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REDD+ related risks, opportunities and safeguards for biodiversity conservation

– a survey of issues and options in Lao PDR and Ecuador

Synthesis Report

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In October 2010, governments agreed to the Strategic Plan for Biodiversity 2011-2020 for halting and eventually reversing the loss of biodiversity of the planet. To build support and momentum for this urgent task, the United Nations General Assembly at its 65th session declared the period 2011-2020 to be the United Nations Decade on Biodiversity. It will serve to support the implementation of the Strategic Plan and promote awareness and the mainstreaming of biodiversity at all levels.

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Disclaimer:

This synthesis report is for information purposes. Its content and findings are intended to serve as technical input for the ongoing discussions on biodiversity safeguards and REDD+. The author' analysis, views and recommendations expressed in this report do not necessarily reflect any official government or other organization's policy or position.

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Preface

Intact ecosystems – particularly forests – contain significant amounts of carbon. Their conservation is therefore a relatively cost-efficient way to protect the climate. On this basis, REDD+ (Reducing Emissions from Deforestation and Forest Degradation) intends to create incentives for developing countries to reduce emissions through the protection and better management of forests. Apart from mitigation effects, REDD+ aims at generating multiple co-benefits for nature and people, such as the conservation of biological diversity.

There are, however, also some concerns associated with the implementation of REDD+, such as potentially negative impacts on biodiversity. These include ecological risks like the displacement of deforestation and degradation to areas which are low in carbon but rich in biodiversity or the reforestation with non-native tree species.

Safeguards can help to reduce such risks and maximise benefits for biodiversity conservation. In 2010, a first series of safeguards was adopted at the international level by the parties to the UNFCCC. In addition, other safeguard frameworks support the consideration of biodiversity in ongoing REDD+ processes, such as the Strategic Environmental and Social Assessment (SESA) under the Forest Carbon Partnership Facility (FCPF) or the REDD+ Social and Environmental Standards (SES).

In the future, the effectiveness of such standards will depend particularly on how they are defined, implemented and monitored on the national level. To inform such decision-making processes, BMZ has commissioned an expert study in 2011 to analyse existing conditions and experiences with regard to biodiversity safeguards for REDD+ in two partner countries of German development cooperation: Ecuador and Lao PDR.

This synthesis report summarises the key findings identified from interviews with relevant stakeholders and a thorough literature review, and makes a number of recommendations for the possible future consideration of potential risks and opportunities for biodiversity conservation in the context of REDD+, especially for policies, activities, projects and programmes supported by development cooperation. It is intended as a technical input to inform decision-makers and practitioners on how to systematically enhance the synergies between REDD+ and the implementation of the Convention on Biological Diversity.

Heiko Warnken
Head of division
Environment and Sustainable Use of Natural Resources

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Abbreviations

CBD	Convention on Biological Diversity
CCBS	Climate, Community and Biodiversity Standards
CDM	Clean Development Mechanism
CliPAD	Climate Protection through Avoided Deforestation Project
CO_2	Carbon Dioxide
COP	Conference of the Parties
COOTAD	Código Orgánico de Organización Territorial, Autonomía y Descentralización (Code on Territorial Organisation, Autonomy and Decentralisation)
DC	Development Cooperation
DoF	Department of Forestry (Lao PDR)
DoFI	Department of Forest Inspection (Lao PDR)
ESMF	Environmental and Social Management Framework
FAN	Fondo Ambiental Nacional (National Environmental Fund)
FAP	Fondo Áreas Protegidas (Protected Area Fund)
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Programme
FRDF	Forest Resource Development Fund
FSC	Forest Stewardship Council
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HCVF	High Conservation Value Forests
IBA	Important Bird Areas
IGM	Improved Grassland Management
IGO	Intergovernmental Organisation(s)
IPCC	Intergovernmental Panel on Climate Change
KBA	Key Biodiversity Areas
Lao PDR	Lao People's Democratic Republic
MAE	Ministerio del Ambiente del Ecuador (Ministry of Environment of Ecuador)
NBSAP	National Biodiversity Strategy and Action Plan
NPA	National Protected Area (both in Lao PDR and Ecuador)
PA	Protected Area
PSB	Programa Socio Bosque (Socio Bosque Programme)
REDD+	Reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
REL	Reference Emission Level
SCBD	Secretariat of the Convention on Biological Diversity
SES	Social and Environmental Standards
SEPC	Social and Environmental Principles and Criteria
SESA	Strategic Environmental and Social Assessment
SUFORD	Sustainable Forestry and Rural Development project
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD Programme
VCS	Verified Carbon Standard
WB	World Bank
WCMC	World Conservation Monitoring Centre

1 Background

Deforestation and forest degradation contribute significantly to global anthropogenic greenhouse gas emissions (GHG) and global biodiversity loss (Shvidenko 2005, IPCC 2007, TEEB 2009). The IPCC estimates the annual anthropogenic GHG emissions from deforestation at 5.8 Gt CO_2 in the 1990s (Metz et al. 2007). Further, the adverse impacts of climate change constitute an additional threat to forest ecosystems, which results in a negative feedback loop leading to further stress on the multiple services they provide for humans (compare e.g. Nepstad 2008, Marengo et al. 2011). In recognition of these facts and the assumption that emission reductions from reduced deforestation and forest degradation could be achieved at comparatively reasonable costs (compare Eliasch 2008, Boucher 2008, Stern 2009), the REDD+ mechanism is currently negotiated under the United Nations Framework Convention on Climate Change (UNFCCC). Despite the fact that the primary function of REDD+ is, in accordance with the UNFCCC, the reduction of GHG emissions to prevent dangerous climate change, its potential contribution to the conservation of biodiversity was recognised at an early stage and has been brought into both the international discourse and negotiations process. This contributed to the emergence of key terms such as 'co-benefits, core-benefits, additional benefits, multiple benefits and safeguards' (see Karousakis 2009, Dickson et al. 2009, Sasaki and Putz 2009, SCBD 2009, Miles and Dickson 2010, Harvey et al. 2010, Midgley et al. 2010, Pistorius et al. 2010). Here, the terms referring to benefits stand for the various opportunities for conservation associated with REDD+ implementation, while safeguards refer more to applicable (minimum) standards for biodiversity conservation and the prevention of risks that REDD+ implementation could entail. The consideration of certain safeguards during REDD+ implementation and the monitoring and reporting thereof was first included in the UNFCCC COP decisions in Cancun (UNFCCC 2011). Since then, no significant further progress on the formulation of safeguards has been made under the climate negotiations.

One of the reasons for this is that the integration of further, more concrete formulations on the contribution of REDD+ to biodiversity conservation and the reduction of REDD+ related risks is generally challenging. This is par-

Rice cultivation close to Nam Phui National Protected Area, Thongmixai district, Lao PDR.

The Yunguilla cloud forest, located in the Tropical Andes Hotspot, contains some of the world's highest biodiversity.

ticularly true when it comes to realising synergies between the UNFCCC and the Convention on Biological Diversity (CBD). Many (developing) countries, for example, fear that the implementation, monitoring and reporting of safeguards will require significant additional resources, which would not necessarily result in additional financial benefits generated under REDD+. With regard to this particular concern however, some literature does indicate relevant evidence for increased financial benefits through the application of safeguards – see e.g. Obersteiner et al. 2009.

Outside and in parallel to the UNFCCC process, there are a number of international safeguards initiatives and frameworks which support a stronger consideration of biodiversity conservation in REDD+ projects and programmes. At the project level, the 'Climate, Community and Biodiversity Standard' (CCBS) (CCBA 2008), fostering the integration of best-practice and multiple-benefit approaches into REDD project design and evolution, plays an important role in the voluntary carbon market (mostly as a "co-standard"), also because it can result in higher revenues from carbon credit sales (Hamilton et al. 2010a, Hamilton et al. 2010b). Based on the CCBS, the 'Social and Environmental Standards' Initiative was developed and standards have been piloted in a number of countries and subnational administrative units (e.g. State of Acre, Brazil; Ecuador; Central Kalimantan, Indonesia; Nepal; Tanzania) (REDD+ SES Initiative 2010). The REDD+ SES are intended to be applied during the development, implementation and assessment of REDD+ programmes. At the international level, countries which receive support under the Forest Carbon Partnership Facility (FCPF) of the World Bank need to comply with a range of World Bank operational policies (BIC 2011). They have to implement, for instance, Strategic Environmental and Social Assessment (SESA) to ensure that REDD+ implementation complies with the established safeguards under the operational policies framework. In addition, the UN-REDD Programme has been developing its own safeguards approach, the Social and Environmental Principles and Criteria (UN-REDD 2011).

Yet, in many countries there is still a considerable lack of clarity what operational safeguards could look like, which particular risks they need to address and which opportunities they could realise. While a number of generic risks and opportunities of REDD+ have been identified specifically for biodiversity conservation, it still remains unclear whether they generally apply to each country and if – and how – potential risks can be prevented or opportunities can be seized. With regard to realising synergies between the UNFCCC and the CBD, there is e.g. the question in how far national conservation priorities reported to the CBD in national biodiversity strategies and action plans (NBSAP) or national gap analysis could benefit from REDD+. Similarly, another question is to what extent the design and implementation of a biodiversity safeguards monitoring and information system for reporting to the UNFCCC – as requested by the Cancún decision on REDD+ (1/CP.16; UNFCCC 2011) – could build on existing CBD monitoring and reporting infrastructure.

These open questions were – among other issues – points of departure for this study. Taking Lao PDR and Ecuador as case studies, the results and conclusions aim to concretise and provide valuable inputs to further the international discussions on REDD+ Safeguards and to develop REDD+ biodiversity safeguards and safeguards monitoring and information systems as a means to produce tangible recommendations and suggestions as to how technical advisory programmes and their partner institutions can better integrate aspects of biodiversity conservation (mitigating risks, realising benefits) into the development and implementation of national REDD+ strategies and projects.

2 Methodology

The approach of the study employed the following methods: Firstly, the authors reviewed available literature on REDD+ related risks and opportunities for biodiversity conservation, existing safeguards approaches and safeguards monitoring systems. Based on this review, the team developed guiding questions to determine:

- Whether or not the identified risks and opportunities apply to Lao PDR and Ecuador?
- Whether or not there are new risks and opportunities in each country?
- To what extent safeguards and their monitoring are applied in both countries and how this is operationalised?

Secondly, the team interviewed 40 key resource persons (involved either in REDD+ and / or biodiversity conservation) from a total of approximately 50 different organisations. This included interviewees from ministries, government agencies/departments, NGOs, IGOs, development cooperation agencies, the private sector and individual experts.

Plan for land use zoning on the village level in Sayabouli province, Lao PDR.

3 Results

3.1 Lao PDR

Although Lao PDR retains one of the highest proportions of forest cover in Southeast Asia, its forests have declined dramatically from originally 70% of the total land area to about 40% in 2010 (DoF 2011a), with an increasing rate of deforestation and especially degradation. It is a highly biodiverse country (e.g. part of WWF's Global Freshwater Ecoregions and a Tiger Range country) in which large proportions of the population depend often directly on ecosystems and the services they provide. An official strategy of the government of Lao PDR is to increase both forest cover and quality, and to use them in order to sequester carbon under the REDD+ mechanism. Lao PDR is a member of both the World Bank Forest Carbon Partnership Facility (FCPF) and the World Bank Forest Investment Program (FIP), but is not a member of UN-REDD yet. Currently a number of bilateral development agencies, NGOs and private investors are in the process of developing REDD+ projects in various locations within the country. With regard to the implementation of national and local REDD+ activities, interviews have confirmed and identified the following risks to biodiversity conservation:

Although Lao Savannah-type forests store less biomass than humid forests, they are still important for biodiversity conservation.

The Ecosystem of Dry Dipterocarp Forests in Lao PDR

In Laos, dry dipterocarp forests are situated in the central and southern parts of the country. They are found in more arid areas, on poorer soils, and store considerably less biomass than mixed deciduous or evergreen forests. They are characterized by flat, low elevation land with grass and herbs under widely spaced deciduous trees.

The ecosystem, however, also contains many permanent and seasonal pools of water, which are of great importance for a variety of wildlife, from large animals to rare waterbirds. They are reported to contain many endangered species such as Eld's Deer, Tigers, Asian Elephants, White-winged ducks and others. In Lao PDR, these ecosystems are not very well covered by the protected areas system. They have however been identified as a conservation priority by a number of international organisations such as IUCN and WWF.

- The risk of displacement ("leakage") from high carbon forest ecosystems to low-carbon forest ecosystems (under certain preconditions).
- An increased conversion of natural succession areas into tree plantations (afforestation)
- Not accounting and subsequently not addressing forest degradation, mainly through (illegal) logging
- Not addressing hunting and poaching as part of REDD+ implementation
- Not sufficiently supporting or benefiting the PA system as the cornerstone of the country's biodiversity conservation efforts

Apart from high-carbon evergreen rainforest, Lao PDR – together with Thailand and Cambodia – is also home to the dry dipterocarp forest ecosystems (and in Laos these are concentrated in the South of the country). Given the comparatively low carbon stocks[1] of these dry forest ecosystems, interviewees thought it unlikely that these forests would benefit from REDD+. On the contrary, it was reasoned that pressure on these dry dipterocarp forests could increase, as other forest ecosystems are increasingly put under protection or more sustainable harvesting regimes as part of REDD+ projects and programmes. In light of the fact that these dry dipterocarp forests are i) mainly situated in the lowlands and can thus be accessed easily, and that they are ii) generally suitable for conver-

1 App. 19t C per ha, as compared to app. 82 t C per ha in mixed deciduous and app. 240 t C per ha in evergreen forest ecosystems (Moore et al. 2011).

sion to agriculture, they are considered to be at risk of displacement.

Another factor in Lao PDR which will influence the success of REDD+ and its effects on biodiversity is related to what forest definition will be used under the national REDD+ strategy. Currently, there are indications that the government intends to keep tree plantations (such as rubber) as part of the forest definition, although as yet no specific information has been made available regarding final decisions. The inclusion of such plantations in the definition could potentially lead to an increase in plantation establishment triggered by REDD+. This could have effects on areas in different stages of natural succession (such as forest regrowth which is not yet forest as per definition), thereby also possibly affecting local biodiversity in such areas.

In some cases, interviewees also thought it likely that it would be difficult for Lao PDR to monitor and report forest degradation (both technically and from a lower cost-effectiveness perspective). Given the incidental difficulties in controlling widespread illegal logging [2], not monitoring and reporting forest degradation may also result in illegal logging not being addressed through REDD+, as financial incentives to do so would be insufficient. If this should be the case, there is a risk that REDD+ could fail to contribute to biodiversity conservation as continuous logging would undoubtedly reduce tree species diversity, reduce habitat quality for other species, and could also weaken ecosystem functioning (see e.g. Maestre et al. 2012).

Another anticipated possible shortcoming that did not appear in the literature review is a potential failure to address hunting and poaching. Some interviewees expressed their concern that REDD+ projects would focus on conserving forest biomass, without paying enough attention to other aspects of biodiversity conservation (e.g. animal species diversity). Hunting/poaching, which are also driven by the increasing wildlife trade with neighbouring countries, is a major driver of species loss in Laos. Unless REDD+ projects include activities to address hunting/poaching or the wildlife trade itself, then it is likely that REDD+ will be unsuccessful in this particular aspect of biodiversity conservation.

2 In this context it is also important to note that Lao PDR is currently in the process of strengthening its forest governance and law enforcement through the FLEGT process. This will include specific requirements regulating forest tenure and management as well as the development of a control system for timber production and trade, which will also be relevant for and support the implementation of REDD+ in the country.

Logging deck in a production forest in Sayabouli province, Lao PDR.

Finally, there is a perceived risk that REDD+ might not contribute to strengthening the National Protected Area (NPA) system. This in turn, could also then significantly reduce the potential for REDD+ to contribute to biodiversity conservation. Current REDD+ projects that focus on NPA have shown that at least historical deforestation in these NPA has been less than expected, making some NPA unsuitable candidates for financially viable REDD+ projects and therefore reducing potential benefits for PAs from compensation payments.

In a second step, the study also looked at potentials and opportunities associated with REDD+ with regard to biodiversity conservation. The interview results showed that much less information could be extracted for opportunities than for the perceived risks. Generally, there are certain expectations that REDD+ could contribute to financing NPA. Although a comprehensive mapping of general REDD+ suitability [3] for the NPA system has not yet been carried out, there are currently efforts in progress to undertake such an analysis and close existing knowledge gaps. Despite the incomplete data available, REDD+ projects in NPA and Protection forests should however principally be encouraged, even though they may not turn out to be viable in financial terms.

In addition to this, there are also plans by the Forest Investment Programme (FIP) to a) finance the upscaling of sustainable forest management in designated production and protection forests, which could lead to an increased

3 Suitability in the sense that a specific PA has experienced high deforestation rates in the past (i.e. a high baseline), and therefore qualifies for high theoretic emission reduction potential and associated REDD compensation payments.

Strategic environmental assessments can help to identify potential impacts of REDD+ projects on natural habitats.

designation of high conservation value forests (HCVF); and b), to finance the establishment of biodiversity corridors between NPA, which would increase connectivity.

Lao PDR is a participant of the Forest Carbon Partnership Facility (FCPF). With regard to the concrete application of safeguards, projects implemented under FCPF are required to carry out a Strategic Environmental and Social Assessment' (SESA), which includes an assessment of potential impacts of REDD+ implementation on biodiversity conservation. The SESA is also expected to generally comply with the existing safeguard policies of the WB, which – if properly applied – would address some of the risks identified (see Conclusions in Chapter 4). Work on the SESA has yet to be concretised; as such no reliable information is yet available regarding the effectiveness of the SESA in addressing risks and realising opportunities for biodiversity conservation in Lao PDR.

Although the current national REDD+ authority (Department of Forestry – DoF) appears to proactively follow some opportunities (such as providing support to NPA), in general it is preferable to follow a "do-no-harm" approach, where certain minimum safeguards are adhered to. This is to keep additional monitoring and reporting requirements low. For nested REDD+ projects, ideas on safeguards include e.g. a CDM-like approval process, during which the authorities would control the application of safeguards. However, such REDD+ specific safeguards still need to be developed. In terms of monitoring and the information system, there is a preference for government monitoring, followed by third party verification.

3.2 Ecuador

The Republic of Ecuador is a mega-diverse country set in the equatorial region of South America. The territory represents 2% of the Amazon basin, and hosts a variety of ecosystems and a high density of biological diversity. Ecuador has approximately 10 million hectares of ecologically native forest cover (39% of the country's area); and biodiversity and forests both form an important part of the nation's natural and cultural heritage and its economic foundations. More than half of the forested area belongs to indigenous and local communities. Forests generate important ecosystem services, such as water cycle regulation, raw materials, and carbon storage. However, Ecuador's deforestation rate is still among the highest in South America.

Over the years, Ecuador has developed a series of legal policies and national policies intended to create favourable conditions for sustainable forest management and for the sustained reduction of deforestation in the country. These provisions form a solid basis for defining its national REDD+programme, which specifically address issues of biodiversity conservation and its sustainable use, the rights of indigenous peoples, and the regulation of environmental services by the State.

The interviews conducted in Ecuador reveal two major perceived risks which have also been identified in the Lao PDR study: The risk of not monitoring and reporting forest degradation and subsequently not addressing forest degradation, and the failure to address other drivers of biodiversity loss such as hunting and poaching. While the Ministry of Environment (MAE) is generally intent on addressing forest degradation, a comparatively lower cost-effectiveness could make REDD+ an unsuitable tool to reduce forest degradation. However, in contrast to Lao PDR, Ecuador has other mechanisms in place – such as the Socio Bosque Programme (PSB) – which effectively address forest degradation. This "Forest Partners Programme" is a national effort linking nature conservation with poverty reduction through providing economic incentives for forest conservation. For a detailed description of PSB see de Koning et al. (2011).

Other risks, such as displacement ("leakage"), were not perceived as an immediate risk, mainly due to the distinct geographical division of the country. Although interview-

Forests, such as the Saint Lucia cloud forest, and their biodiversity form an important part of Ecuador's natural and cultural heritage.

ees did generally expect that REDD+ would likely focus on forest ecosystems in the Amazon (due to high carbon stocks and high deforestation rates; confirmed by the current spread of REDD+ initiatives), it was deemed unlikely that agriculture would shift geographically into dry forests in the coastal areas, as the region is already highly populated and available land is scarce. Furthermore, interviewees did not perceive the risk of REDD+ fuelling the conversion of biodiversity-rich non-forest ecosystems into tree plantations, since Ecuador has already explicitly excluded tree plantations from the forest definition.

In addition, two further potential shortcomings were mentioned by some interview partners: One is that REDD+ as it is scoped now will not contribute to the conservation of the Páramos, a vegetation form above the upper treeline in the Andes that is characterised by a variety of grassland and shrubland ecosystems. Although they are not classified as forests, the Páramos are also, among other things, of enormous importance for water retention and provisioning, and are therefore considered a conservation priority across administrative levels.

Another 'new' perceived limitation is that if REDD+ interventions would be based on historical deforestation mapping, there is a considerable risk of not addressing potential future deforestation, which, apart from new emissions, also entails further biodiversity loss. It was argued that historical deforestation mapping has a limited suitability to predict future deforestation insofar as a major driver of deforestation in the country has been the opening up of the Amazon region with new roads (either dedicated infrastructure projects, or related to e.g. mining and oil concessions). With regard to this limitation, the MAE is currently trying to identify drivers of deforestation and degradation which will allow the Ministry to identify potential future deforestation areas.

From a benefit and potentials perspective, the interviews have shown that Ecuador considers REDD+ as an important mechanism to achieve both a reduction of deforestation and forest degradation as well as a contribution to the conservation and sustainable management of forests and biodiversity. Together with the World Conservation Monitoring Centre, the MAE has carried out an initial multiple benefit mapping (Bertzky et al., 2010) to determine potential overlaps between REDD+ and biodiversity conservation. Key findings are:

- 52% of the country's biomass carbon is stored in its 110 Key Biodiversity Areas (KBA);
- Many areas that have been identified by the national gap analysis as conservation priorities do also contain high amounts of carbon, but largely do not have any protective status;
- Approximately one-third of Ecuador's biomass carbon is concentrated in protected areas and protection forests, while the other two-thirds are covered by the first two priority categories of the Socio Bosque Programme. However, only a fraction of the latter area is currently protected by contracts under the Socio Bosque Programme;

Illustration 1: Map of established and potential corridor initiatives in Ecuador. Source: MAE/GIZ, 2011.

With regard to concrete opportunities and benefits from REDD+ for biodiversity conservation, the most important issues mentioned in the interviews were:

- REDD+ potentially will be a tool to directly or indirectly contribute to sustainably financing the existing NPA system and the Socio Bosque Programme;
- REDD+ has potential to be used to incentivise subnational conservation, including the establishment of e.g. municipal PAs and corridors;
- REDD+ could support advancing land titling, especially of indigenous territories, and support the engagement and empowerment of indigenous communities in order for them to assume their rights under the REDD+ mechanism (specifically strengthening their capacities and legal means for protecting their territories and rights);

Where PA could directly benefit from REDD+ (in case of medium-high past deforestation rates), this potential for co-financing should be realised. This in turn would allow e.g. the Protected Area Fund (FAP) to divert conventional PA funding to those PAs which are underfunded and will most likely not benefit from REDD+. In addition, the government could impose a levy on REDD+ returns in order to increase the budget of the FAP. A similar idea was brought up for the Socio Bosque Programme. A share of proceeds from those PSB areas that would generate returns under REDD+ could go into the overall PSB budget for further expansion, i.e. to other non-REDD+ areas considered important for conservation, including e.g. the Páramos.

While contributions to the existing NPA system was deemed important, REDD+ was also considered as a potential opportunity to boost establishment of new PAs following different management objectives at the municipal, district and provincial level. In that respect, the relatively new code on territorial organisation, autonomy and decentralisation (Código Orgánico de Organización Territorial, Autonomía y Descentralización – COOTAD) from Oct. 2010 was mentioned as a valuable legal framework for subnational REDD+ action. As sub-national PAs must be budgeted-for by the respective jurisdiction, REDD+ could – in some areas with high past deforestation rates – fill financing gaps.

Similar to the study results for Lao PDR, REDD+ could also have potential to contribute to the establishment of new ecological corridors in Ecuador, or to contribute financing already established corridors, in case corridor areas have been subject to deforestation in the past (and additionality of efforts is given). Work on corridors of national and international importance is currently being supported by GIZ (see Illustration 1) and includes a mapping which would allow the potential for REDD+ support to be deter-

mined, once the distribution of historical deforestation has been identified and confirmed.

Another opportunity referred to was empowerment of indigenous peoples and communities, specifically strengthening their capabilities to protect their land from intrusion. According to Bertzky (2010), indigenous territories in the Amazon region contain around 80% of biomass carbon in that region. Activities such as land demarcation and titling, strengthening management capacities and informing indigenous peoples about their rights, including legal means to protect themselves against territorial infringements, could greatly contribute to reduced deforestation and forest degradation and thus biodiversity conservation. Without empowerment, it was argued, the assumed good stewardship of forest areas by indigenous peoples would be of little value if overwhelmed by external pressure.

Ecuador is currently in the process of the validation and assessment of the draft indicator framework of the REDD+ Social and Environmental Safeguards (SES), a voluntary national scale safeguard initiative of which Ecuador is a pilot country. With regard to biodiversity conservation, the SES contains provisions to prioritise biodiversity areas and improve their condition through REDD+, which is to be evaluated through a monitoring system. The intention is to collect the data through on-site surveys and where possible from existing (spatial) datasets. However, the method of monitoring will differ for carbon, safeguards and governance. The MAE intends to combine all data in a central database (registry) that will be used for reporting to the UNFCCC. REDD+ projects in Ecuador will also have to follow the government's safeguards approach and reporting procedures, for which the MAE intends to develop a National Information System on Social and Environmental Safeguards. Here, another plan is for projects to use centrally available data on safeguard indicators. To meet the increasing demand for monitoring capacity, the MAE is in the process of establishing a new monitoring unit.

Although the study and this report are not meant to be a comparative analysis, the results from Lao PDR and Ecuador indicate that although some risks and opportunities are shared they can also differ substantially from country to country and that safeguards for biodiversity conservation can be approached very differently.

Risks and Opportunities	Country Applicability Lao PDR	Ecuador
Perceived Risks		
Displacement to low-carbon forest ecosystems	Yes	No
Tree plantations	Yes	No
Not accounting and subsequently not addressing forest degradation	Yes	Yes
Not addressing hunting and poaching	Yes	Yes
No/little direct support to PA system	Yes	No
No contribution to the conservation of non-forest ecosystems	Not mentioned	Yes
Shortcomings in geographical focus (past deforestation instead of future deforestation)	Not mentioned	Yes
Perceived Opportunities		
Conservation corridors	Yes	Yes
Indirect support to the PA system (and PSB)	Not mentioned	Yes
Support to subnational conservation	Not mentioned	Yes
Further empowerment of indigenous peoples to protect their territories	Not mentioned	Yes

Illustration 2: Comparison of the perceived applicability of potential risks and opportunities of REDD+ for biodiversity conservation in Lao PDR and Ecuador.

4 Conclusion and recommendations

The results from the literature review and the analysis of the interview process have produced valuable information about the REDD+ related risks and opportunities for biodiversity conservation in Lao PDR and Ecuador. Based on the survey results and analysis, in this chapter we will draw a number of conclusions and formulate recommendations for decision-makers in both countries. In order to conclude and derive some detailed recommendations on REDD+ and biodiversity conservation for each country, we ask and attempt to answer the four following major questions:

1. Do the current safeguards adequately address the identified risks?
2. To what extent do the current safeguards capitalise (or plan to capitalise) on REDD+ for biodiversity conservation?
3. Would the planned safeguards monitoring system adequately capture compliance?
4. If not, which non-REDD+ safeguard approaches and monitoring systems could be used to supplement the current safeguards and its monitoring system?

Recommendations which apply for both countries are summarised in a separate chapter to avoid duplication (see Chapter 4.3). At the end of this section, the report will also give specific recommendations valid for development cooperation projects and programmes working in the field of REDD+ and biodiversity conservation and for the international debate and negotiations on REDD+ and biodiversity safeguards.

The forests of Lao PDR are home to a large diversity of species, such as this black langur.

4.1 Lao PDR

For Lao PDR, both the literature review and the interviews have confirmed that so far no safeguards specific to the REDD+ process have been formulated. In order to address the perceived risks posed to biodiversity by REDD+ we conclude that there is a need that – particularly – the following risks should be dealt with through safeguards in the future:

- Displacement of deforestation to dry dipterocarp forest ecosystems
- Increase of plantations through REDD+ and associated conversion of e.g. young forest regrowth (not yet forests)
- Not accounting for forest degradation
- Not addressing hunting and poaching

With regard to addressing the risk of displacement, a recommendation is that the Government of Lao PDR, in cooperation with the donor community, puts a geographical focus on dry dipterocarp forest ecosystems and any non-forest ecosystems that could potentially suffer from displacement for them, in order to particularly benefit from future projects and programmes engaging in biodiversity conservation.

In order to reduce the risk of REDD+ supporting tree plantation establishment, different options are available. One option would be to exclude plantations from the forest definition. Considering that this may not be viable, another option would be to determine that plantations will be counted as forests, but not for the purpose of carbon accounting under REDD+. In addition, afforestation/reforestation with tree plantations could be excluded as eligible project activity by national legislation. As in Ecuador, this would prevent attempts to use REDD+ for afforestation/reforestation with tree plantations. Alternatively, if one does not want to limit the prospective use of REDD+ for e.g. smallholder plantations, strong safeguards in the form of further definitions (what kind of tree plantations are permitted or not, and under which conditions)

would need to be put in place and monitored. In consideration of the currently low monitoring capabilities and only limited law enforcement, this could however encourage misuse or noncompliance with likely negative impacts for biodiversity conservation.

Reducing the risk of not accounting for forest degradation and subsequently not addressing it seems generally challenging. Development and application of a simplified (and thus more inaccurate) degradation monitoring and reporting system that would still be eligible for REDD+ funding (e.g. from bilateral or multilateral funding sources) could be one option to ensure that degradation is monitored. Such a simplified MRV approach was described by Bucki et al. (2012). Through this, reducing degradation could be incentivised and consequently tackled. Otherwise, support to the central government's efforts in combating illegal logging (e.g. through the current FLEGT process) seems vital to ensure that forest degradation is increasingly addressed, no matter whether it is systematically monitored or not. To ensure that REDD+ projects address forest degradation, we recommend this as a mandatory activity, even if the project will not monitor and account for forest degradation.

In addition, we consider the risk that biodiversity loss as a result of hunting and poaching would not automatically be addressed by REDD+ activities as tangible. In the instance of Lao PDR, our recommendation here is to make anti-poaching activities a mandatory activity in REDD+ projects, provided of course poaching is a threat in the project area. Since the Department of Forest Inspection (DoFI) is also responsible for reducing poaching, strengthening the DoFI and hereby specifically its provincial field units for the purpose of reducing illegal logging and hunting is also considered beneficial in this respect.

To make further use of REDD+ for biodiversity conservation, we suggest analysing options for the introduction of a 'conservation levy' and/or applying the stock-flow approach (Cattaneo et al. 2008, see Chapter 4.3.1). Both approaches would be a significant step towards ensuring that conservation priority areas, which are not (yet) under threat from deforestation, would still profit to some extent from REDD+.

As some of the current REDD+ projects in NPA show, not all NPAs will be able to benefit financially from REDD+, specifically under a historical baseline/REL approach. Determining whether or not a 'conservation levy' on REDD+ activities is a realistic option in terms of political will and administrative procedures is beyond the scope of this study. Still, as in Ecuador, there is precedence for such a levy in Lao PDR: The Forestry and Forest Resource Development Fund (FRDF). The FRDF is sourced from the sales of timber and

The establishment of rubber plantations has been a significant driver of natural forest loss in South East Asia.

NTFP (reported to be highly volatile) with the aim to support among other things the *[...] management of Protected Forest Areas and National Biodiversity Conservation Forests, plantation establishment, maintenance and regeneration of degraded forests and forest lands, watersheds, environmental protection, wildlife conservation [...]* (Muziol et al. 2010). In a similar way, using a share of proceeds from REDD+ revenues, both government and private, to support biodiversity conservation and channelling it through the FRDF (or other funding mechanisms) to NPAs and other conservation activities that would not benefit from REDD+ is considered an option that we recommend exploring.

At this stage there is no information available about the effectiveness of the envisaged safeguards and safeguards monitoring and reporting system, i.e. how well risks would actually be mitigated and opportunities seized. It is assumed that the development and establishment of such a system will take considerable time, which is problematic considering the fact that REDD+ projects are already being planned and implemented in Lao PDR. As a result, we recommend a phased-approach to safeguards (monitoring). In Phase 1, while the government develops and tests its safeguards (monitoring) system, internationally recognised standards such as the CCBS must be obligatory for any REDD+ project/activity being implemented within the country. This way, the pressure to quickly develop such a system would be relieved and the high credibility of e.g. the CCBS would ensure international acceptance and recognition. In Phase 2, the dedicated national safeguards (monitoring) system (gradually) builds on the experiences from Phase 1 and gradually complements, or as required replaces, this interim approach.

4.2 Ecuador

The Government of Ecuador is very pro-actively pursuing a strategy that tries to capitalise on REDD+ for biodiversity conservation whilst minimising potential negative impacts on biodiversity. Its commitment to the conservation of biodiversity is not only reflected by its participation in the REDD+ SES initiative and its national REDD+ programme, but also the constitution and a number of other legal and policy requirements highlight the importance of biodiversity conservation and maintaining ecosystem services. While there is without doubt considerable room to improve the actual implementation of these provisions, Ecuador has proven however e.g. with its Socio Bosque Programme that there is strong commitment to addressing the challenges associated with deforestation and biodiversity conservation. It is noted that there is a high degree of ownership among government stakeholders, and that MAE pursues an ambitious and exemplary REDD+ approach. A possible limitation for the full success of REDD+ could however be the current lack of availability of upfront and incentive finance to support the mechanism, which should be considered and supported as an important success factor by both bilateral and multilateral donors.

In Ecuador, interviews have shown that many risks either do not apply or are effectively neutralised the existing legal and policy framework for the forestry system. A positive example is, for instance, the deliberate exclusion of tree plantations from the forest definition – a simple yet also very effective safeguard. Nevertheless, we believe that two risks do still warrant additional attention: the risk of insufficient monitoring and subsequently addressing forest degradation, and the risk of not addressing hunting and poaching in REDD+ projects.

The most significant risk to biodiversity from our perspective is the possibility that forest degradation will not be addressed by REDD+ (not considering other government efforts like PSB and standard law enforcement). A possible reason for this could be the technical difficulties and high costs associated with monitoring forest degradation, which could in turn result in forest degradation being unaccounted for. This, in consequence, would mean that the Government of Ecuador would not be able to receive benefits for reduced forest degradation, even though forest degradation was tackled on the ground. While the MAE certainly has the political will to account for forest degradation, financial considerations may overrule such ambitions. Should these assumptions hold true and forest degradation would not be adequately addressed by the national REDD+ strategy, then our recommendation would be to address forest degradation mainly through PSB rather than REDD+. This may require adding additional priority areas or rearranging current priority areas within PSB.

In general, exploring further complementarities between REDD+ and PSB is an interesting proposal and should be considered. PSB, for example, is also the recommended potential solution to address another perceived REDD+ risk: that REDD+ efforts will focus on areas with high past deforestation rates, which is the result of choosing (or having to choose) a historical REL approach. This reactive approach could lead to significant forest loss (and thus both biodiversity and biomass) in future deforestation hotspots that are not factored into the REL. To prevent this, and also address the previously mentioned risk of not addressing forest degradation, our recommendation is to pursue a pragmatic and effective approach combining the respective strengths of both REDD+ and PSB. From our perspective, under a historical REL approach, REDD+ should be used in areas that have been subject to deforestation in the past, while PSB could focus **more** (but not exclusively) on areas that are expected to become future hotspots of deforestation and forest degradation.

Last but not least, we recommend that REDD+ activities, no matter whether they are government-led or private, should be obliged to include measures which also address biodiversity threats such as unsustainable hunting, poaching, as well as soil and water contamination. For private sector REDD+ projects, an analysis of potential biodiversity threats and appropriate response measures could be included in the approval process of such projects.

In terms of realising conservation opportunities, both the mapping of multiple benefits and Ecuador's REDD+ SES approach show that the MAE intends to maximise biodiversity conservation under REDD+. However, at present neither initiative has reached a stage which would already allow the tracking of tangible biodiversity benefits in terms of e.g. indicators like the area of protected dry forests, or similar. To reach this stage, we recommend implementing an extended mapping approach as outlined in Chapter 4.3.2.

The final recommendation on how to capitalise on REDD+ for biodiversity conservation in Ecuador is to focus on conservation of the Páramos ecosystem (see further above). Apart from benefiting through restoration in degraded areas, the voluntary carbon market could in this context play a (bridging) role as long as the scope of REDD+ is only on forests. The Verified Carbon Standard (VCS 2011), for example, features a project category called 'Improved Grassland Management' (IGM) that includes a number of mitigation activities that would be widely applicable to improved Páramo management. Hence, we recommend that the MAE, in cooperation with Páramo conservation stakeholders, initiates and supports a VCS IGM Páramo pilot project to explore this possibility for co-financing Páramo conservation. It should be noted that unlike voluntary carbon market REDD projects, IGM projects at this stage do not present any problem with double counting.

Considering the current formulation in Ecuador's REDD+ SES approach, risks and benefits would be identified and mitigated/realised. The MAE is currently in the process of validating and assessing the REDD+ SES indicators in the field for the first time, which means that implementing a comprehensive monitoring of compliance under the National Information System on Safeguards will still require additional time in order to also consider other relevant safeguards mechanisms.

The present stage of validation and assessment of the REDD+ SES indicators is intended to assess the indicators in terms of applicability and feasibility as well as to identify required sources of information and to make appropriate technical arrangements for the verification of indicators. Operationalizing this will require significant resources and capacities, which according to some interviewees are not yet readily available and still needs to be developed. According to several interviewees, lack of human resources for monitoring is also still a problem. In addition, the current number of 91 indicators, most of them relating to social safeguards, seems very high, even if 50% of them could be collected through spatial analysis. In addition, many indicators have not yet specified in terms of time and quantity. While this may not be necessary for some indicators, it would be desirable e.g. in the case of biodiversity benefits to measure progress. With regard to the biodiversity safeguards indicators, our recommendation would therefore be to further specify the indicator sets in terms of time and quantities with a view towards making data collection effective but as easy as possible.

Afforestation activities should prioritize the use of native species and be located strategically to enhance ecosystem connectivity.

Ocelots used to be hunted extensively for their fur, but protection efforts have led to a recovery of numbers in recent years.

4.3 Recommendations for both countries

The literature review and the interviews have shown that Lao PDR and Ecuador are currently at different stages in the development of REDD+ and the associated safeguards framework for biodiversity conservation, whilst the analysis has served to illustrate a number of conclusions and recommendations shared between the two countries.

Based on the interview results, it is recommended that both countries consider the introduction of a 'share of proceeds' and/or a so called 'stock-flow approach' which would both be instruments to ensure that conservation priorities, not directly eligible for REDD+, would still profit to some extent through a controlled redistribution of benefits (see Chapter 4.3.1 for a detailed account of the stock-flow approach). In this context, the recommendation of putting a 'conservation levy' on all REDD+ activities or using a certain percentage of proceeds from REDD+ revenues for biodiversity conservation are options that were mentioned by several interviewees. While the basic idea is quite simple, determining the right amount/percentage, gaining acceptance from those who would get taxed and determining the 'target fund' (where the money should be directed) might prove difficult. Similar examples, however, can already be found e.g. in Lao PDR and Ecuador. In Lao PDR, for instance, the Government has pioneered a 1% levy on hydropower generation by prime ministerial decree which is intended for conservation purposes. In Ecuador, the Quito water fund, for instance, puts 2% of its annual revenues into conservation activities. Moreover, as a target fund or administrative body, the National Environmental Fund of Ecuador (Fondo Ambiental Nacional – FAN) would certainly be a thematically suitable – and in management terms professional – and credible institution to manage and administer such financial resources. Such examples could give valuable information and experiences to developing similar approaches for REDD+ and biodiversity conservation in Lao PDR and/or Ecuador.

4.3.1 The stock-flow approach

The stock-flow approach could be used as a mechanism to divert REDD+ funding from areas with high historical emissions to e.g. areas important for biodiversity conservation but with low historical emissions. Simply speaking, the stock-flow approach does not only take emissions (flow), but also remaining forest carbon stocks into account when it comes to revenue sharing. A further variation is the so-called 'stock-flow with targets' approach, where emission reduction targets are also taken into account. Another variation that the author recommends would reward e.g. NPAs for both achieved emission reductions and remaining forest carbon stocks based on a yet to be defined ratio (e.g. 50%/50% or 70%/30% respectively for emission reductions and remaining forest carbon stocks).

Illustration 3 (below) outlines the procedure of the stock-flow approach (while also covering other components). Essentially, emission reductions from various REDD+ activities and entities (such as e.g. through PAs A and B in Illustration 4 below) would be registered by the national registry before being sold to an international fund or to the carbon markets. Revenues would flow to a national REDD fund or similar financial mechanism, and would then be redistributed to the individual subnational entity (such as a PA) based on both emission reductions and remaining forest carbon stocks.

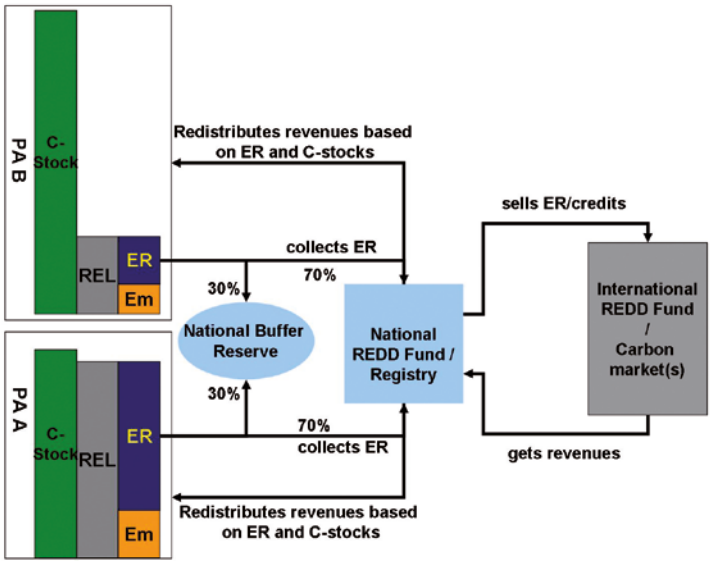

Illustration 3: Simulated procedure and flow of revenues under a stock-flow approach (Source: Schmidt 2012, unpublished)

The following chart (see illustration 4) illustrates how a variation of the stock-flow approach (based on emission reductions and remaining forest carbon stocks) would affect revenue distribution between two fictional PAs (A and B) that differ considerably in terms of emission reductions and remaining forest carbon stocks. Illustration 4 shows a 70%/30% ratio compared to an approach purely based on emission reductions. PA B in this case represents a PA that would not gain much, if at all, from REDD under a pure emission reduction based approach.

It becomes evident that the stock-flow approach could be a valuable tool to promote the redirection of revenues to reward entities that have previously performance well in terms of forest conservation or that would not gain from a historical REL approach, such as already well-protected areas. Nevertheless, when thinking about applying the stock-flow approach it is important to be cognisant of the following points:

a) Revenues are usually only generated by emission reductions, which means that the stock-flow approach requires emission reductions to finance forest carbon stocks. It is merely an internal redistribution mechanism based on remaining carbon stocks in year Y and emission reductions achieved in period x-y. It can only be used as long as the redistribution towards remaining forest carbon stocks does not endanger the financial viability of emission reduction efforts;

b) Acceptability: this approach requires both political will and support from entities who would receive less under a stock-flow approach than under a purely emission reduction based approach;

4.3.2 REDD+ and biodiversity conservation opportunity mapping

In order to be able to maximise the potential of REDD+ to contribute to biodiversity conservation in specific sites, we recommend carrying out a general mapping exercise in order to visualise biodiversity conservation priorities, carbon stocks and past deforestation (and projected deforestation if considered under the REL). This would allow those areas important for biodiversity conservation to be determined, which also simultaneously have significant emission reduction potential and could therefore directly profit from REDD+ interventions. Based on approximate carbon stock data and historical deforestation rates, rough initial baselines and the theoretical mitigation potential could be assessed to estimate the financial significance of prospective REDD+ revenues in biodiversity priority areas. In order to determine biodiversity conservation priority sites, we recommend an aggregation of the following existing conservation priorities and datasets:

	Stock-flow approach		Normal ER-based distribution	
	PA A	PA B	PA A	PA B
Stock [tCO2]	200.000.000	1.200.000.000	200.000.000	1.200.000.000
ER [tCO2]	100.000	20.000	100.000	20.000
ER to Buffer [tCO2]	30.000	6.000	30.000	6.000
Total ER for sale [tCO2]	84.000		84.000	
Price per ER [€]	5		5	
Total Revenue [€]	420.000		420.000	
30% Revenue allocated for C-stocks [€]	126.000		0	
70% Revenue allocated for ER [€]	294.000		420.000	
Revenues for C-stocks per PA [€]	18.000	108.000	0	0
Revenues for ER per PA [€]	245.000	49.000	350.000	70.000
Total Revenue per PA [€]	**263.000**	**157.000**	**350.000**	**70.000**

Illustration 4: Simulated stock-flow approach with a 70%/30% ratio compared to a purely emission reduction based revenue approach (Source: Schmidt 2012, unpublished)

- National and subnational protected areas and other forest protection categories
- Areas identified in the national gap analysis (once completed)
- High Conservation Value Forests (HCVF). In Lao PDR these have e.g. been mapped inside selected production forests supported by the SUFORD project
- Biodiversity conservation corridors
- International conservation priorities such as Important Bird Areas (IBAs) and Key Biodiversity Areas (KBAs)
- Centres of agrobiodiversity
- Other forest areas considered important for biodiversity conservation, which do not yet have any protective status. From the authors' perspective, this should constitute large areas of unfragmented, and preferably old growth, forest ecosystems

These biodiversity datasets should be combined into a conservation priority index that would serve as a basis for steering REDD+ activities within the country, no matter whether they are implemented by government or privately. Regulation and/or incentives (less fees, taxing, etc.) could be used to steer private REDD+ projects towards conservation priority areas. During the process of setting biodiversity conservation priorities for REDD+, biodiversity conservation organisations and experts should be consulted. The lack thereof was a criticism voiced e.g. by several interviewees in case of Ecuador. In Ecuador, for example, such mapping would also need to be aligned with the PSB priority mapping, in order to avoid overlap and to fully maximise coverage. As aforementioned, one option would be to have the REDD+ focus on areas considered as biodiversity conservation priorities with high to medium past deforestation rates (enough past deforestation to generate sufficient returns), while PSB could partly shift its focus towards anticipated future deforestation hotspots, degradation hotspots, and the Páramos.

4.4 General recommendations for development cooperation

Apart from the respective country recommendations, this synthesis report would like to make a number of recommendations for policies, activities, projects and programmes supported by development cooperation.

A central recommendation is that the consideration of biodiversity safeguards should be more systematically dealt with in DC projects generally, including project planning. An important basis for this would be for REDD+ safeguards guidelines and approaches to also be included in sectoral concepts (e.g. focus on forest protection and sustainable forest management rather than afforestation/reforestation, mitigation measures to prevent displacement into low-carbon forest ecosystems and other important ecosystems).

While maximisation of biodiversity benefits in REDD+ programmes and projects is generally desirable from our perspective, this may not be the case in all situations or for all governments. There might be projects which focus on demonstration of certain technical aspects or specific capacity-building efforts, whereby concrete additional benefits for biodiversity conservation cannot be achieved or would be difficult to integrate. Taking this into account, we recommend that on a country-by-country and project-by-project basis, a decision should be taken during project planning as to whether a REDD+ project or programme should pursue a more passive 'no harm' or a proactive approach to maximise biodiversity benefits.

Following this conclusion, it is recommendable that development cooperation develops a systematic way to integrate both a 'no harm' and 'maximising biodiversity benefits' approach into project planning and implementation. Here, we shortly sketch how such a systematic way might look. Depending on the decision taken ('no harm' or 'maximising biodiversity benefits'), we propose the following action:

- In the case of 'no harm': To apply a REDD+ biodiversity risk management approach as outlined in Illustration 5 and described below;

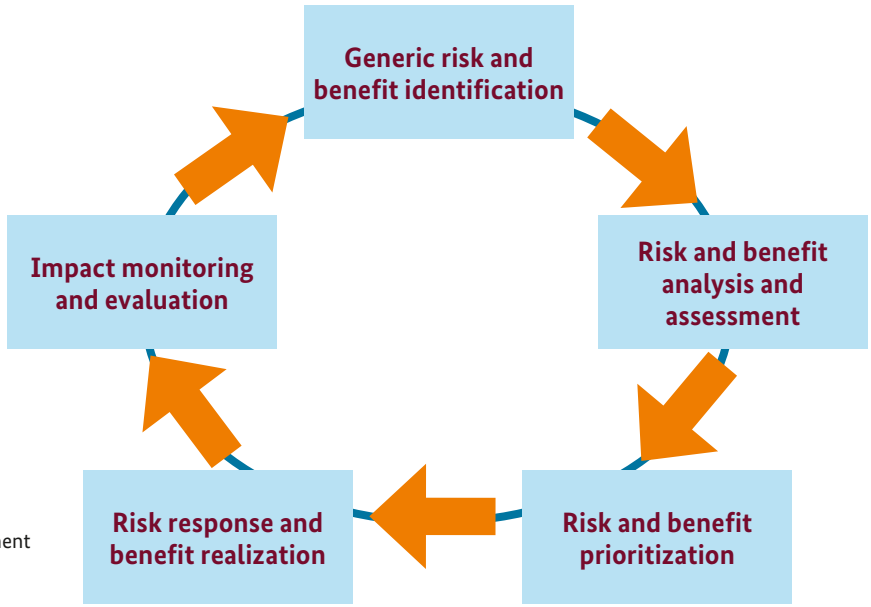

Illustration 5: Proposed REDD+ biodiversity conservation risk and opportunity management approach

- In the case of 'maximising biodiversity benefits': in addition to the risk management approach, a benefit management approach including a REDD+ biodiversity priority mapping would need to be carried out;

The risk and benefit management tool could be built on generic and adaptive risk management approaches (compare e.g. Ibisch et al. 2009 and Münzel and Jenny 2005, as cited in Ibisch et al. 2009), and could include the following iterative steps (see also Illustration 5 below):

1. **Generic risk and benefit identification:** listing of risks and benefits through brainstorming and literature review;

2. **Risk and benefit analysis and assessment:** further analysis of the identified risks and benefits to answer the following questions:
   a. Does the risk really apply? If yes, what is the likelihood of the risk materialising (now and in the future), and what would be its potential impact?
   b. Can the benefit actually be realised and how valuable is the realisation of that benefit to the government or the wider conservation community, etc.;

   These steps serve to produce a consolidated list of risks and benefits that are considered important to address/realise;

3. **Risk and benefit prioritisation:** even a consolidated list may contain too many risks and benefits to address at once. Hence, this step aims at rearranging the consolidated list of risks and benefits to arrive at a priority list for risks and benefits. In the instance a 'maximising biodiversity benefits' project is pursued, the prioritisation needs to be complemented by a spatial priority mapping. Here, all available spatial data on biodiversity conservation (priorities) would be combined to generate a biodiversity conservation priority index. This index would be matched with a historical deforestation map (use of coarse data if medium resolution is not available or proxy indicator data, such as e.g. accessibility), and where available carbon stock data to determine where REDD+ could contribute (most) to biodiversity conservation;

4. **Risk response and benefit realisation:** this step involves the design and implementation of risk mitigation measures. Most likely, it would involve adding further or adapting existing project activities to address risks and capitalise on benefits. In the case of a 'maximising biodiversity benefits' project, this step would entail locating the project (activities) in the identified priority areas;

5. **(Impact) monitoring and evaluation:** this step involves the monitoring of project activities to determine whether or not the desired impact is achieved. In addition, the consolidated list of risks and benefits should also be monitored according to possibility, in order to be able to react to changes in risks and opportunities. This is meant to be an iterative approach, and the results from Step 5 would feed into other steps where applicable (e.g. monitoring of risks may lead to their reassessment and reprioritisation). Finally, Step 1 should be repeated regularly to see if new risks and benefits or other opportunities have emerged;

An easier way to realise biodiversity conservation opportunities in REDD+ projects would be to focus on those REDD+ activities that most probably yield the highest positive impact for biodiversity conservation. Usually, this is associated with the protection of natural or even old growth forest areas. While the findings of this study generally support such a prioritisation, choosing the most suitable sites still remains a critical issue. To give an example, the protection of highly fragmented and small natural forest areas that may be considered important by conservationists could seem a questionable priority for others, especially if connectivity and enlargement of these small fragmented areas cannot realistically be achieved. Consequently, a simplified prioritisation of activities should therefore still be accompanied by a priority mapping.

Further to these aspects of systematic safeguard integration into projects and programmes, we would also like to make a number of more thematic and activity-related recommendations, which are as follows:

- Consideration of biodiversity conservation when setting incentives/compensation payments in REDD+ projects, e.g. the new REDD+ Early Mover Program;
- Testing of stock-flow or share-of-proceeds approaches as mechanisms for making available financing for biodiversity conservation through REDD+;
- In case of lack of time or internal resources to develop and monitor national safeguards, consider the (temporary) application of safeguards through mandatory use of internationally recognised standards, such as the CCBS;
- In cases where important conservation priorities fall outside the scope of UNFCCC REDD+ (e.g. wetland and grassland conservation), consider supporting other carbon finance opportunities, e.g. in the voluntary carbon market;
- Promote the use of existing safeguard systems (e.g. SESA/ESMF, SES, SEPC, CCBS, HCVF) and support their professional implementation specifically with regard to defining adequate indicators;
- Consider financing the development and set-up of a central biodiversity database/clearinghouse to collect past and ongoing biodiversity-related data that could be used for a safeguards monitoring and reporting system;

In order to demonstrate that the application of safeguards and especially maximising biodiversity conservation benefits can also pay off financially, we recommend that quantities are determined in accordance with the biodiversity conservation benefits involved, especially for development projects and programmes which provide incentives and/or compensation payments. In relation to the latter, this amount should consider both the type of activities and the respective location. To give examples, under such a system more incentives or compensation payments could be provided for:

- Avoided deforestation of natural or old-growth forest than for afforestation;
- Activities in and around areas identified as conservation priorities (e.g. PAs, conservation corridors) than for non-priority areas;
- Permanently establishing new PAs, corridors or other conservation schemes than for temporary conservation measures;
- The introduction of certified sustainable forest management practices (e.g. FSC) than for non-certified sustainable forest management practices;

Of course, such a system based on a different scale of amounts would need to be country or even project or programme specific, depending on the REDD+ activity options available within each individual context. With regard to the REDD+ Early Mover Program, both incentives and payments for emission reductions could also be increased in case a REDD+ project or activity is certified by an internationally recognised standard such as the CCBS (and that is not seeking voluntary carbon market finance), which would guarantee any additional biodiversity benefits have been captured by the activity and/or project.

Provided the partner country shares the view that REDD+ should also be used for conservation purposes outside

established concepts (e.g. no or little historical emissions from deforestation and degradation, currently no additionality), we suggest that development cooperation supports testing indirect and internal redistribution concepts for financing conservation through REDD+. As in the recommendations for Lao PDR and Ecuador, these could either be achieved by introducing a 'share of proceeds' or a stock-flow approach. Both concepts have advantages and disadvantages that should be taken into account when considering their application.

The 'share of proceeds' approach seems generally simpler and more straightforward in terms of additional effort, as it should usually be possible to introduce through a regulation (provided the required political will). In our eyes, a share of proceeds should be applied to all REDD+ activities in a country, including those implemented by the government or the private sector. In case of government projects, an internal 'set-aside' rather than a 'share of proceeds' could be considered. The 'share of proceeds'/'set-aside' should be applied irrespective of the source of funding (multilateral or bilateral fund, voluntary carbon market or a national, regional or global emission trading scheme). Provided REDD+ transactions are recorded in a registry, this could technically serve as the basis to determine the 'share of proceeds'. If not, other sources of information or systems to account for annual emission reductions and their sale (e.g. annual reports from projects) could be used. Furthermore, it is important to give careful thought to the question of what the basis for the calculation of the 'share of proceeds' is (e.g. emission reductions, gross revenues from credit sales, net project revenues). Application to gross revenues from credit sales would e.g. punish those REDD+ activities / projects that have high mitigation costs per t of CO_2.

The channelling of the proceeds to specific conservation activities should rely on existing financial infrastructure and mechanisms, wherever possible. In case a country already possesses a national conservation fund or a similar instrument that meets certain accountability standards (such as FAN in Ecuador), such a fund could be used. Alternatively, in the absence of such a fund, the money could be channelled through the regular government budget to provide additional finance e.g. to the PA system and other government institutions responsible for conservation. If money is also to be provided to non-government conservation initiatives and a national conservation fund does not exist, establishment of such a fund should be considered (or existing instruments could be adapted).

A possible disadvantage of such a 'share-of-proceeds' approach is that it could be perceived negatively as a blanket conservation tax, disregarding the conservation efforts that individual projects are possibly already undertaking. If desired, this could of course be considered by reducing the 'share-of-proceeds' or even exempting those REDD+ activities and projects that are evidently and verifiably already contributing to biodiversity conservation (e.g. projects certified by CCBS). This would enhance perceived equity, but of course would also increase the administrative burden, as procedures for dealing with reductions and exemptions would need to be established and carried out. In our eyes, this additional effort speaks against a differentiated 'share-of-proceeds'. Another possible disadvantage of a 'share-of-proceeds' is that it may reduce the financial viability of REDD+ activities and projects, depending of course also on the actual percentage and the measure to which the percentage is finally applied. This could specifically be relevant in the early stages of a REDD+ activity or project, when returns could still be to a certain extent volatile or insufficient. While general overtaxing needs to be avoided not to discourage REDD+ action and investment, concerns that a 'share-of-proceeds' would reduce financial viability in the early stages of a project could be accommodated by gradually introducing a 'share-of-proceeds' approach or by defining a minimum profit threshold before it be applied.

In contrast, a stock-flow approach would require more effort than a 'share-of-proceeds' approach, but payments for conservation would be performance-based (for not reducing the stock) similar to other REDD+ activities. The stock-flow approach can be applied at various administrative levels including an entire country, individual jurisdictions or other discrete areas. A country or jurisdictional-scale stock-flow approach would be preferable to incentivise large-scale conservation. However, it should be noted that the stock-flow approach to date remains a theoretical concept. We therefore recommend testing its practicability for wider use at the project level, preferably in a country where development cooperation is already supporting the implementation of a REDD+ project that includes performance-based payments for emission reductions. Fur-

thermore, to demonstrate its use for those conservation priority areas that would otherwise not benefit from REDD+, the project would preferably be situated in or around such a conservation priority area (e.g. in and around a PA as is the case e.g. with the CliPAD project in Lao PDR) and should include an area which has little or no baseline emissions (e.g. core zone of a well protected PA or a currently inaccessible forest area). In addition to the usual REDD+ monitoring requirements, total forest carbon stocks would need to be assessed for each monitoring interval and would form the second basis for distributing revenues (in addition to emission reductions).

The significant difference between the stock-flow and the 'share-of-proceeds' approach is that the stock-flow approach directly integrates and rewards conservation of carbon stocks irrespective of the past, actual or future threat. The carbon stock itself would be comparable to a financial stock that generates an annual interest rate or dividend.

Although many forested PA are likely to gain from the stock-flow approach as they usually feature comparatively intact forests with high carbon stocks, this may not always necessarily be the case. A possible shortcoming with regard to conservation is that payments are subsequently based again only on carbon (though it is in the form of carbon stocks). Even if the stock-flow approach is developed focusing on carbon stocks, it could also be extended to include biodiversity metrics to address this shortcoming. Apart from carbon, the 'stock' could also include e.g. the amount of old-growth forest ecosystems, the degree of forest fragmentation, the population of certain indicator species, or any other metric that seems suitable to make a statement on the 'health' or quality of the (forest) ecosystems that forms the basis for incentives or financial rewards. Another perceived advantage of the stock-flow approach is its reliance on the existing revenue sharing system (for emission reductions).

We believe that both the 'share-of-proceeds' and the stock-flow approach are suitable instruments to further finance biodiversity conservation through REDD+. Applicability should be determined on a project-by-project basis depending on the circumstances in each country. Also, the approaches are not mutually exclusive but could be combined to further increase REDD+ finance for biodiversity conservation.

With regard to existing possibilities and initiatives to further develop REDD+ taking into consideration the above mentioned recommendations, interview results have shown that, in Lao PDR in particular, capacities to do so are currently limited. While this contributes to the delay of government-led REDD+ implementation, including work on safeguards, this does not necessarily apply to private sector REDD+ projects already being implemented in the respective country. This could, or in fact probably does already, lead to situations where certain REDD+ projects are being carried out without sufficient or potentially any consideration of safeguards (neither biodiversity nor social). To address this problem, we believe that the earlier recommendation for Lao PDR to temporarily mandate the compulsory use of internationally recognised standards such as the CCBS could be generalised for countries in similar situations. We recommend that development cooperation should promote this approach while supporting the development and application of existing national-scale safeguard frameworks such as the SES, which should ideally be more ambitious and targeted than existing international systems. Drawing on the results from Ecuador, development cooperation with its considerable experience from applying results-based management also seems to be very well placed to support the formulation of effective indicators that allow for efficient and transparent monitoring. Experience shows that poor data availability or quality – or both – is a recurrent issue in many developing countries and must be addressed in order to enable functioning monitoring systems. Having said this, a central open-access biodiversity database or clearinghouse mechanism seems key to reduce monitoring costs for biodiversity safeguards and to improve spatial prioritisation for conservation. In order to enhance the quality of monitoring systems, international development cooperation should consider supporting the development, establishment and initial operation of such (geo)databases including the collection and feed-in of existing data and studies to fill current gaps.

One of the final recommendations of this report is based on our findings and conclusions on the Páramos in Ecuador. Although conservation of non-forest ecosystems could also be supported through both the 'share-of-pro-

ceeds' and stock-flow approach, we generally recommend direct carbon financing through the voluntary market or emerging regional emission trading schemes, wherever possible. In the instance that a country has significant non-forest conservation priorities such as grasslands or wetlands, these could presently be developed into VCS projects under the categories 'improved grassland management' and 'peatland conservation and rewetting'. Given the significance of these areas to provide important ecosystem services to humans, it is generally deemed important that development cooperation increasingly also considers and supports such projects. Unlike REDD projects geared towards the voluntary market, supporting such grasslands or wetlands projects would at present not contradict existing UNFCCC negotiation positions with regard to carbon market financing and national/sub-national approaches. They would also, currently, not pose a problem with regard to the issue of double counting.

Furthermore, it is recommended that during the planning and design of new conventional conservation projects financed by development cooperation, the findings from a REDD+ risk and benefit analysis should always be taken into account. Effectively, this means that conventional conservation projects should consider targeting those conservation priorities, including non-forest ecosystems, which are either not sufficiently covered by REDD+ and/or which are likely to be affected by displacement (e.g. low carbon forest ecosystems and non-forest ecosystems).

4.5 Issues for the international debate and climate negotiations

Finally, we would also like to raise – and highlight – a number of issues derived from the results of this study, deemed important for consideration in the international debate and negotiations on REDD+.

The report has for example shown how risks and opportunities can vary from country to country, and that there can be significant differences in the respective approaches to address them in each country. Not all identified risks, benefits and opportunities apply to all countries, while additional, sometimes very distinctive opportunities and threats may occur. A singular set of biodiversity safeguards at the Convention level, should this still be envisaged, does therefore not seem to be a practical solution. Rather, parties should be required to conduct systematic biodiversity conservation risk assessments and consequently address these risks through country specific safeguards on the national, or possibly on a regional level. Further, parties should also be encouraged to conduct biodiversity conservation opportunity assessments, including multiple benefits mapping as already carried out and supported e.g. by the World Conservation Monitoring Centre (WCMC).

On risks, we believe that the risk of 'not accounting for forest degradation', which could subsequently lead to not

Indigenous and local communities depend on forest biodiversity in many ways. They are crucial stakeholders in planning and managing REDD+ and conservation projects.

addressing forest degradation, would best be addressed at the Convention level by making it mandatory within a certain timeframe of REDD+ implementation. To facilitate accounting of forest degradation, SBSTA could commission the development of a simplified degradation monitoring and reporting methodology that should also be acceptable for initial performance-based payments.

From our perspective, the current scope of REDD+ should not be extended, in a bid to not further complicate the negotiation process at the international level. It is however deemed important to further promote the acknowledgement of non-forest conservation priorities in this context, and enable developing countries to harness carbon finance for their protection. Developing countries should be able to voluntarily account for carbon emissions and removals from e.g. grasslands and wetlands and – most importantly – if successful be able to financially gain from these emission reductions, which could additionally support important biodiversity conservation.

With appropriate safeguards, the implementation of REDD+ can contribute significantly to the implementation of the CBD Strategic Plan 2011-2020 and the achievement of its Aichi Targets

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Friedrich-Ebert-Allee 40
53113 Bonn, Germany
T +49 228 44 60-0
F +49 228 44 60-17 66
info@giz.de
www.giz.de

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Germany
T +49 6196 79-0
F +49 6196 79-1115

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Addresses of the BMZ offices
BMZ Bonn
Dahlmannstr. 4
53113 Bonn
Germany

BMZ Berlin
Stresemannstr. 94
10963 Berlin
Germany

Authors
Lars Schmidt (lead), Phaivanh Phiapalath (for Lao PDR), James McBreen (for Ecuador)

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