a market-based mechanism; and, ii) the lack of evidence of success stories demonstrating the true benefits to communities and to the environment.

There are reasons for this. First of all, one principle of PES is the necessity of market-based references. In the case of Nepal, however, communities have been practicing similar mechanisms of transactions for ecosystem services known as Incentives for Ecosystem Services (IES) for many years. The main difference between PES, and IES is that PES is a market-based mechanism and implies the existence of a formal institutional arrangement to establish a monetary transaction. IES, on the other hand, does not necessarily rely on a market price of the service as the transaction can be set by a non-monetary exchange of goods and services. Examples are infrastructure development, knowledge transfer and training, food products, and tree saplings and nurseries among other things, with a formal or informal institutional arrangement (Patterson et al. 2017).

Secondly, in the context of Nepal, there is no clear evidence that communities are benefiting or improving their livelihoods or that the status of ecosystems has improved due to PES initiatives. Even though there are only a few PES success stories in the country, they do not come across as outstanding examples of such practice; nor can they be promoted as demonstration sites or those signifying the opportunity to replicate efforts in other areas as part of a future scale up process (Sherpa 2018).

When discussing REDD+, interviewees mentioned that since REDD's objectives and scope are more focused on fulfilling international and national commitments, the synergies between REDD+ and IWRM are easier to establish at ground level because both frameworks have similar implementation activities that can be done by CBIs (Karki 2018). Some respondents pointed out that the government has been putting more effort into developing better information about the status of forest and vegetation cover in the last few years. For example, the Forest Resource Assessment provides "national level information to support forest policy formulation, national-level forestry sector decision-making and international reporting" (DFRS 2015). They saw the opportunity to use this information to formulate synergies with PES projects as definitely an advantage (Joshi 2018a).

As mentioned by the interviewees, more opportunities for research and development projects have come about due to the autonomy granted state governments and local bodies which facilitates the connection between research and development activities and local level decision making processes (Bhattarai 2018). Before the formation of the federal structure, development work in Nepal was always done in response to national level objectives, which in turn were set by considering international standards. For example, some of the interviewees said that when they tried to implement monitoring units for early-warning flood systems, they were not taken seriously by the central government agencies because the precision and accuracy of the data generated by those monitoring units were not considered sufficient to meet international hydrology and meteorological standards (Turner and Basnyat 2018).

Some experts working at ground level also felt that the majority of implementation projects, from national to international NGOs, appear to focus on certain and specific areas of the country and, subsequently, not reaching nor providing enough support to all the people whose livelihoods are very much dependent on forest or water (Bhattarai 2018; Khanal 2018a).

The current management of Nepal's forests is very conservation driven, an orientation emanating from principles set 30 years ago when forest cover and biomass were decreasing due to different drivers of deforestation and forest degradation. As pointed

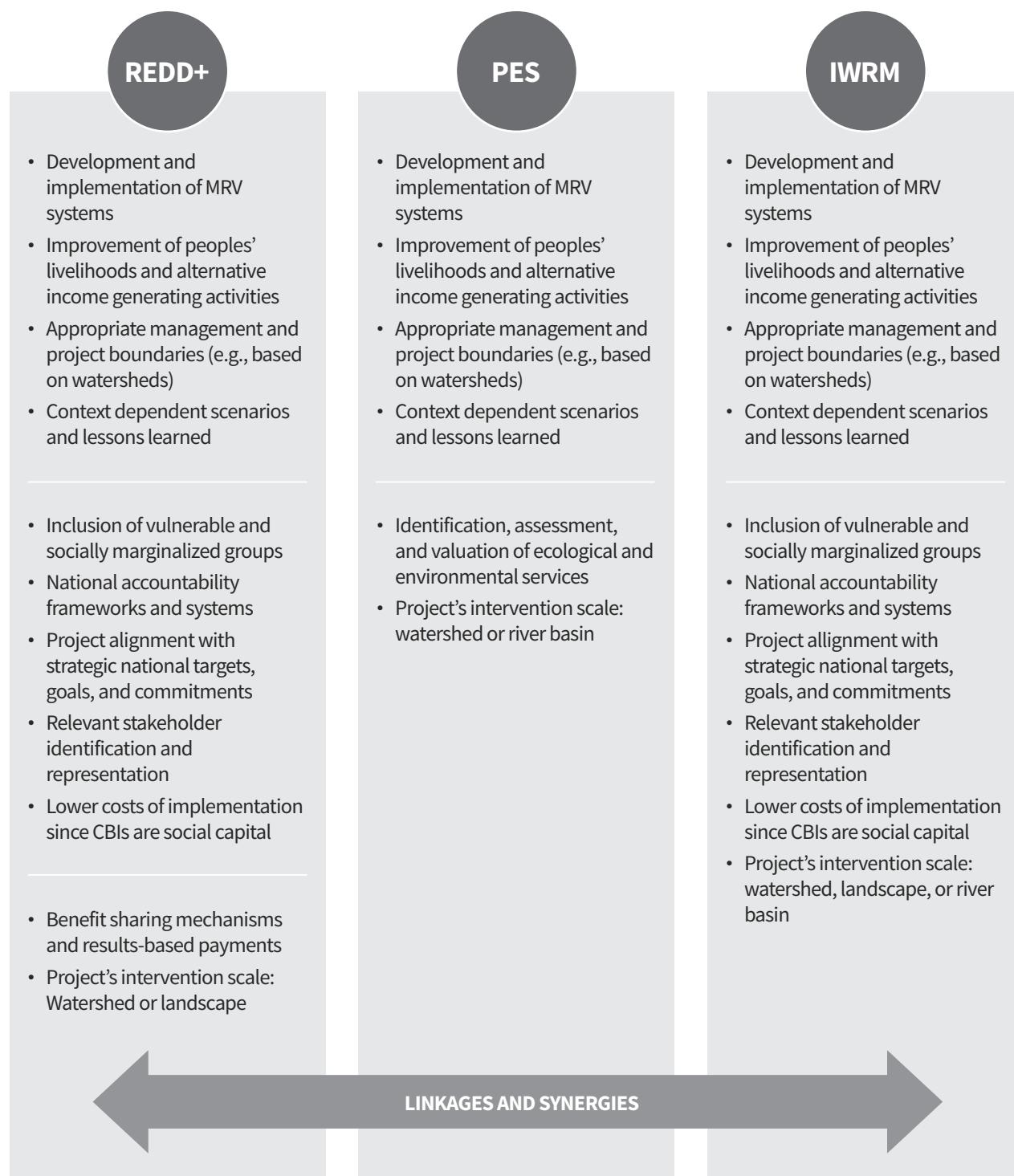
out by some interviewees, while these conservation efforts and activities have promoted a recovery of forest cover and biomass, the management of forests today needs to adopt a new approach that promotes more income-generating activities and diversified livelihoods by improving the communities' capacities in relation to forest commercial operations and by

providing them with training on how to perform sustainable harvesting and certification (Karki 2018).

Summing-up, all the opportunities (identified by the experts) for linking REDD+, PES, and IWRM frameworks within the context of Nepal are shown in Figure 16.

FIGURE 16

SUMMARY OF KEY OPPORTUNITIES FOR LINKING REDD+, PES, AND IWRM FRAMEWORKS



SECTION IV

Discussion

Communities are one key element in sustainable development but so are government agencies, donors, NGOs, and research organizations, which are essential to promoting an integrated and participatory approach by linking upstream and downstream communities to incentivize ecosystem service provisions.

KEY MESSAGES

REDD+, PES, and IWRM have the potential to benefit from each other's development and implementation pathways. However, if political will is lacking to work on these topics or capacity building and knowledge supported with context-specific information and analysis, or accountability and transparency systems, or the willingness to work for the people and their livelihoods, then no natural resource management framework would be able to bring equitable benefit sharing and sustainable development.

Nepal is characterized by its water and land resources which have endowed the landscape with an incredible scenic beauty and spiritual value. The communities living in the mountains, hills and plains have been using natural resources from time immemorial to sustain their livelihoods. REDD+, PES, and IWRM implementation and development have been determined by the country's geology and topography, the communities' abilities to manage forests, and the necessity of promoting upstream-downstream linkages. Nepal's geology and topography have made the country prone to landslides and surface runoffs which, in turn, have shaped the way IWRM activities have been designed and implemented. The country's great success in community forestry management has been taken as an example, internationally, of how communities can be an essential pillar in promoting sustainable development. Communities are one key element in sustainable development but so are government agencies, donors, NGOs, and research organizations which are essential to promoting an integrated and participatory approach by linking upstream and downstream communities to incentivize ecosystem service provisions.

Community-based institutions (CBIs) in Nepal have a very good institutional arrangement with specific roles and clear rules and regulations for an appropriate management of forest and water resources. For example, CBUGs are required to hold a general assembly once a year to democratically elect the executive committee. Moreover, their

expenditures and revenues are publicly audited while they are required to maintain records of each member's participation and activities (Sharma et al. 2017). This structure has been supported by a very successful government programme called 'Pro-Poor Leasehold Forestry Programme', which not only focused on achieving reforestation of degraded forest ecosystems but also was seeking to enhance the livelihoods of poor people who are vastly dependent on forest resources (Kafley and Pokharel 2017). The strength of CBIs has allowed them to be considered as social capital per se, which means that NRM projects will have lower costs.

While it is hard not to acknowledge the adequate rules and regulations that CBIs possess, there are some persistent social barriers which have to do with caste, gender, or economic status. These barriers are a reflection of a latent hold on power by elite groups, inequitable benefit sharing among community members, low attendance of members and more engagement of men than women in the CBUGs' General Assembly or Executive Committee meetings. Other issues are the low accountability and transparency at these meetings due to lack of communication and dissemination of appropriate information. These shortcomings at CBIs are a reflection of the absence of a stronger enforcement of and compliance with laws and regulations already existing in Nepal.

Opinion is divided on government involvement in NRM activities. On the one hand, government agencies have been working on a self-assessment of the status of NRM in the country, which has enabled them to tailor their vision, objectives and activities to be aligned better with these three frameworks. As a result, the government has already set targets to amend existing laws and regulations while government bodies have been investing on improving their technical capacities and human resources in order to implement more integrated and participatory management mechanisms.

On the other hand, NGOs in Nepal seem to harbour a notion that government agencies are lacking in human resources and are deficient in their capacities with regard to NRM activities. It is a fact that there is a complete lack of coordination and alignment between government institutions when working on development activities. Moreover, the environmental sector in Nepal does not seem to have a strong basket fund for developing its objectives, which,

retrospectively, is one reason for their segregated sectoral efforts when it comes to development activities.

A major setback for NRM in Nepal is the failure of government to design and develop an appropriate NRM framework because of the lack of appropriate political, economic and institutional conditions. Currently, it is not possible to say in Nepal that there is an 'Integrated Watershed Management' framework not only because of the reasons mentioned above but also because government agencies have set their management boundaries based on political structures rather than the 'watershed' or the 'river basin' as a management unit for interagency and cross-border cooperation (Yi et al. 2017).

It is also evident that REDD+, PES, and IWRM do not have a specific policy framework although for PES, and IWRM a draft has been developed and is being revised by the government. For now, there are good provisions from sectoral policies, laws and strategies that have been used to develop and implement PES, and IWRM activities. However, while Nepal's environmental laws are very good in general, there is a lack of enforcement and compliance.

Currently, there is a need for more pilot projects and the opportunity to scale them up. This opportunity is integrally linked with the federal system as, now that state governments and local bodies have autonomy and can set their own conservation and developing goals, the government can promote synergies with other institutions as well as avoid policy narratives that frame landscapes in particular ways to meet specific political and donor-driven needs (Kotru et al. 2017).

REDD+ has demonstrated that it possesses the potential to develop strong institutional arrangements between CBIs and government agencies with well-established roadmaps, management plans, MRV and accountability systems. These attributes generate opportunities to develop linkages between REDD+ with PES, and REDD+ with IWRM. PES, and IWRM development frameworks can take advantage of the already established institutional arrangements to promote faster and well-established development pathways. The benefit of having robust and well-developed CBIs is that they incentivize governments and national and international agencies to strengthen and promote capacity building programmes and to create alternative income generating activities and

initiatives to improve peoples' livelihoods whilst promoting nature conservation and economic development.

PES, as a market-based or as an incentive-based instrument, has the ability to create and promote financial transaction platforms that are essential for sustainable development of communities and countries. REDD+ benefits directly from this PES principle because it is essential for REDD+ initiatives to have benefit-sharing mechanisms as part of its performance/results-based payment systems, where transparency and accountability are essential to sustain such transactions between service users and providers.

It is envisioned that IWRM will benefit from REDD+ and PES by adopting their project development strategies within watershed and water resources initiatives. IWRM implementation projects have the opportunity to build upon the bases of REDD+ and PES. For instance, PES schemes and REDD+ mechanisms have the ability to identify, evaluate, and value ecosystem services from a project area. Additionally, PES, and REDD+ carry the opportunity for IWRM to benefit from stakeholder representation built upon PES, and REDD+ projects.

In general, the three NRM frameworks have the potential to benefit from each other's development and implementation pathways. However, if political will is lacking to work on these topics or capacity building and knowledge supported with context-specific information and analysis, or accountability and transparency systems, or the willingness to work for the people and their livelihoods, then no natural resource management framework would be able to bring equitable benefit sharing and sustainable development.

Recommendations

The findings highlight the importance of better communication and coordination channels to promote a harmonization of objectives and activities between government agencies, donors, NGOs, and research institutions with respect to REDD+, PES, and IWRM.

KEY MESSAGES

It is possible to envision a more sustainable path for Nepal both because of a new political era in Nepal the country and recent efforts of government agencies, community-based groups, international and national NGOs, international donors, and research institutes.

It is recommended to put more effort into evaluating appropriate developments in the enabling environments for REDD+, IWRM, and PES, individually.

Natural resource management frameworks in Nepal are in a very early stage of development. In recent decades, the country has gone through a major political transition, switching from a monarchy-based governance structure to a federal system. The political instability and the very strict top-down government approach have been two of the critical issues with regard to the appropriate development and implementation of NRM frameworks, mechanisms, and tools in Nepal. Additionally, the lack of clear and defined roles from government institutions plus the absence of a defined policy and legislative framework have set back NRM development in Nepal as it has promoted a segregated coordination of horizontal and vertical institutional relations.

It is possible to envision a more sustainable path for Nepal both because of a new political era in Nepal and recent efforts of government agencies, community-based groups, international and national NGOs, international donors, and research institutes. Since new policy frameworks for IWRM and PES are being drafted and revised by the government, more capacities are being developed for government agencies and CBUGs and more demonstration projects and piloting of strategies are being implemented in addition to other critical changes occurring countrywide. Thus, it is recommended to put more effort into evaluating appropriate developments in the enabling environments for REDD+, IWRM, and PES, individually.

Additionally, the findings highlight the importance of better communication and coordination channels to promote a harmonization of objectives and activities between government agencies, donors, NGOs and research institutions with respect to all three management frameworks considered in this assessment. Finally, the roles and objectives of the new government institutions need to be carefully tailored in order to have natural resource management frameworks/mechanisms that are better-aligned, integrated and participatory for the people of Nepal with special attention to the poor, vulnerable and marginalized community groups.

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About ICIMOD

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

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Corresponding author

Rommel Arboleda

rommel.arboleda.ruales@gmail.com



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