



# REWARDS FOR RESULTS? CLIMATE CHANGE, DEFORESTATION AND LAND USE

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From 2008 to 2016 the author was involved in the global 'readiness' effort, notably as an adviser with the United Nations REDD+ program, bringing together expertise from the FAO, the UNDP and UNEP and operating through a small secretariat in Geneva. The aim of this survey is to bring the story up to date. An initial version of this paper was presented at a conference on natural resources and conflicts organised by DIIS and the University of Ghana in Copenhagen in June 2023. The author is grateful for comments and feedback from colleagues at DIIS and elsewhere, including Peter Albrecht, Tom Blomley, Julian Caldecott, Bruce Campbell, Tim Christophersen, Lars Engberg-Pedersen, Mikkel Funder, Marie Gravesen, Peter Iversen, Jakob Kronik, Iben Nathan, Henning Nøhr, Caroline van der Sluys and Martin Speirs. Emilie Marie Falk Due and David Lyndorff Paris provided data assistance.

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**Mike Speirs**

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## **ABSTRACT**

Since the mid-2000s, a global effort has been made to tackle deforestation and forest degradation in order to reduce greenhouse gas emissions and conserve biological diversity. On the basis of agreements within the United Nations Framework Convention on Climate Change, an international forest financing scheme called REDD+ has been set up, which aims to reward results in terms of reduced emissions. The outcomes of the scheme are explored in the survey, which includes evidence from Bolivia, Ghana and Indonesia, three tropical forest countries. Slow progress has been made, but deforestation continues as a result of land-use changes driven by crop cultivation and livestock rearing. A transformation of food systems with 'deforestation-free products' is needed. In addition, the way forward requires the rights and responsibilities of stakeholders, including indigenous people and local communities, to be strengthened on the basis of the rule of law and 'environmental integrity' by using the transparent sharing of benefits to reward results.

## **ABBREVIATIONS**

ART/TREES	Architecture for REDD+ transactions with environmental excellence
CO <sub>2</sub>	Carbon dioxide
COP	Conference of the parties
ERPA	Emissions reduction payment agreement
FAO	Food and Agriculture Organisation of the United Nations
FCPF	Forest Carbon Partnership Facility (World Bank)
FREL	Forest reference emissions level
GCF	Green Climate Fund
GHG	Greenhouse gas(es)
IPCC	Inter-governmental Panel on Climate Change
IPLC	Indigenous people and local communities
LULUCF	Land use, land-use change and forests
NbS	Nature-based solutions
NDC	Nationally determined contribution(s)
REDD+	Reducing emissions from deforestation and forest degradation
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar(s)

## INTRODUCTION: HIGH STAKES IN FORESTS

The purpose of this survey is to summarise and assess progress towards a ‘nature-based solution’ (NbS) specifically to reduce greenhouse gas (GHG) emissions arising from deforestation and forest degradation. In the mid-2000s a global scheme called REDD+ was launched in conjunction with negotiations in the United Nations Framework Convention on Climate Change (UNFCCC). Outcomes since then are explored in the survey, noting not only the emergence of arrangements to pay for reduced GHG emissions in the ‘forest and land-use sectors’, but also the impact of the factors or ‘drivers’ causing deforestation and degradation.

It is increasingly recognised that the conservation and restoration of tropical forests and landscapes are essential components of scaled-up efforts to tackle global warming and to preserve and enhance the biological diversity of the planet. Some alarming analyses indicate that continued deforestation is likely to result in a mid-century tipping point in the Amazon and elsewhere, with a high risk that rainforests will ‘die back’ and disappear through conversion to drier savannah landscapes. This could have significant impacts on local and global ecosystems, food systems and weather patterns, inter alia through disrupted water cycles, as well as on species distribution (rates of extinction). In short a feedback mechanism is emerging: global heating exacerbates deforestation through erratic precipitation and desiccation, as well as more frequent forest and peat land fires, leading to greater biodiversity loss, increases in net GHG emissions and climate change.<sup>1</sup>

This paper includes observations on the international initiatives undertaken in the last couple of decades to halt and reverse deforestation and forest degradation. The crises caused by natural resource mis-management and increased GHG emissions from tropical forests have led to calls for governments and international organisations to devise and introduce NbS.<sup>2</sup> In particular, the dynamics of land-use change and resource management in and around tropical forests highlight the need to understand the roles and strengthen the rights and responsibilities of a wide range of land-use stakeholders, notably indigenous people and local communities (IPLCs).

Put bluntly in United Nations terminology, the ambitions, targets and mechanisms defined in the climate change and biodiversity conventions – dating back to the Rio Earth Summit in 1992 – are confronted with recurrent concerns

<sup>1</sup> The evidence comes from reports by the IPCC (2023) and investigations by Boulton et al. (2022), Lawrence et al. (2022) and Smith et al. (2023). Caldecott (2022) uses evidence gathered in an evaluation of Danish mitigation funding in developing countries (Danida, 2021) as well as a review of evidence on tipping pathways in multiple earth systems, to make the case for speeding up and prioritising mitigation efforts against a mid-century deadline for survival effectiveness. The protection of high carbon-density ecosystems has potential as a particularly cost-effective GHG-reduction strategy.

<sup>2</sup> According to the International Union for Conservation of Nature (IUCN), these can be defined as ‘actions to protect, manage and restore natural or modified ecosystems that address societal challenges (such as climate change, food and water security, natural disasters) effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.’ See inter alia Girardin et al. (2021) and UNDP (2022).

about ‘implementation’. Obviously, an objective in a declaration of intent has to be translated into policies, measures and actions on the ground that lead to the desired outcomes. Confronting the multiple drivers of deforestation and degradation that result in conflicts – notably over land-use change for crop cultivation and livestock-ranching, as well as for mining and infrastructure – is the key to stopping high value forests being cut down rather than left standing.

An associated issue is that of finance, since it is also recognised that halting deforestation and land degradation is a costly business.<sup>3</sup> In a 2022 assessment by the Green Climate Fund (GCF) of approaches to financing forests, it was estimated that USD 300-400 billion would be required each year to preserve and restore ecosystems. Domestic public finance provides around USD 100 billion per year for NbS, including land restoration and improved ecosystem management. Additional financial resources are required on a large scale. However, according to a paper considered by the Board of the GCF (2022), the crux of the matter is that ‘private financial flows still largely incentivise unsustainable land use, meaning that deforestation is economically rational’ (p. 4).

At least 12-15 per cent of global GHG emissions arise due to forest loss, both sources and sinks (6<sup>th</sup> Assessment, IPCC, 2023).<sup>4</sup> Consequently a great deal of effort by a wide range of non-governmental organisations (NGOs), United Nations agencies, the World Bank and others has been devoted to setting up an international mechanism anchored in the UNFCCC which could effectively reduce deforestation and degradation; this has become known as REDD+.<sup>5</sup> Some of the outcomes of the process so far are briefly explored in this paper.

Consideration of many recent studies and reports dealing with NbS and REDD+ constitute the basis for this survey. Original location-specific data-collection has not been undertaken. Given the importance of effective natural resource management in the tropics and the urgency of the need to cut back GHG emissions, as well as to ensure equitable resource access and resolve land-use conflicts, recent efforts to ‘scale up forest conservation’ have generated considerable interest. Thus, one aim of this paper is to provide some insights into the prospects for international action to support ‘nationally determined’ strategies and IPLCs in particular.

<sup>3</sup> Finding funds for forests to support sustainable management and prevent loss and destruction has been on the international agenda for a very long time. The UN’s Food and Agriculture Organisation (FAO) introduced tropical forest action plans back in the 1980s. In 2008, a major study of needs and options for forest finance was published (Eliasch, 2008). However, rates of loss continue to rise, as documented by the FAO (2020 & 2022) and in other reports such as those by the Forest Declaration Assessment Partners (2022).

<sup>4</sup> The IPCC (2023, p. 28) ‘summary of opportunities for scaling up climate action’ shows how reducing the conversion of natural ecosystems makes a significant contribution to net GHG emissions reductions.

<sup>5</sup> REDD+ is defined as reducing GHG emissions from deforestation and degradation, together with the sustainable management of forests and the conservation and enhancement of forest carbon stocks.



## BRIEF OVERVIEW OF REDD+ AS A NATURE-BASED SOLUTION (NBS)

In the 'Paris Agreement' negotiated at the conference of the parties to the UNFCCC in 2015 (COP 21), a scheme to reward countries (or 'jurisdictions') for cutting back emissions from deforestation and degradation was recognised as a component of 'nationally determined contributions' (NDCs), i.e. proposals and plans to mitigate climate change.<sup>6</sup> This was the culmination of a lengthy process to design a REDD+ mechanism that began at COP 13 in Bali in 2007. The four main building blocks were specified in an agreement called the Warsaw Framework, adopted at COP 19 in 2013.

Thus, in 'getting ready' for REDD+ through payment for results, it was agreed that each country (or 'jurisdiction') required a forest reference emissions level (FREL), which would specify the GHG emissions over a given period of time (a baseline).<sup>7</sup> In addition, arrangements for 'robust and transparent' monitoring, verifying and reporting on forest emissions and land-use change, as well as a 'safeguard information system' (SIS), would ensure the 'social and environmental integrity' of the mechanism.<sup>8</sup> Finally, a REDD+ strategy and/or action plan would define the measures proposed in order to achieve results.

With the UNFCCC's approval of the REDD+ mechanism, many parties have been engaged both in 'readiness' and in implementing national policies, measures and strategies. The third stage of the process – payment for results – depends on verification. Thus, a REDD+ 'data platform' is managed by the UNFCCC, and at least 50 designated agencies in tropical countries have submitted estimates of FRELS, action plans, safeguard information and so on.<sup>9</sup>

The importance of effective and credible monitoring and information systems underpinning the REDD+ mechanism cannot be underestimated. As the basis for international payments for reduced emissions, as well as in the interests of transparency, the reliability of the system is vital. The problems of 'additionality', of the double counting of emissions reductions, the permanence of any cutback and the risks of 'leakage' displacing deforestation from one region to another are of particular concern and necessitate high levels of 'integrity' (Böttcher et al., 2023, Sandker et al., 2022, UNDP, 2021).

<sup>6</sup> Mitigation is defined as any action to reduce net GHG emission rates and/or reduce the GHG content of the air. See inter alia, Caldecott (2022) and the IPCC (2023) assessment report.

<sup>7</sup> The unit 'tCO<sub>2</sub>e' (tonnes of CO<sub>2</sub> equivalent) is a measure of the total effect of mixtures of different GHGs, taking into account their different potentials as solar heat-trapping agents.

<sup>8</sup> Seven safeguards were adopted at COP 16 in Cancún. These aim to ensure that REDD+ addresses the rights of, for example, IPLCs, social participation and 'co-benefits' (the preservation of ecosystems and biodiversity).

<sup>9</sup> The platform is at: <https://redd.unfccc.int> The United Nations Development Programme (UNDP) operates a 'Paris Agreement, Land Use, Land Use Change and Forestry and NDC Tool' called PLANT to collate the information on the platform and chart progress towards REDD+ outcomes (reductions in tCO<sub>2</sub>e): <https://www.climateandforests-undp.org/planetquarterlyreport> The FAO also tracks REDD+ progress 'from reference levels to results' (Sandker et al., 2022). See the box in section 3 (below).

As noted above, several United Nations agencies, the World Bank and a number of major NGOs have been major partners in the design of REDD+. Several countries have also made significant contributions, including Germany, Norway and the UK (the 'GNU' group).<sup>10</sup> Two facilities (funds) have been particularly important:

- The World Bank's Forest Carbon Partnership Facility (FCPF) was set up in 2008. A carbon fund (CF) totalling some USD 875 million is available, with allocation of resources subject to the conditions of an emissions reduction payment agreement (ERPA) negotiated in each case.<sup>11</sup> Recently, after lengthy 'readiness preparation', Ghana and a few other countries have concluded agreements to access the facility's funds.
- In accordance with the provisions of the UNFCCC, the Green Climate Fund (GCF) established a 'pilot programme' of results-based payments for REDD+ with an initial allocation of USD 500 million, approved by the Fund's Board (GCF, 2017). Seven Latin American countries and Indonesia have accessed these resources, and assessment of verified progress towards reducing emissions in order to trigger payments is underway.

The voluntary carbon market (VCM) has also become an important mechanism for efforts to finance low-carbon development around the world. Issuing carbon credits for projects that demonstrate reduced emissions in the 'forest and land-use' sectors is an expanding business, with an institutional landscape comprising numerous private companies and specialised verification organisations. However, recent controversies associated with ensuring that rewards for reducing emissions are based on 'high quality, jurisdictional integrity' have led to some doubts and reticence about the effectiveness of these schemes.<sup>12</sup>

What has been achieved through REDD+? Some observers are not impressed (Karsenty, 2021). Despite the appeals for joint concerted global action to reduce deforestation and degradation (in New York in 2014 and again at COP 26 in Glasgow in 2021), rates of forest loss are generally high. Global demand for food and timber, as well as for minerals, continues to drive the expansion of agriculture, extractive industries and other land uses into forests. Recent data indicate that only tropical Asia may be 'on track' to halt deforestation by 2030.<sup>13</sup>

<sup>10</sup> A vast literature assessing REDD+ and finance for tropical forests can be consulted. Initial assessments included those by Angelsen et al. (2009) and Funder (2009). The support provided by international agencies has been subjected to numerous evaluations in the course of the last ten years. Early evaluations included the studies by Blomley (2017) and NORAD (2017), as well as a synthesis by the OECD (2016).

<sup>11</sup> See: <https://www.forestcarbonpartnership.org>

<sup>12</sup> The main issues in using carbon markets to fund forest management are summarised in a note by NICFI (2023). See also Boyd et al. (2023) and reports by the UNDP (2021) and the WWF (2021).

<sup>13</sup> See: Forest Declaration Assessment Partners (2022), Are we on track for 2030?

## PROGRESS TOWARDS RESULTS BASED PAYMENTS

To illustrate progress made towards reducing emissions from deforestation and degradation in tropical countries, some measures taken and issues arising in three countries are briefly considered in the following. Bolivia, Ghana and Indonesia are contrasting cases, from which many insights can be derived. Key indicators for these countries are shown in Table 1 (below).

**Table 1. Key data for three countries**

	<b>Bolivia</b>	<b>Ghana</b>	<b>Indonesia</b>
<b>Population, 2022 millions</b>	12.0	32.4	279.1
<b>GDP per capita 2021, USD at PPP</b>	8,846	5,791	13,027
<b>Total GHG emissions in 2019, tCO<sub>2</sub>e.</b>	140,000,000	48,800,000	2,000,000,000
<b>GHG emissions 2019 per capita, tCO<sub>2</sub>e.</b>	12.0	1.6	7.24
<b>Forest area, 1990 1000 ha.</b>	57,805	9,924	118,545
<b>Forest area, 2020 1000 ha.</b>	50,834	7,986	92,133
<b>Annual change in forest area, 2010-20</b>	-0.43%	high	-0.78%

Sources: FAO (2020), Our World in Data, World Bank (2022 & 2023).

Bolivia is an Amazon basin country and shares many of the challenges faced in neighbouring Brazil in terms of dealing with land-use change. But until recently the government has adopted a critical stance towards REDD+. The Ghanaian government has been involved in REDD+ since the outset, completing the 'readiness' steps and starting to draw on results-based payments from the World Bank's FCPF in 2023. Indonesia is one of the 'big three' tropical forest countries, together with Brazil and the Democratic Republic of Congo (DRC). The government has focused on the REDD+ process in its nationally determined commitments (NDCs) and has also started to receive results-based payments from

both the GCF and the World Bank.<sup>14</sup> The main steps and initiatives (agreements) are shown in Table 2 (below).

**Table 2. Results-based payments in three countries**

	<b>Bolivia</b>	<b>Ghana</b>	<b>Indonesia</b>
<b>FREL submitted to the UNFCCC in tCO<sub>2</sub>e/year (with reference period)</b>	99,390,557 (2016-21)	1,526,457 (2001-15)	267,000,000 (2006-20)
<b>Norway (NICFI), in USD</b>	None	None	56 million for results from 2016-17, total of 11 million tCO <sub>2</sub> e.
<b>Green Climate Fund (GCF) pilot REDD+ results based payments, in USD</b>	None	None	104 million for results from 2014 to 2016 submitted to the UNFCCC, total of 20 million tCO <sub>2</sub> e.
<b>World Bank, FCPF Carbon Fund, Emissions Reduction Payment Agreement (ERPA) in USD</b>	None	4.9 million as first payment for results from 2019 to 2024, for an estimated total of 10 million tCO <sub>2</sub> e.	110 million for results submitted to World Bank, for an estimated total of 22 million tCO <sub>2</sub> e.

Sources: FAO, GCF, UNDP and World Bank.

## **Bolivia**

Despite participation in the initial negotiations from 2007 to design an international mechanism for REDD+, in 2012 the Bolivian government opted for an alternative approach emphasising ‘joint mitigation and adaptation’ for tropical rainforest management. This was included in the UNFCCC’s Paris Agreement, as the government lobbied for ‘non-market’, low-carbon strategies. The upshot was that Bolivia did not participate in the preparations – i.e. the steps defined for

<sup>14</sup> As an aside, it is worth noting that from the mid-1990s to around 2017-18, Danish development assistance provided funds for natural resource-management schemes in these three countries (and others such as Cambodia, Nepal and Tanzania): i) through support for indigenous people’s land titling in Bolivia; ii) through a ‘pro-poor’ scheme with the IUCN in Ghana which emphasised stakeholder consultations and gender equity in forest management; and, iii) through rainforest conservation and co-funding community forest management with the World Bank in Indonesia. These development programmes have all been phased out.

REDD+ readiness – and thus did not qualify for results-based funding through the international schemes of the GCF and the World Bank (Müller et al, 2014).

Meanwhile, there has been a steady expansion of the ‘agricultural frontier’ in the Amazon lowlands, with a considerable loss of rainforest, as soya-bean cultivators (exporters) and cattle-ranchers have encroached in many regions. These processes have accelerated over the past decade as the government seeks to re-locate farmers from the Andean highlands, whose agricultural production systems have been undermined by lack of water resulting from drought and melting glaciers caused by climate change. With widespread severe forest fires and land-clearance schemes for farming, Bolivia’s per capita GHG emissions have rapidly increased to the highest levels in Latin America (Estado Plurinacional de Bolivia, 2020).

Recently the stance of the Bolivian government appears to be changing, possibly due to recognition that funding through the GCF could be used to improve forest protection and management, as is the case in seven other Latin American countries. At the beginning of 2023 the government finally submitted a FREL to the UNFCCC (Estado Plurinacional de Bolivia, 2023). As Andersen et al. (2022) have argued, efforts to tackle the drivers of deforestation in Bolivia are increasingly urgent. This could be done by introducing compensation payments for farmers, linked to verified reductions in forest losses measured in hectares (rather than in tonnes of CO<sub>2</sub>e). Interestingly, the groundwork for such a scheme could build on the collective land titles that have been registered over the years in the Amazon basin, particularly for IPLCs. However, it remains to be seen whether the government will aim for participation in another round of GCF REDD+ payments, having submitted the baseline (FREL) to the UNFCCC.

## **Ghana**

The government of Ghana has participated in the design and implementation of REDD+ from the outset. In addition to the FREL submitted to the UNFCCC in 2017 (with an update in 2021), the government, through the Forestry Commission, has published a REDD+ national strategy, consolidated the forest-monitoring system and defined comprehensive safeguards information arrangements (Republic of Ghana, 2021a and 2021b). Together with Mozambique, Ghana appears to be in the forefront of African efforts to lay the foundations for results-based transfers for verified emissions reductions from forests and land-use change.

However, a major concern in Ghana is to develop land-use practices that will reduce the very high rate of deforestation, recently estimated at 3 per cent annually (WEF, 2022) and largely caused by extractive industries such as illegal gold-mining and by felling forests and converting land for cocoa cultivation. Small-scale mining is a significant cause of deforestation, and the removal of valuable timber from the forests – even when banned by law – illustrates the power of illegal operators.

The government has been successful in attracting international finance to support land-use planning, with forest investment programmes backed by multinational

development banks and by private companies involved in export crop production. These efforts have been described as a 'commodity-based approach to forest conservation.'<sup>15</sup> Thus, having signed an ERPA in 2019, funding by the World Bank is expected to contribute to the Forestry Commission's programme in 'hotspot intervention areas', where cocoa farmers and agro-enterprises will participate in improved landscape management, targeting both crop yields and forest management, including agro-forestry. Some 800,000 farmers are being encouraged to restore degraded land and plant new shade trees with a view to increasing cocoa yields.

The arrangements for qualifying for FCPF payments are based on a verification methodology for the specific jurisdiction concerned and not on the national FREL.<sup>16</sup> But Ghana was not amongst the first group of countries to qualify for the GCF pilot programme for REDD+ results-based payments. Furthermore an unresolved issue in forest and landscape management in Ghana is underlined in a recent assessment of pathways to low-carbon development:

Further action is required on land and tree tenure security with buy-in from traditional leaders, landowners and farmers. The recognition of land rights can enhance land tenure security for landholders and can be a key incentive for the implementation of climate smart agricultural practices that enhance the adaptive capacity of crops and ecosystem services. Clear and recognised tenure rights are especially important for women who face discriminatory land rights and for receiving performance-based payments from carbon financing instruments (World Bank, 2022, p. 21).

## **Indonesia**

Turning to Indonesia, it is worth noting that, as in Ghana, REDD+ generated considerable interest from the outset. It is estimated that deforestation and forest fires account for around 42 per cent of Indonesia's GHG emissions. The idea of benefitting from international commitments to provide forest finance was attractive to the Indonesian government, which has made considerable efforts to design and implement low-carbon development strategies in the past decade.

<sup>15</sup> See inter alia, the study of 'cocoa-driven deforestation' by Asiagbor et al. (2022) and the report on forest conservation by the WEF (2022). It is worth noting that Ghanaian organisations have also participated in the new international LEAF coalition, which promotes voluntary carbon markets based on a system for the quantification and verification of emissions reductions called ART/TREES. See: <https://leafcoalition.org/wp-content/uploads/2022/08/LEAF-country-brochure-Ghana.pdf>

<sup>16</sup> Four years elapsed from the signature of the ERPA to the transfer of the first FCPF payment of USD 5 million towards an estimated emissions reduction of 10 million tCO<sub>2</sub>e from 2019 to 2024. See: <http://www.ghanaredddatahub.org> Further information on the ERPA and requirements for results based payments by the World Bank can be found at: <https://www.forestcarbonpartnership.org/country/ghana>

However, the REDD+ process in Indonesia is replete with twists and turns. An initial agreement with Norway in 2010 aimed to consolidate reduced deforestation and degradation through a moratorium on land-use change.<sup>17</sup> At the same time, a large number of schemes backed by both international agencies and numerous other bilateral partners, including Australia, the European Commission and Japan, were launched to determine the dynamics of forest loss and to devise policies and measures to deal with the drivers of land-use change. In parallel, various forest-sector investment programmes have also been important. Tackling the conversion of rainforests into palm-oil plantations, with massive peat fires across the archipelago, has been the main concern.<sup>18</sup>

The Indonesian government has successfully consolidated these initiatives within the framework of a programme on forests and land use (FOLU) as a 'net sink' for reduced GHG emissions. This includes the establishment of an environment fund for forests (the BPDLH) as defined in the national REDD+ strategy. Furthermore, both in 2016 and in the form of a revised update in 2022 the FREL has been submitted to the UNFCCC together with specification of the forest monitoring system, as well as arrangements for verification, reporting and safeguard information. In short, REDD+ preparation and implementation has satisfied the various requirements laid down in the UNFCCC's Warsaw Framework and the Paris Agreement (Republic of Indonesia, 2021, 2022a & 2022b).

As shown in Table 2 above, in approving verified emissions reductions, the GCF has included a first allocation of results-based payments to Indonesia to the tune of USD 103 million, aimed at improving and expanding social forestry schemes involving local communities. Furthermore, in 2020 the World Bank signed an ERPA for a scheme in East Kalimantan, entailing a payment of USD 110 million for expected emissions reductions of up to 22 million tCO<sub>2e</sub>, together with a 'benefit-sharing' plan for supporting improved forest management and land use in the province.<sup>19</sup> The government is also setting up a carbon trade scheme.<sup>20</sup>

As in Ghana, the question of land-use planning and regulation based on recognised rights of tenure is important in Indonesia. In an overview of climate change and development options, the World Bank (2023, p. 21) argues that expanded forest protection in peat-lands and mangroves is a priority, which requires that 'conservation values are correctly designated' and that the 'tenure of

<sup>17</sup> Although this agreement was subsequently abandoned, since the Norwegian government did not transfer the expected payments, in 2022 it was revived to the tune of USD 56 million as compensation for over 11 million tonnes of verified emissions reductions from 2016-17 (as shown in the table, above). Updates can be found on Mongabay: <https://news.mongabay.com/2022/11/in-new-climate-deal-norway-will-pay-indonesia-56-million-for-drop-in-deforestation-emissions/>

<sup>18</sup> There is an extensive literature on the dynamics of land-use change. A historical survey by Gaveau et al. (2022) indicates that slowing deforestation resulted from reduced palm-oil cultivation, where 'price declines were associated with the decrease in industrial plantations and decrease of forest loss.'

<sup>19</sup> See: <https://www.greenclimate.fund/project/fp130> and the FCPF for a breakdown of the steps leading to the ERPA for East Kalimantan: <https://www.forestcarbonpartnership.org/country/indonesia>

<sup>20</sup> As Böttcher et al. (2023) note in a recent survey of forestry as a source of carbon credits, 'Indonesia will develop its own standards and registry' for this purpose (p. 173).

different land functions is clarified.’ Strengthening law enforcement in Indonesia is complicated and fraught with conflicts and uncertainties (Lund, 2020). Nonetheless, it is an essential component of low-carbon development strategies for the future, in Indonesia and elsewhere.<sup>21</sup>

### **Progress summary**

Overall global progress towards results-based payments can be charted and assessed using data available from the UNFCCC REDD+ web platform and the UNDP’s PLANT assessment reports, as well as the dashboard of the World Bank’s Forest Carbon Partnership Facility (FCPF) and the report by the FAO (Sandker et al, 2022). A summary is shown in the box (below). It is worth noting that global emissions from land use, land-use change and forestry (LULUCF) were estimated at 5.8 billion tCO<sub>2</sub>e in 2019 (a little more than 11 per cent of all emissions). Emissions reduction results are reported to the UNFCCC in biennial updated reports (BURs). In the period from 2006 to 2020, 18 countries submitted 27 results estimated to total 11.5 billion tCO<sub>2</sub>e, i.e. an average of 765 million tCO<sub>2</sub>e per year. Brazil accounts for over 80 percent of these emissions reductions.

<sup>21</sup> In addition to REDD+ progress in the three countries summarised here, numerous other cases are worth investigating. Policies and practices to reduce forest loss in Brazil and in the DRC are particularly significant, while the Central African Forest Initiative (CAFI) is also of considerable interest. See: <https://www.cafi.org>



**Box 1. Numbers of countries that have implemented the different REDD+ measures**

Measure (step)	Global	Africa	Asia	LAC
REDD+ in NDC	49	18	13	18
<b>Warsaw frame</b>				
FREL submitted	60	20	19	21
REDD+ strategy	38	12	13	13
Forest monitor	33	8	11	14
Safeguards info.	20	2	6	12
<b>GCF pilot</b>				
result payments	8	0	1	7
<b>FCPF-CF</b>				
ERPA signed	15	6	5	4
ERPA disbursed	3	2	0	1
<b>VCM</b>				
ART/TREES	11	2	3	6

**Explanatory notes:**

Number of countries where REDD+ is mentioned as mechanism to reduce GHG emissions in the nationally determined contributions (NDCs) submitted to the UNFCCC.

The Warsaw framework for REDD+ agreed at COP 19 of the UNFCCC comprises:

- Submission of a forest reference emissions level (FREL) in tCO<sub>2</sub>e– the baseline;
- A national REDD+ strategy;
- An operational forest monitoring system;
- A safeguards information system.

The GCF pilot programme for REDD+ has granted almost USD 500 million for results payments to the following countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Indonesia and Paraguay (for an estimated total of approx. 133 million tCO<sub>2</sub>e).

The World Bank's Forest Carbon Partnership Facility set up a Carbon Fund (CF) with contributions totaling USD 875 million and with the following outcomes:

- Emissions Reduction Payments Agreements (ERPAs) have been signed with the governments of Chile, Costa Rica, Dominican Republic, DRC, Fiji, Ghana, Guatemala, Lao PDR, Indonesia, Madagascar, Mozambique, Nepal, Republic of Congo and Vietnam;
- ERPAs, i.e. results-based payments, have been disbursed on the basis of monitoring and verification to Costa Rica, Ghana and Mozambique.

ART/TREES or 'architecture for REDD+ transactions' with 'environmental excellence' is one of the accounting standards launched in 2021 for the voluntary carbon market (VCM). The number of countries where according to Sandker et al. (2022) there is the potential to use ART/TREES standards for verified emissions reductions is shown in the table.

## OBSERVATIONS ON THE WAY FORWARD

Despite the increasing focus on forests and land-use change in both international declarations and proposals for low-carbon development pathways, the outcomes so far are not impressive. ‘Commodity-driven tree-cover loss’ has declined, but deforestation rates are still high. Furthermore, although many developing countries ‘have forest strategies in the context of REDD+, laying the groundwork for important reforms and in some cases important policy changes’, there is still a long way to go. ‘In most cases the programmes have not yet yielded a reduction in deforestation and only a handful of countries has received payments for forest emission reductions’ (Forest Declaration Assessment Partners, 2022, p. 3).

According to Karsenty (2021), international forest finance initiatives have largely ignored the ‘political economy of deforestation’. Furthermore, ‘REDD+ negotiators created a labyrinthine system that earns experts a fortune but has done little to help rural people overcome the farming, land and demographic constraints they face.’ Addressing land inequality and insecurity, as well as other reforms to ‘transform agri-food systems’ and to consolidate ‘institutions needed for the rule of law, may be more important than results-based payments that reward circumstance rather than effort’ (pp. 46-47).<sup>22</sup>

There is little doubt that substantial land and natural resource investments are needed, in addition to the relatively small sums that have been allocated to pay for results. In the case of the GCF, around USD 2 billion has been provided for joint mitigation and adaptation approaches since 2015, four times the amount allocated to the pilot REDD+ programme. The GCF is also reviewing the outcome of the pilots in eight countries, seven in Latin America and Indonesia. There have been criticisms leveled at the scorecard system used to determine the use of the funds, notably with respect to inflated baseline estimates (in the FRELs), as well as concerns about the transparency of the monitoring systems and the measures taken to ensure that emissions reductions are permanent, i.e. prevent ‘reversals’ and leakage (Böttcher et al., 2023; Leonard, 2021 and Sandker et al., 2022). These issues are high on the agenda as the GCF Board prepares to follow up the pilot REDD+ scheme with a new allocation of results-based payments, probably in 2024.

As far as the World Bank is concerned, although the FCPF Carbon Fund was established in 2008, of the USD 875 million available for REDD+ results-based payments, less than USD 65 million has been disbursed so far on the basis of ERPAs with recipient countries and jurisdictions. A cursory review of the ERPAs in Ghana, Indonesia and elsewhere reveals the complexity of the ‘readiness’ and

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<sup>22</sup> Further investigation of the political economy of forest and land-use management in Africa can be found in the papers edited by Ongolo et al. (2021). Caldecott (2021) and Hajjar et al. (2021) also discuss these issues in a range of countries. An interesting example of proposed policy measures for tropical forest regions is the World Bank’s ‘economic memorandum’ for the Amazonian frontier in Brazil edited by Hanusch (2023) and entitled: ‘Towards sustainable and inclusive development’. Measures proposed range from investment in health and education services in the region, to improved rural credit and tax collection, as well as land registration and the enforcement of land-use restrictions to protect forests.

verification processes leading to fund disbursement (World Bank, FCPF Annual Report, 2022). In short, huge efforts have been made to create a forest finance flow, which isn't flowing very fast.

There are many reasons for the difficulties. Ensuring adequate and reliable measurement of gains and losses in forest cover, as well as due diligence prior to transfers of funds, are critical. The concerns that have arisen because of deficiencies in the VCMs also underline the problems. Little is gained by payment for reduced emissions that cannot be verified 'with integrity' (NICFI, 2023 and WWF, 2021).

Turning to the major drivers of deforestation and degradation, the Forest Declaration Assessment Partners (2022) are blunt in their criticisms of the failure of many agri-business enterprises around the world to tackle the defects in their supply chains. Thus, only a quarter of major companies in the agricultural sector have announced 'clear, comprehensive and ambitious policies to eliminate deforestation'. In this context, it will be interesting to observe the impact of the EU's measures to prevent the sale of products such as coffee, chocolate and palm oil if they have been grown on deforested land (Anon, 2023; Forests of the World, 2023). The extent to which producers and traders are responsive to this new EU legislation will also depend on the thorough tracking and verification of supply chains. In the medium term, strengthened global trade standards can usefully complement international forest finance so that 'anti-deforestation laws' make good sense and can turn bad actors into good!

The strength of organisations in tropical forest zones is the key factor. As the World Resources Institute and Climate Focus (2022) have argued, based on an investigation of the involvement of IPLCs in forest policies and the impact in terms of the NDCs submitted to the UNFCCC, the forest lands owned by these citizens in tropical regions have very significant potential as net carbon sinks. However, 'these lands are under constant threat from ranching, mining and logging much of which is illegal and linked to corruption and collusion between governments and illegal actors.' Thus, 'governments need to ensure IPLCs have full legal rights to the land they own; recognise and respect their right to free, prior and informed consent; take measures to ensure rights are respected in practice; and actively empower IPLCs to manage their forests through adequate finance and support' (p. 2).<sup>23</sup>

This is an exciting agenda, responding to the need for thorough political economic analysis as the basis for funding NbS. Much can be achieved with a combination of land-use policy reforms and additional forest investment, combined with results-based payments (à la REDD+). However, and in conclusion, external

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<sup>23</sup> The recently updated report on global land ownership is valuable in this context (Rights & Resources, 2023). Arguably, there are also threats to land tenure from within the REDD+ system. For example, if land values increase, then forests may be at risk from external 'grabs' or from sales by the indigenous people themselves, which may lead to livelihood collapse. The importance of clarifying IPLC rights in the context of payments arrangements such as REDD+ cannot be underestimated.

finance for forests as sinks and sources of GHG emissions will only be effective where land rights are enforced and respected, through ‘the rule of law, not the rule of saw’.<sup>24</sup> This means that indigenous people and local communities are empowered to manage both natural and financial resources in the context of efforts to tackle global warming, transform food systems and enhance biodiversity. NbS with rewards for results can play an important role as governments develop measures to confront the challenges.

<sup>24</sup> The rule of law was emphasised by *The Economist* (March 2023) in a survey of forests and climate change based on analyses of these issues in Brazil, the DRC and Indonesia. Transparent benefit-sharing arrangements underpin the efforts to promote improved forest and natural resource management using results payments in these countries and elsewhere.

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