Chapter 1

A Decade of REDD+: Impacts, Challenges and Lessons

Lead authors: John Parrotta, Stephanie Mansourian, Christoph Wildburger and Nelson Grima
Contributing authors: Emily Donegan, Valerie Kapos, Constance McDermott, Marieke Sandker and Bhaskar Vira

Forests[1] play a pivotal role in regulating our global *climate* and represent a cornerstone of our strategy to tackle *climate change*, as highlighted by the Intergovernmental Panel on Climate Change (IPCC) in 2007 (and again in 2021), and by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES - IPBES, 2018; 2019). While forests hold the key to mitigating climate change by absorbing *greenhouse gases* (GHG), their loss and *degradation* also exacerbate climate change by releasing CO_2 and other greenhouse gases (Pörtner et al., 2021).

Recognising the importance of forests in global climate processes, in 2007 the Bali Action Plan (BAP) was adopted at the United Nations Framework Convention on Climate Change (UNFCCC) to reduce greenhouse gas *emissions* from *deforestation* and *forest degradation* (i.e., REDD). In 2010, the Cancún decision on REDD+ was adopted to expand the role of forests in mitigating climate change to include conservation of forest *carbon stocks*, sustainable management of forests and enhancement of forest carbon stocks. REDD+ was conceived as a voluntary, 'nationally-driven', mechanism for *high-income countries* (as listed in Annex 1 of the UNFCCC) to pay *low- and middle-income countries* (non-Annex 1 Parties to the UNFCCC) for the reductions in forest emissions. The Cancún decision also stipulated that REDD+ activities be implemented in phases, beginning with: (a) the development of national strategies or action plans, policies and measures, and capacity-building (i.e., Readiness Phase), followed by (b) the implementation of national policies and measures and national strategies or action plans that could involve further capacity-building, technology development and transfer, and results-based demonstration activities, and evolving into (c) results-based actions that should be fully measured, reported and verified.

Given that fifteen years have passed since the first agreements around REDD, and ten years since the last Global Forest Expert Panel (GFEP) assessment on REDD+, it is timely for this report to examine the evidence to date on the role of REDD+ in global forest *governance*, its translation into practice at national and sub-national scales, its impacts, remaining challenges and emerging lessons.

In 2012, as the architecture of the international REDD+ regime, and development of associated environmental and social 'safeguards' were coming into greater focus, the International Union of Forest Research Organizations (IUFRO) published a Global Forest Expert Panel (GFEP) assessment report (Parrotta et al., 2012) that evaluated the implications of *forest management* interventions foreseen under REDD+ activities. The 2012 GFEP assessment was based on the most current scientific literature on forest *biodiversity*, climate change and forest management, for different types of forests (according to FAO definitions and FAO's Global Ecological Zone classification system - FAO, 2001; 2012). It provided a broad science-based perspective on relationships between forest biodiversity (as defined by the Convention on Biological Diversity) and carbon (referring to the net balance of CO_2 and non-CO_2 GHG emissions and removals) as well as other *ecosystem services*, and how these complex relationships may be affected by management activities implemented to achieve REDD+ objectives. Based on this knowledge, the GFEP report assessed the potential synergies and trade-offs between and among environmental and socio-economic objectives, and their relationship to governance issues at multiple scales, and identified governance and policy options for REDD+ activities that could capture synergies between biodiversity and carbon while avoiding perverse outcomes.

Among the main findings, the 2012 GFEP assessment concluded that reducing the rates of global deforestation and degradation can indeed make a substantial contribution towards both climate change *mitigation* and biodiversity conservation. The extent to which REDD+ activities could simultaneously reduce GHG emissions and contribute to biodiversity conservation was found to depend on the types of *tropical* and *sub-tropical forests* and forest *landscapes* under consideration, their condition (i.e., degradation status), and the socio-economic and governance contexts in which they exist. Further, the assessment concluded that activities focussing on prevention of deforestation and forest degradation were, in general, likely to yield greatest carbon and biodiversity benefits. Under certain conditions, REDD+ activities could also achieve significant social and economic gains according to this assessment. However, it was clear from the available evidence that the degree to which these goals are met through REDD+ would depend on the specific policies and practices employed, and that unless biodiversity and *human well-being* were given sufficient consideration, there was a high risk that REDD+ would fall short in achieving its objectives.

Purpose of the current assessment

Over the past decade, there has been a significant growth and refinement of the scientific literature

1 All terms that are defined in the glossary of this report (Appendix 1) appear in italics the first time they are mentioned in a chapter.

Forested landscape in Costa Rica
Photo © Nelson Grima

related to the global trends in deforestation and forest degradation, and the potential of REDD+ activities to yield lasting carbon benefits (and biodiversity and socio-economic 'co-benefits'). There is also a growing literature on the experiences and outcomes of REDD+ implementation at global, national, sub-national and local scales. Utilising this expanded knowledge base, the current assessment builds on that of 2012 to evaluate the progress, pitfalls and early outcomes of REDD+ as a means of reducing forest-related GHG emissions, as well as the impacts on biodiversity and the *livelihoods* and well-being of people in the landscapes affected by REDD+ interventions.

The current assessment revisits the issues and questions examined in the earlier GFEP assessment, analysing and synthesising scientific information published in the last decade, along with lessons learned since 2012. It summarises and evaluates changes in global forest governance frameworks and REDD+ related decisions and actions, the evolution and influence of the international REDD+ finance 'landscape', and how this has shaped priorities, rules and norms as they relate to the five REDD+ activities (i.e., reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks) eligible for results-based payments.

This assessment also takes stock of progress and critically examines the available evidence on experiences to date related to the three phases of REDD+ (i.e., the 'readiness phase', the 'implementation phase' and the 'results-based actions phase'). In particular, it evaluates the actual on-the-ground impacts – or projected likely impacts – of REDD+ activities on reducing GHG emissions from forest and associated landscapes at various spatial scales. The assessment also evaluates the current state of knowledge regarding costs, benefits and trade-offs of REDD+ activities, and the efficacy and impacts of related social and environmental safeguards on biodiversity and human well-being in landscapes in which REDD+ activities have been implemented. Further, it assesses the challenges, lessons learned and pathways for the future.

The evolution and shifting boundaries of REDD+ since 2011

Since the adoption of the 2010 Cancún decision on REDD+, developments within and outside of the UNFCCC have changed the landscape of REDD+ governance, finance and implementation at national and sub-national scales.

The Warsaw Framework, adopted at the 2013 UNFCCC COP 19, included a series of decisions clarifying several key issues needed to operationalise REDD+ under the UNFCCC. The first of these re-affirmed that results-based finance can come from a wide variety of sources, both public and private[2]. Another series of decisions from the Warsaw COP focused on modalities for REDD+ monitoring, reporting and verification systems. These included guidelines and procedures for the technical assessments of countries' proposed reference emissions levels or forest reference levels[3] and modalities for measuring, reporting and verifying (MRV) forest emissions[4]. The Warsaw Framework also included key requirements on implementing and reporting on environmental and social safeguards[5].

The UNFCCC's 2015 *Paris Agreement* (UNFCCC, 2016), adopted by 196 Parties at COP 21, represented a critical juncture for REDD+. The Paris COP's ambitious aim of limiting global warming to 1.5°C, and its acknowledgement of the role of forests in achieving this aim, brought new momentum to international efforts to address deforestation, forest degradation and *forest restoration*. Article 5.2. specifically recognises the role of REDD+ and offered provisions for mobilising climate finance.

Since 2012, implementation of REDD+ has advanced considerably. There is a growing body of data and analyses on the experiences of countries during the different phases of REDD+ outlined in the 2010 Cancún decision (i.e., 'readiness phase', 'implementation phase' and 'results-based actions phase') and scientific research has examined both progress and shortcomings of REDD+ implementation.

Over the past decade, many countries have transitioned from the readiness phase and activities to the implementation phase, and some of them have reached the results-based actions phase. To date, the majority of multilateral funding for REDD+ has come from three sources: the Forest Carbon Partnership Facility (FCPF), the UN-REDD Programme and the Forest Investment Programme (FIP) of the Climate Investment Funds. In addition, the Green Climate Fund (GCF) was established at COP 16 in Cancún and recognised as a financing mechanism for REDD+ results-based payments in 2014 at COP 19. In 2017, the GCF established a USD 500 million REDD+ pilot financing programme; by 2020, these funds were fully allocated, with results-based payments approved for eight countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Indonesia and Paraguay). The GCF is also engaging in a growing number of forest and land use projects. To date (January 2022) 52 projects have been funded under the "forestry and land use" theme, for a total of USD 1.5 billion (GCF website), including the USD 500 million REDD+ pilot financing programme noted above.

As REDD+ has evolved over the past 15 years, so too have a number of global negotiations, initiatives and programmes aimed at addressing climate change, deforestation, *land degradation*, biodiversity loss, and other major environmental and development challenges:

- The 2030 Agenda for Sustainable Development and its 17 *Sustainable Development Goals* (SDGs) was adopted by UN Member States in 2015 (UNDESA website). REDD+ contributes directly to achieving SDG 13 (Climate Action) and SDG 15 (Life on Land), and indirectly to several other SDGs.
- Since 2019, the Conference of the Parties to the Convention on Biological Diversity (CBD) has been negotiating a post-2020 Global Biodiversity Framework to respond to the continuing rapid decline of biodiversity (CBD website). The Framework, expected to be finalised and approved at the CBD COP 15 meeting (in Kunming, China) in 2022, includes several targets and actions consistent with and supportive of REDD+ (i.e., protected areas, reducing forest degradation, *sustainable forest management* and forest restoration). These include, among others, the Framework's Target 2 (related to restoration of degraded *ecosystems*) and Target 8 (on climate change mitigation and *adaptation*).
- Under the UN Convention to Combat Desertification (UNCCD), the land degradation neutrality target also includes activities associated with REDD+, including tackling drivers of

2 UNFCCC Decision 9/CP.19: https://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=24

3 UNFCCC Decision 13/CP.19: https://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=34

4 UNFCCC Decision 14/CP.19: https://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=39

5 UNFCCC Decision 12/CP.19: https://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=33

forest loss and degradation, and *afforestation*, *reforestation* and restoration (UNCCD website).

- Although non-binding, the Bonn Challenge on FLR launched in 2011 has generated significant interest and mobilisation around forest restoration, with over 60 governments having committed to restoring over 210 million ha at the time of writing (Bonn Challenge website). The UN Decade on Ecosystem Restoration (2021–2030) is likely to further expand the role of and interest in forest restoration (UN Decade on Ecosystem Restoration website).
- The Global Environment Facility (GEF) has included in its draft strategy for the new replenishment period (GEF-8 – 2022–2026) a new integrated programme on "Landscape Restoration" (GEF, 2021). As a major source of funding for implementation of the Rio Conventions, this is likely to impact on future investments in REDD+ or associated activities.

In parallel, the voluntary carbon market has been growing over the last decade, mostly driven by a rise in private sector demand for avoided deforestation offset credits, linked to commitments by companies and other institutions for their planned transition to achieve 'net zero deforestation' by agreed target dates. The voluntary market is also expected to expand significantly through the inclusion of REDD+ and avoided deforestation offsets as part of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which is being coordinated by the International Civil Aviation Organization (ICAO).

Meanwhile, international efforts to address forest loss and degradation stemming from illegal logging or the *conversion of forests* for production of commodities such as palm oil, soy, beef, leather, cocoa and sugar have continued to evolve. These public and private efforts include, among others, the Forest Law Enforcement Governance and Trade's (FLEGT) Voluntary Partnership Agreements (VPAs), the Lacey Act, the EU Timber Regulation aimed at eliminating illegal wood from EU supply chains and the Roundtable on Sustainable Soya. They highlight the central role of law enforcement and market-based mechanisms in the global forest regime.

These developments have both blurred and expanded the boundaries of REDD+, with important implications for its governance, funding, scope of activities, and on-the-ground management interventions and outcomes. In this report, we examine closely how these developments have influenced REDD+ implementation as well as the lessons learnt for REDD+ and related efforts to enhance the climate mitigation potential of forests and forested landscapes through activities aimed at halting and reversing deforestation and forest degradation.

Overview of the report

Chapter 2 of this assessment examines how an evolving array of actors, institutions and finance shape who and what matters for REDD+, what counts as success or failure and who decides. It analyses how the dynamics of power and authority that shape REDD+ play out across three principal interfaces – states, finance and markets – which influence in different ways its governance, actions and outcomes both within and outside the official structures of the UNFCCC. It explores the wider geo-political system within which REDD+ operates and identifies the wide range of actors and actions potentially responsible for REDD+ impacts. At the same time, it also highlights the limited power of REDD+ alone to shift the course of global land use change.

Chapter 3 evaluates the climate change mitigation potential from REDD+, critically evaluating the available scientific literature related to the quantification of forest carbon fluxes, mitigation potential of enhancing forest carbon stocks, and the extent to which REDD+ could contribute to meeting the ultimate goal of the 2015 Paris Agreement. It also summarises the evidence to date on carbon outcomes, examining recent global deforestation and forest degradation trends, as well as critically examining the available evidence related to reported and actual impacts to date of REDD+ on deforestation. Verification options for carbon outcomes, including through independent remote sensing observations, are also discussed.

Chapter 4 lays out the landscape of environmental and socio-economic benefits and risks associated with REDD+ implementation and reviews the experience of REDD+ implementation on non-carbon outcomes, focusing particularly on the past 10 years. Due to the difficulty in directly attributing early REDD+ outcomes to national or sub-national scale interventions, the chapter relies on pilot project-scale programmes (and a longer history of the implementation of related initiatives in the forestry sector) to infer broader insights about the documented and expected impacts of REDD+ implementation on biodiversity, environmental services and livelihoods, and social and economic outcomes. It evaluates available evidence and experience regarding the interactions between carbon, biodiversity and socio-economic impacts of REDD+ implementation, and discusses

associated trade-offs, synergies and feedbacks.

Chapter 5 assesses the challenges that arise in the overarching international REDD+ process, and in national, sub-national and local level application. Specifically, the chapter evaluates how current process, institutional, management and financial challenges at the local, sub-national, national and international scales (as well as across these scales) are likely to affect future implementation of REDD+. It also considers lessons learnt from experience in the last decade in an effort to better inform future interventions, identifying emerging lessons for different groups of stakeholders. In reviewing both challenges and lessons, the chapter places an emphasis on *forest landscape restoration* (FLR) in light of the UN Decade on Ecosystem Restoration (2021–2030) and the growing prominence of FLR in forest-related interventions including REDD+.

Chapters 2–5 also identify critical knowledge gaps that are currently limiting understanding and/or certainty regarding REDD+ governance and impacts of REDD+ implementation on climate mitigation objectives as well as on biodiversity and human welfare in landscapes in which REDD+ activities have been implemented.

Chapter 6 concludes with high level key messages emerging from this assessment.

References

Bonn Challenge website. The Bonn Challenge. Available at: https://www.bonnchallenge.org/ [Accessed on 26 January 2022].

CBD website. Convention on Biological Diversity. Global Biodiversity Framework. Available at: https://www.cbd.int/conferences/post2020 [Accessed on 16 February 2022].

FAO (2001). Global Forest Resources Assessment 2000. Main Report. Food and Agriculture Organization of the United Nations: Rome, Italy.

FAO (2012). Global ecological zones for FAO forest reporting: 2010 Update. Food and Agriculture Organization of the United Nations: Rome, Italy.

GCF website. Green Climate Fund. Available at: https://www.greenclimate.fund/ [Accessed on 26 January 2022].

GEF (2021). First Meeting for the Eight Replenishment of the GEF Trust Fund. Global Environmental Facility.

IPBES (2018). The IPBES assessment report on land degradation and restoration. (Eds.) L. Montanarella, R. Scholes, and A. Brainich. Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services: Bonn, Germany. pp. 748.

IPBES (2019). Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (Eds.) E.S. Brondízio, J. Settele, S. Diaz, and H.T. Ngo. IPBES Secretariat: Bonn, Germany. pp. 1144. ISBN: 978-3-947851-20-1.

Parrotta J.A., Wildburger C., and Mansourian S. (2012). Understanding relationships between biodiversity, carbon, forests and people: the key to achieving REDD+ objectives. A global assessment report. International Union of Forest Research Organizations (IUFRO): Vienna. pp. 161. ISBN: 978-3-902762-17-7.

Pörtner H.-O., Scholes R.J., Agard J., Archer E., Bai X., Barnes D., Burrows M., Chan L., Cheung W.L. (William), Diamond S., et al. (2021). IPBES-IPCC co-sponsored workshop report synopsis on biodiversity and climate change. IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC.

UN Decade on Ecosystem Restoration website. Preventing, halting and reversing the degradation of ecosystems worldwide. Available at: https://www.decadeonrestoration.org/ [Accessed on 26 January 2022].

UNCCD website. United Nations Convention to Combat Desertification. Land Degradation Neutrality. Available at: https://www.unccd.int/actions/achieving-land-degradation-neutrality [Accessed on 16 February 2022].

UNDESA website. Transforming our world: the 2030 Agenda for Sustainable Development. Available at: https://sdgs.un.org/2030agenda [Accessed on 16 February 2022].

UNFCCC (2016). Paris Agreement to the United Nations Framework Convention on Climate Change, T.I.A.S. No. 16-1104. United Nations Framework Convention on Climate Change: Bonn.